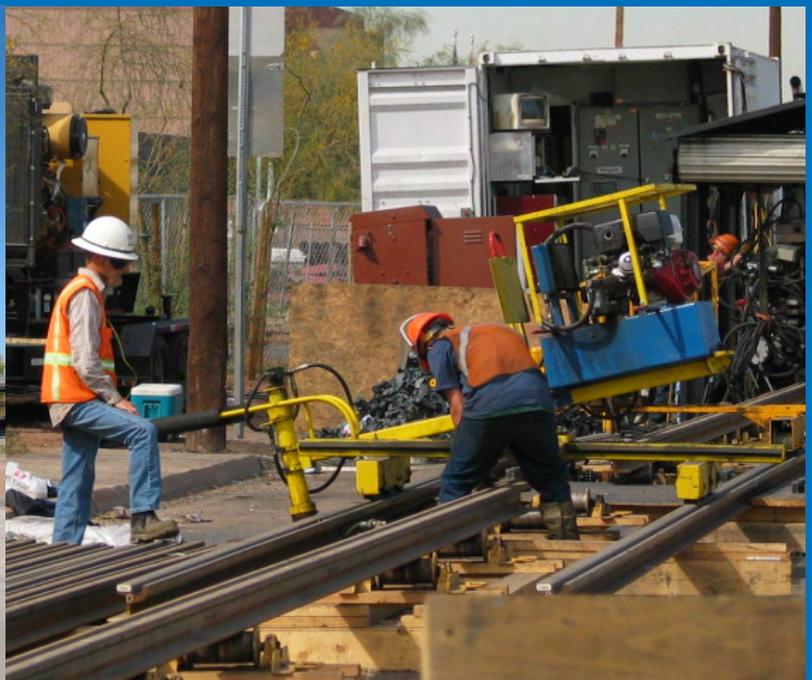




REGIONAL TRANSPORTATION PLAN 2007 UPDATE

JULY 2007



REGIONAL TRANSPORTATION PLAN

2007 UPDATE

JULY 2007

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INTRODUCTION

The Regional Transportation Plan (RTP) is a comprehensive, performance based, multi-modal and coordinated regional plan, covering the period through Fiscal Year (FY) 2028. The RTP covers all major modes of transportation from a regional perspective, including freeways/highways, streets, public mass transit, airports, bicycles and pedestrian facilities, goods movement and special needs transportation. In addition, key transportation related activities are addressed, such as transportation demand management, system management, safety, security and air quality conformity analysis. The RTP is prepared, updated and adopted by the Maricopa Association of Governments, which is the regional planning agency for the Maricopa County area. The RTP is developed through a cooperative effort among government, business and public interest groups, and includes an aggressive community outreach and public involvement program.

Maricopa Association of Governments

The Maricopa Association of Governments (MAG) was formed in 1967 and is the designated Metropolitan Planning Organization (MPO) for transportation planning in the Maricopa County region. MAG has also been designated by the Governor of Arizona to serve as the principal planning agency for the region in a number of other areas, including air quality, water quality and solid waste management. In addition, MAG develops population estimates and projections for the region, and conducts human services planning. MAG strives to develop plans that are comprehensive, consistent and compatible with one another. For example, the RTP must be in conformance with the air quality plans for the metropolitan area. MAG is responsible for the air quality conformity analysis that shows whether the transportation plan complies with the provisions of air quality plans and other air quality standards.

MAG members include the region's 25 incorporated cities and towns, Maricopa County, the Gila River Indian Community, the Fort McDowell Indian Community, the Salt River Pima-Maricopa Indian Community, the Citizens Transportation Oversight Committee, and the Arizona Department of Transportation. The MAG Planning area includes all areas within Maricopa County, Arizona (see Figure I-1). The RTP is developed under the direction of the Transportation Policy Committee (TPC). The TPC is a public/private partnership established by MAG and charged with finding solutions to the region's transportation challenges. The Committee consists of 23 members, including a cross-section of MAG member agencies, community business representatives, and representatives from transit, freight, the Citizens Transportation Oversight Committee, and ADOT. The TPC is dedicated to transportation planning and decision-making that addresses diverse transportation needs throughout the region. The Committee makes its recommendations to the MAG Regional Council, which adopts the final RTP.

The MAG Regional Council is the final decision-making body of MAG. The Regional Council consists of elected officials from each member agency. The Chairman of Citizens Transportation Oversight Committee (COTC) and the Maricopa County representatives from the State Transportation Board also sit on the Regional Council, but only vote on transportation-related issues. Many policy and technical committees provide analysis and information to the MAG Regional Council. The MAG Regional Council is the ultimate approving body for the MAG RTP and MAG Transportation Improvement Program. Any changes to the MAG RTP, or the funded projects that affect the Transportation Improvement Program, including priorities, must be approved by the MAG Regional Council.

Recent RTP Updates

The Maricopa Association of Governments generally adopts annual updates of the RTP. In addition, MAG periodically conducts comprehensive reviews of the Plan as part of the update process. The most recent major update of the RTP was adopted by the MAG Regional Council on November 25, 2003, which culminated a three-year planning effort. The in development of the Regional Transportation Plan was distinguished by the use of performance-based planning and the application of performance measures in the evaluation of alternatives. In a letter dated December 9, 2003, the U.S. Department of Transportation issued a finding of air quality conformity for the MAG RTP, as adopted on November 25, 2003.

Since its adoption in 2003, the RTP has been updated annually to reflect changing conditions and new information. On June 23, 2004, the MAG Regional Council took action to approve amendment of the RTP to reflect the light rail transit changes proposed by Valley Metro Rail, affecting the Minimum Operating Segment (MOS) and the Metrocenter Link. In a letter dated July 6, 2004, the U.S. Department of Transportation issued a finding of air quality conformity for the MAG RTP, as approved on June 23, 2004.

On July 27, 2005, the MAG Regional Council approved the MAG Regional Transportation Plan - 2005 Update. The modifications included within the 2005 RTP Update affected the phase in which certain highway and arterial projects were scheduled for construction. These changes were reflected, as appropriate, in the MAG FY 2006-2010 Transportation Improvement Program. In a letter dated August 31, 2005, the U.S. Department of Transportation issued a finding of air quality conformity for the MAG RTP, as approved on July 27, 2005.

On July 26, 2006, the MAG Regional Council approved the MAG Regional Transportation Plan - 2006 Update. The 2006 Update summarized the elements of the Regional Transportation Plan (as previously adopted), provided revised revenue estimates, and included life cycle programs for freeways/highways, arterial streets, and transit. Inclusion of the life cycle programs replaced the project phasing designations and funding levels originally identified in the RTP. In a letter dated August 17, 2006, the U.S. Department of Transportation issued a finding of air quality conformity for the MAG RTP, as approved on July 26, 2006.

2007 RTP Update

The following report presents the Regional Transportation Plan - 2007 Update. The 2007 Update and the regional transportation planning process in the MAG area fully comply with Federal and State planning requirements. This includes the Federal Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), Arizona House Bill 2292, and Arizona Revised Statute 28-6354.

The 2007 Update is organized into three major sections: (1) Section One: Planning Process, (2) Section Two: Transportation Modes, and (3) Section Three: System Operations and Management. Section One contains Chapters One through Six, which address the approach taken in developing the Plan, including organizational relationships, Federal and State planning mandates, public involvement, Title VI and Environmental Justice considerations, consultation efforts, planning goals

and objectives, and the regional development outlook. Section Two encompasses Chapters Seven through Sixteen, which cover modal investment strategies, including planned transportation facilities, capital investments by mode, programs such as special needs and enhancement activities, and a financial plan. Section Three consists of Chapters Seventeen through Twenty-Three, which describe programs that monitor and improve the performance of the existing system, including performance monitoring and assessment, demand and congestion management, and transportation safety and security. Air quality conformity is also covered in Section Three.

2007 Update Regional Transportation Plan

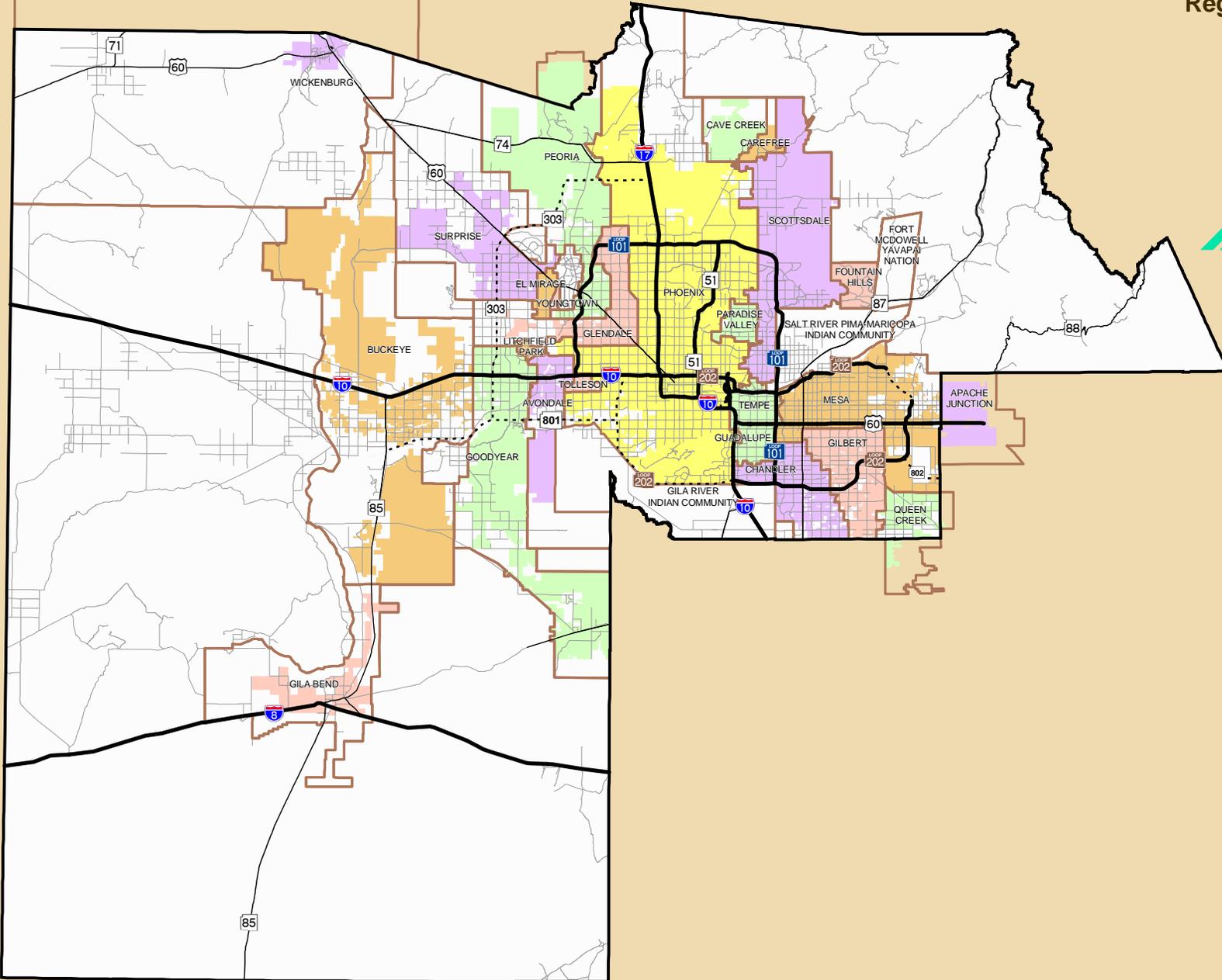
Fig. I-1



MAG Region

-  Municipal Planning Area
-  Existing Freeway
-  Planned Freeway/Highway
-  Highways
-  Other Roads

MAP AREA



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.



SECTION ONE

PLANNING PROCESS

CHAPTER ONE

REGIONAL TRANSPORTATION PLANNING APPROACH

The Maricopa Association of Governments Regional Transportation Plan (RTP) covers the period through Fiscal Year 2028 and identifies future transportation facilities, discusses potential environmental mitigation activities, includes operational and capital investment strategies, provides a financial plan for implementation, coordinates with the development of air quality control measures, and has been developed using an extensive public participation process. The regional transportation planning approach has been designed to respond to Federal and State mandates directed at the metropolitan transportation planning process, including the requirements of the Federal Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) and Arizona House Bill 2292. A number of different entities share responsibility for developing, implementing and monitoring the RTP, including preparation of long-range plans, identification of programs and projects, the construction of projects, and the provision of transportation services.

Regional Roles and Responsibilities

A number of regional and State agencies and committees have responsibilities related to the RTP, including coordination, management, planning, oversight and project implementation. A brief description of these agencies and committees, as well as their role in the RTP process, is provided below.

Maricopa Association of Governments

The Maricopa Association of Governments (MAG), formed in 1967, is a regional planning agency and serves as the designated Metropolitan Planning Organization (MPO) for Maricopa County, including the Phoenix urbanized area. MAG member agencies include the region's 25 incorporated cities and towns, Maricopa County, the Gila River Indian Community, the Fort McDowell Indian Community, the Salt River Pima-Maricopa Indian Community, the Citizens Transportation Oversight Committee, and the Arizona Department of Transportation.

MAG is responsible for the coordination of the following regional planning activities:

- Multi-modal Transportation Planning,
- Air Quality,
- Wastewater,
- Solid Waste,
- Human Services, and
- Socioeconomic Projections.

MAG strives to develop plans that are comprehensive, consistent, and compatible with one another. For example, the RTP must be in conformance with the air quality plans for the metropolitan area. MAG is responsible for the air quality conformity analysis that shows whether the transportation plan complies with the provisions of air quality plans and other air quality standards. MAG is also

responsible for the development of the Arterial Street Life Cycle Program. Individual projects in this program are constructed by the cities, towns and Maricopa County.

The MAG Regional Council is the decision-making body of MAG. The Regional Council consists of elected officials from each member agency. The Chairman of Citizens Transportation Oversight Committee (COTC) and the Maricopa County representatives from the State Transportation Board also sit on the Regional Council, but only vote on transportation-related issues. Many policy and technical committees provide analysis and information to the MAG Regional Council.

The MAG Regional Council is the ultimate approving body for the MAG RTP and MAG Transportation Improvement Program (TIP). Any change in the RTP or the projects funded that affect the TIP, including priorities, must be approved by the MAG Regional Council.

Transportation Policy Committee

The MAG Transportation Policy Committee (TPC), which met for the first time in September 2002, was initially tasked with the responsibility of developing the Regional Transportation Plan (RTP) and recommending the plan for adoption by the MAG Regional Council. The TPC recommended a Plan in September 2003, which was unanimously approved and adopted by the MAG Regional Council on November 25, 2003. In addition to developing the RTP, the TPC has continuing responsibilities to advise the Regional Council on transportation issues, including, but not limited to recommendations regarding: the MAG Transportation Improvement Program; the freeway and highway, arterial, and transit Life Cycle Programs; and requested material changes and amendments to the RTP.

The TPC is comprised of 23 members and is a public/private partnership. Of the total membership, six are members representing business interests and 17 are from the membership of MAG. The MAG members include 13 representatives from a geographic cross-section of MAG cities and towns, as well as one representative each from the Citizens Transportation Oversight Committee, the ADOT State Transportation Board, the County Board of Supervisors and the Native American Indian Communities in the County. The business representatives are from businesses with region-wide interest, including one representing transit interests and a representative from the freight industry. Three of the business representatives are appointed by the Speaker of the Arizona House of Representatives and the other three are appointed by the President of the Arizona State Senate.

Arizona Department of Transportation

The primary role of the Arizona Department of Transportation (ADOT) is to provide a transportation system that meets the needs of the citizens of Arizona. The transportation system includes the State Highway System, which is designed to provide safe and efficient highway travel around the State. The Governor of Arizona appoints the Director of ADOT. The MAG Regional Freeway/Highway Program is part of the State Highway System, and is the responsibility of ADOT. However, ADOT is not responsible for highways, streets, or roads that are not part of the State Highway System, which are owned and maintained by counties, or cities and towns in Arizona.

ADOT is responsible for the overall management of the Regional Freeway/Highway Program. This includes all design, engineering, right-of-way acquisition, and construction and maintenance activities. ADOT develops and maintains the Freeway/Highway Life Cycle Program, making projections of available revenues and developing financing strategies to fund projects.

ADOT also has a role for the arterial streets component of the MAG RTP. Although MAG is responsible for the development of the Arterial Life Cycle Program, in accordance with ARS 28-6303.D.2, ADOT maintains the arterial street fund and issues bonds on behalf of the MAG Arterial Life Cycle Program.

State Transportation Board

The State Transportation Board has statutory authority over the State Highway System. The State Transportation Board also sets priorities for the State Highway System (except the MAG Regional Freeway/Highway Program), establishes a five-year construction program for individual airport and highway projects, awards construction contracts, issues bonds and sets policy. The Board consists of seven members appointed by the Governor representing six geographic regions of the State. Two members are appointed from Maricopa County. Each member serves a six-year term.

Each year, the Board approves the ADOT Five-Year Highway Construction Program for statewide projects and the Life Cycle Program for the MAG Freeway/Highway System. The Life Cycle Program incorporates the priorities set by the MAG Regional Council. ADOT and MAG cooperatively develop the program for the MAG Region. The State Transportation Board cannot approve projects within the MAG Region that are not consistent with the MAG RTP and the MAG TIP. This limitation provides for the participation of local governments in project selection and to ensure conformity with air quality standards.

The State Transportation Board adopts policies that affect the MAG Regional Freeway/Highway Program. The Board has the authority to issue bonds supported by both the Regional Area Road Fund and the Highway User Revenue Fund, and issue other forms of debt. Issuance of these bonds allows for significant acceleration of the MAG Regional Freeway/Highway Program, opposed to what would be possible on a “pay-as-you-go” basis.

Regional Public Transportation Authority/Valley Metro

The Regional Public Transportation Authority (RPTA)/Valley Metro is a political subdivision of the State of Arizona, and is overseen by a board of elected officials. Membership is open to all municipalities in Maricopa County and to the county government. Currently, the 18 participating communities are Avondale, Chandler, El Mirage, Fountain Hills, Gilbert, Glendale, Goodyear, Guadalupe, Litchfield Park, Mesa, Paradise Valley, Peoria, Phoenix, Scottsdale, Sun City, Surprise, Tempe, and Tolleson. In 1993, the RPTA Board adopted Valley Metro as the identity for the regional transit system. The RPTA Board cannot approve projects and programs within the MAG Region that are not consistent with the MAG RTP and the MAG TIP.

The primary goal of RPTA/Valley Metro is to ensure that a viable public transportation system is provided for regional mobility, and to ease the traffic congestion and improve air quality. The RPTA is responsible for distributing public information for transit, for the management and operation of

regional bus and dial-a-ride services, the Regional Ridesharing program, a regional vanpool program, and elements of the countywide Trip Reduction Program and Clean Air Campaign. The RPTA is also responsible for maintaining the Transit Life Cycle Program.

In November of 2004, the passage of Proposition 400 increased the amount of funding for public transit from the current amount of approximately two percent of total half-cent sales tax revenues (\$5 million annually inflated), to a figure of over 33 percent, which began on January 1, 2006. Over the 20-year life of the half-cent sales tax as approved by Proposition 400, it is anticipated that over \$4.7 billion will be raised for public transit projects. These monies will be deposited in the Public Transportation Fund (PTF), which was created as part of the Proposition 400 legislation. The RPTA is charged with the responsibility of administering monies in the PTF for use on transit projects, including light rail transit projects, as identified in the MAG RTP. The RPTA Board must separately account for monies allocated to: 1) light rail transit, 2) capital costs for other transit, and 3) operation and maintenance costs for other transit. In addition to Proposition 400 funding, the RPTA will utilize major blocks of Federal transit funding for capital expenditures on transit in the region.

Valley Metro Rail

Valley Metro Rail is a non-profit, public corporation overseeing the design, construction, and operation of the light rail starter segment, as well as extensions to the project. The four cities currently participating in the light rail system – Phoenix, Tempe, Mesa and Glendale – are the members of Valley Metro Rail. The Valley Metro Rail Board of Directors is composed of the mayors of each of the participating cities.

The Valley Metro Rail Board of Directors establishes procedures for the administration and oversight of the design, construction and operation of light rail, as well as receives and disburses funds and grants from Federal, State, local and other funding sources. The Valley Metro Rail Board has the authority to enter into contracts for light rail design and construction, hire or contract for staff for the Light Rail Project, and undertake extensions to the system. The Valley Metro Rail Board cannot approve projects and programs within the MAG Region that are not consistent with the MAG RTP and the MAG TIP.

Citizens Transportation Oversight Committee

ARS 28-6356 provides for the establishment of a Citizens Transportation Oversight Committee (CTOC) in a county that has a transportation sales tax such as Maricopa County. CTOC consists of seven persons - one member appointed from each of the five supervisory districts in Maricopa County. The Governor appoints an at-large member and the Chair of the committee. Members serve three-year terms. ADOT designates a special assistant to provide staff support to the CTOC, and to assist in coordination among CTOC, ADOT, MAG, RPTA and local jurisdictions.

The CTOC plays a number of important roles in the regional transportation process. It reviews and advises MAG, RPTA and the State Transportation Board on matters relating to the RTP, the TIP, the ADOT 5-year Construction Program and the life cycle management programs. This includes making recommendations on any proposed major amendment of the RTP, on criteria for establishing priorities, and on the five-year performance audit of the RTP. The CTOC is charged

with annually contracting for a financial compliance audit of expenditures from the Regional Area Road Fund and the Public Transportation Fund, as well as setting parameters for periodic performance audits of the administration of those funds (life cycle programs).

The CTOC also holds public hearings and issues reports as appropriate, receives written complaints from citizens regarding adverse impacts of transportation projects funded in the RTP, receives complaints from citizens relating to regional planning agency responsibilities, and makes recommendations regarding transportation projects and public transportation systems funded in the RTP.

Regional Transportation Plan Partners

Key agencies in the region have formed an ad hoc group, the “RTP Partners,” aimed at coordinating the effort to implement Proposition 400 and the projects in the MAG RTP. The agencies include the Maricopa Association of Governments; the Arizona Department of Transportation; the Regional Public Transportation Authority; and Valley Metro Rail. The RTP Partners have already held a number of meetings and anticipate a more frequent meeting schedule, as activity increases with the start of the half-cent sales tax extension in 2006.

In addition to ensuring overall coordination of planning and implementation activities, specific goals of the group are to: prepare uniform revenue forecasts; to establish consistent life cycle programming procedures; to maintain an integrated approach to the long-term development of transportation corridors and services; and to provide clear, concise information to the public and receive their input on issues connected with the implementation of Proposition 400.

SAFETEA-LU

On August 10, 2005, the President signed the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). Along with identifying Federal funding for a range of transportation programs and other transportation related regulations, SAFETEA-LU updated requirements for metropolitan transportation planning. In order to reflect SAFETEA-LU in their administrative regulations, the Federal Highway Administration and Federal Transit Administration jointly issued proposed rulemaking for “23 CFR Part 450” dated June 9, 2006, which, in part, addresses the development of metropolitan transportation plans. In order to develop the 2007 RTP Update in a timely manner, this proposed rule was used to guide the planning process. A final rule for “23 CFR Part 450” was issued on February 14, 2007. The final rule is substantially the same as the proposed rule, and the 2007 RTP Update fully complies with the requirements of the final rule. The manner in which the MAG RTP responds to key elements of the final regulations is discussed below.

Federal Planning Factors

In 23 CFR Part 450.306, it identifies a series of planning factors that need to be considered in the metropolitan transportation planning process. The approach of the RTP to these factors is described below.

- **Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.** The RTP addresses this issue directly. Two of the major objectives identified for the Plan are as follows: 1) To maintain an acceptable Level Of Service (LOS) on transportation and mobility systems serving the region, taking into account performance by mode and facility type; and 2) To provide residents of the region with access to jobs, shopping, educational, cultural and recreational opportunities, and to provide employers with reasonable access to the workforce in the region. In developing the RTP, the effectiveness of transportation system performance was analyzed under alternative transportation investment choices. This analysis included system efficiency factors such as travel times, peak period delay, speeds, and LOS. The RTP addresses economic vitality through projects and programs to reduce congestion and increase system efficiency increase transportation facility capacity manage system operations and to reduce congestion by the inclusion of capacity and operations improvements.
- **Increase the safety of the transportation system for motorized and non-motorized users.** Safety is a critical element of each mode of transportation and the RTP specifically addresses safety issues in a separate chapter. Safety has been identified as a major focus, with one of the Plan objectives being: provide a safe and secure environment for the traveling public, addressing roadway hazards, pedestrian and bicycle safety, and transit security. The RTP process includes a safety planning program that enables safety issues to be addressed as part of the regional transportation planning process. MAG has a standing committee for safety planning and pursues both safety planning and implementation issues. This includes efforts such as developing safety information management systems and conducting safety workshops.
- **Increase the ability of the transportation system to support security and to safeguard the personal security of all motorized and non-motorized users.** Transportation security is covered specifically in a separate chapter of the RTP. To address this issue, an inventory of ongoing security activities and programs in the MAG Region was conducted and documented. This information was assessed to gain insights into the type of role the metropolitan organization might play to advance and facilitate effective application of security measures to transportation systems in the region. MAG already participates in the area of security through its role in the implementation of 9-1-1 and the Community Emergency Notification System.
- **Increase the accessibility and mobility of people and freight.** The RTP identifies three objectives related to mobility options, which are as follows: 1) To maintain a reasonable and reliable travel time for moving freight into, through and within the region, as well as provide high-quality access between intercity freight transportation corridors and freight terminal locations, including intermodal facilities for air, rail and truck cargo; 2) Provide the people of the region with transportation modal options necessary to carry out their essential daily activities and support equitable access to the region's opportunities; and 3) Address the needs of the elderly and other population groups that may have special transportation needs, such as non-drivers or those with disabilities. The RTP increases accessibility and mobility options by calling for significant investments in freeways, highways, streets, bus service, high capacity transit facilities, bicycle and pedestrian facilities, and airports. The Plan also provides the planning foundations for freight and special needs transportation.

- **Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.** Early in the RTP process, the need to sustain the environment was recognized as a major factor. RTP objectives related to this issue include the following: 1) To identify and encourage implementation of mitigation measures that will reduce noise, and visual and traffic impacts of transportation projects on existing neighborhoods; 2) Encourage programs and land use planning that advance efficient trip-making patterns in the region; and 3) Make transportation decisions that are compatible with air quality conformity and water quality standards, the sustainable preservation of key regional ecosystems, and desired lifestyles.

The RTP includes a discussion of types of potential environmental mitigation activities that may have the greatest potential to address the environmental functions affected by the Plan. Air quality issues are extensively addressed in the separate conformity analysis document prepared for the RTP. Reductions in transportation energy use in the region are closely tied to air quality goals. In addition, the RTP identifies regional funding for environmental concerns such as noise mitigation and litter pickup.

The need to promote consistency between transportation improvements and State and local planned growth and economic development patterns was addressed in a number of ways in the planning process. As part of the development of the 2007 Update, MAG consulted with State and local agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation. Also, the process to develop long-range population and employment forecasts, which provides the foundation for the transportation planning effort, starts with local and State land use plans and forecasts.

- **Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.** One of the major objectives of the RTP is to maintain a reasonable and reliable travel time for moving freight into, through, and within the region; as well as to provide high-quality access between intercity freight transportation corridors and freight terminal locations, including intermodal facilities for air, rail and truck cargo. The broad range of multi-modal improvements in the RTP will facilitate the movement of people and goods, as well as enhance system connectivity throughout the region. The inclusion of chapters on airports and freight in the RTP helps recognize the importance of developing an integrated approach to planning for passenger and freight movement. In addition, MAG employs a multi-modal, integrated process for forecasting and analyzing travel demand.
- **Promote efficient system management and operation.** Minimizing congestion and resulting delays is a central theme in all modal elements of the RTP. As one of its objectives, the RTP calls for maintaining an acceptable and reliable level of service on transportation and mobility systems serving the region, taking into account performance by mode and facility type. The analysis of traffic congestion is addressed throughout the MAG planning process, including use of the MAG transportation models to analyze future traffic demand and levels of service. Projects funded from regional sources are rated by an air quality rating system and a congestion management rating system. System operations and management

are addressed specifically in the RTP, including chapters that identify strategies and describe ongoing planning efforts in the areas of: Intelligent Transportation System Planning, Demand Management, Congestion Management Process, Performance Monitoring and Assessment, Transportation Safety, and Transportation Security.

- **Emphasize the preservation of the existing transportation system.** The RTP process recognizes the high importance of maintaining the regional transportation infrastructure. The RTP identifies maintenance as a critical Plan element, with the following objective: To provide for the continuing preservation and maintenance needs of transportation facilities and services in the region, eliminating maintenance backlogs. The high level of importance placed on preservation is reflected by the allocation of major blocks of regional-level funding in the RTP to improving the existing roadway network and conducting various aspects of the maintenance function. In addition, the RTP discusses ongoing pavement preservation efforts at the State and local levels.

Development and Content of the Metropolitan Transportation Plan

In 23 CFR Part 450.322, specific elements of the metropolitan transportation planning process and transportation plan are identified. These elements are summarized below and the approach of the RTP to these subject areas is described.

- **The transportation planning process shall address at least a 20-year planning horizon.** The 2007 Update covers the period through FY 2028, which will represent at least a 20-year period from the effective date of the Plan. The effective date of the Plan is defined in 23 CFR Part 450.322 as the date of a conformity determination by the Federal Highway Administration and the Federal Transit Administration. This determination has typically been received within two months of the approval of the Plan by MAG, which is anticipated to occur in July 2007, resulting in a planning horizon of well over 20 years.
- **The transportation plan shall include both long-range and short-range strategies that lead to an integrated multimodal transportation system.** The RTP contains both long and short range concepts and covers the full range of transportation modes. For example, the RTP contains a project-specific listing of improvements for the entire period through FY 2028 for all the major transportation modes. This is used as a blueprint to develop the MAG five-year transportation improvement program, as well as a guide for the scheduling of longer range facility development studies, such as corridor, area and design concept reports. In addition to covering the major transportation modes, the RTP addresses bicycle/pedestrian facilities, airports, and special needs transportation, as well as transportation system operations and demand management.
- **The Metropolitan Planning Organization shall review and update the transportation plan at least every four years in nonattainment areas.** The most recent update of the RTP was conducted and approved by MAG in July 2006 and received a finding of air quality conformity from the Federal Highway Administration and the Federal Transit Administration in August 2006.

- **The Metropolitan Planning Organization shall coordinate the development of the regional transportation plan with the Transportation Control Measures (TCMs) in the State Implementation Plan (SIP).** As the regional air quality planning agency, MAG maintains an extensive air quality planning process through which TCMs are identified, selected and implemented as part of the SIP. The MAG regional air quality plans are developed through a cooperative effort among the Arizona Department of Environmental Quality, Arizona Department of Transportation, Maricopa County and MAG. Collectively, these agencies generate information on emissions inventories, air quality modeling, and the description, assumptions and cost effectiveness of TCMs.
- **The Metropolitan Planning Organization shall base updates on the latest available estimates for population, land use, travel, employment, congestion, and economic activity.** The 2007 Update is based on the most recent available set of population and employment projections for the region, which was accepted by the MAG Regional Council in July 2003. These projections made use of the latest land use data available at the time of their preparation. The MAG travel modeling process is also based on the latest available data collection efforts, which were concluded in 2002, including a household travel survey, traffic count study, and regional congestion analysis. The review of this data is accomplished through a multi-agency review process.
- **The transportation plan shall include projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan.** The MAG transportation planning process includes an extensive travel modeling component that provides estimates of future vehicular travel, associated with the demand for person and goods movement in the region. This covers travel by all the major modes including autos, trucks, bus transit, and light rail transit for the full period covered by the RTP. The travel modeling process is based on the most recently available population and employment forecasts, which are consistent with the horizon year of the Plan. A separate chapter on performance monitoring and assessment, which addresses current and future travel demand, is included in the RTP.
- **The transportation plan shall include existing and proposed transportation facilities that should function as an integrated system.** The RTP identifies the network of existing and planned transportation facilities that function as an integrated system to serve the travel demand of the region. This includes the major modal components represented by the freeway/highway system, the arterial street network, and public transit operations and facilities. In addition, other modal programs are addressed in the RTP, such as airports, bicycle and pedestrian facilities, freight, and special needs programs. The RTP depicts the location and connectivity of regional transportation networks by mode, as well as the phasing of future improvements to the transportation system. The major modal systems are inventoried and analyzed using an integrated travel demand modeling system.
- **The transportation plan shall include operational and management strategies to improve the performance of existing transportation facilities.** The RTP addresses operational and management strategies to improve transportation system performance, relieve congestion, and enhance safety and mobility through a wide range of planning

efforts. An entire section of the RTP is dedicated to system operations and management. This section includes chapters that identify strategies and describe ongoing planning efforts in the areas of: Intelligent Transportation System Planning, Demand Management, Congestion Management Process, Performance Monitoring and Assessment, Transportation Safety, and Transportation Security.

- **The transportation plan shall consider the results of the congestion management process.** The MAG transportation planning process includes significant demand management and intelligent transportation systems (ITS) elements, which are specifically addressed in the RTP. As part of this effort, MAG maintains an ITS Committee that coordinates transportation system management and operations activities in the region. In addition, periodic facility congestion and level of service surveys are conducted, providing an assessment of current congestion issues and a basis for modeling future congestion. MAG has also established an ongoing performance monitoring program, which is a key component of the congestion management process. The performance monitoring program formalizes the data collection effort and refines the process for periodic assessment of the effectiveness of congestion management strategies. Both the congestion management process and the performance monitoring program are addressed in individual chapters in the RTP.
- **The transportation plan shall include an assessment of capital investment and other strategies to preserve the existing system and provide for multimodal capacity increases.** The RTP covers capital investment strategies to preserve existing transportation infrastructure and provide for multi-modal capacity increases based on regional priorities. For the major modal components, the RTP includes detailed twenty-year programs for improvements to the existing system, as well as the development of new facilities. In addition, capital investments for other modal programs, such as airports, bicycle and pedestrian facilities, freight, and special needs programs are addressed in the RTP. The RTP process recognizes the high importance of maintaining the regional transportation infrastructure, which is reflected by the allocation of major blocks of regional-level funding in the RTP to improving the existing roadway network and conducting various aspects of the maintenance function.
- **The transportation plan shall include descriptions of all existing and proposed transportation facilities insufficient detail for conformity determinations.** As part of its regional travel demand modeling process, MAG maintains multimodal transportation networks of existing and proposed facilities that are described in sufficient detail to be utilized as input to the air quality conformity process required by 40 CFR 93 (EPA's transportation conformity rule). The scope and cost of these networks is described in the RTP, including all facilities regardless of funding source.
- **The transportation plan shall include a discussion of potential environmental mitigation activities to restore and maintain environmental functions affected by the transportation plan.** The RTP includes a discussion of types of potential environmental mitigation activities that may have the greatest potential to address the environmental functions affected by the Plan. This effort was approached by consulting with a broad range

of Federal, State, and tribal agencies that deal with wildlife, land management and regulatory matters. The transportation planning process and its future environmental implications were addressed in a series of discussions with these agencies, and concepts for potential environmental mitigation activities were identified. The primary goal of the RTP consultation effort was to gain insights regarding environmental concerns that may potentially involve future planning efforts and future Plan elements.

- **The transportation plan shall include pedestrian walkway and bicycle transportation facilities.** MAG has maintained an active role in promoting the establishment of improved travel opportunities for bicyclists and pedestrians for many years. The MAG Regional Bicycle Task Force, which was responsible for assisting in the development of the original MAG Bicycle Plan in 1992, has maintained an active role in promoting improved travel opportunities for bicyclists. In 1994, MAG formed the Pedestrian Working Group to promote increased awareness of walking as an alternative mode of travel and to improve facilities for people who walk. The RTP includes the MAG Bicycle Plan and Regional Off-Street System (ROSS) Plan. MAG has also developed a plan that identified policies to encourage walking, and suggested areas where these policies might be best implemented.
- **The transportation plan shall include transportation and transit enhancement activities.** The RTP describes the ongoing transportation enhancement program in which MAG participates. This program is administered by the ADOT and involves the development of project proposals by the councils of governments and metropolitan planning organizations around the State. The RTP discusses the MAG process for preparing and prioritizing enhancement project proposals and provides information on past and ongoing projects.
- **The transportation plan shall include a financial plan that demonstrates how the adopted transportation plan can be implemented.** The RTP provides a financial plan by mode that identifies specific funding to carry out the improvements and programs included under that transportation mode. All funding sources are considered to be reasonably available throughout the planning period, having had a long history of providing funding for the RTP. This includes sources such as the half-cent sales tax, which was originally approved in 1985 and extended in 2003; the State Highway Revenue Fund, which has been a major and continuing funding source for transportation in Arizona since 1974; Federal highway and transit funding programs, which represent a national commitment to transportation; and local government and private funding, which proceed in parallel with the residential and commercial development process. Estimates of future Federal, State and regional funds that would be available to the region were developed cooperatively by MAG, RPTA and ADOT. In addition, Arizona State Statutes require the major transportation implementing agencies in the MAG Region to develop and maintain life cycle programs that ensure transportation program costs can be met by future revenues. These life cycle programs have also been made a part of the RTP.
- **The metropolitan planning organization shall consult with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation regarding development of the transportation plan.** As part of the development of the 2007 Update of the RTP, MAG consulted with

State and local agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation. An important part of this process included the identification of key databases, conservation maps, inventories of natural or historic resources, and other information sources to utilize in the regional transportation planning process. As noted under mitigation activities, since previously adopted projects in the RTP undergo extensive environmental and resource assessment by the implementing agencies, the primary goal of the consultation effort was to gain insights regarding concerns that may potentially involve future planning efforts and future Plan elements.

- **The transportation plan shall include a safety element, as well as disaster preparedness plans that support homeland security and personal security of users.** The RTP addresses safety in a separate chapter the safety chapter of the RTP addresses the MAG safety planning program which enables safety issues to be addressed as part of the regional transportation planning process. MAG has a standing committee for safety planning, has developed a safety information management system, and conducts safety workshops. The RTP also has a separate chapter on security. To address this issue, an inventory of ongoing security activities and programs in the MAG Region was conducted and documented. This information was assessed to gain insights into the type of role the metropolitan organization might play to advance and facilitate effective application of security measures to transportation systems in the region.
- **The Metropolitan Planning Organization shall provide interested parties with a reasonable opportunity to comment on the transportation plan.** Throughout the RTP process, interested parties are provided extensive opportunity to comment on any and all aspects of the RTP, as well as potential future additions to the transportation plan. This is accomplished through a specific participation plan that was closely adhered to and was structured to maximize input opportunities for all interested individuals and groups. The development of the participation plan, itself, also included extensive consultation with interested citizens, citizen interest groups, public agencies, and private transportation providers. In addition, MAG recognizes the significance of transportation to all residents of the metropolitan area and the importance of Title VI/Environmental considerations in the transportation planning process. As a result, an environmental justice analysis of the RTP has been prepared.
- **The metropolitan transportation plan shall be published or otherwise made readily available for public review.** The RTP is made available for public review through both printed and electronic media. In addition, a variety of methods are employed to promote public education and obtain comments on the RTP, including outreach efforts, accessible meetings and workshops, graphical visualization techniques, and “World Wide Web” postings. The “World Wide Web” is employed extensively as a means of providing the public with broad access to planning information for review and input. The Web is employed, not only for the posting of the RTP and other planning reports, but also is utilized for the dissemination of preliminary planning information, progress reports, and meeting and workshop notices.

- **The Metropolitan Planning Organization shall not be required to select any project from the illustrative list of additional projects included in the financial plan.** The financial plan in the 2007 Update does not contain any illustrative projects.
- **The Metropolitan Planning Organization must make a conformity determination on any updated or amended transportation plan in accordance with transportation conformity regulations.** MAG conducts appropriate air quality conformity analyses of the RTP to comply with air quality conformity regulations. Any approvals of updates or amendments to the by MAG Plan first undergo this conformity analysis and are contingent upon a finding of conformity by the Federal Highway Administration and the Federal Transit Administration.

Arizona House Bill 2292

Arizona House Bill 2292, which was passed in the Spring 2003 Session of the Arizona State Legislature, establishes guidelines for the MAG RTP, such as the impact of growth on transportation systems and the use of a performance-based planning approach. It identifies key features required in the final Plan, including a twenty-year planning horizon, allocation of funds between highways and transit, and priorities for expenditures. The response of the RTP to these requirements is described below.

House Bill 2292 sets forth the factors to be considered during the development of the RTP. This legislation applies federally identified planning concepts to state level issues, and addresses a range of planning considerations. Among other issues, House Bill 2292 calls for the Plan to:

- **Cover a twenty-year term.** The RTP covers the period through FY 2028. In addition, the Plan addresses some issues that extend beyond this planning period.
- **Be comprehensive, performance based, multimodal and coordinated.** The RTP is comprehensive in scope, taking into account future land uses and growth throughout the region. It is multi-modal, including freeways, highways, streets, bus service, high capacity transit, and other transit services, as well as modes such as airports, bicycles and pedestrians. The approach used in developing the RTP is distinguished by the use of performance-based planning and the application of performance measures in the evaluation of alternatives. The methodology includes six major components: 1) Goals and Objectives, 2) Needs Assessment, 3) Evaluation Methodologies, 4) Alternatives Evaluation, 5) Alternatives Refinement, and 6) Phasing and Funding. The RTP closely coordinates the functions of each mode through regional modeling, construction phasing, and financial planning.
- **Consider growth and transportation system impacts in contiguous counties, cities, towns and Indian Communities.** The transportation analysis area used to develop the RTP covers the Indian Communities, and the portions of contiguous counties that are forecasted to develop during the planning period. This means that the growth projected for these areas and its impacts on transportation demand are taken into account in the planning process.

- **Include a transportation corridor prioritization and construction schedule.** The RTP includes modal life cycle project program schedules, identifying when projects are programmed for construction during the planning period. This schedule is based on a number of factors, including traffic volumes and level of service, project readiness and cash flow availability.
- **Include an allocation of revenues between the regional area road fund and the public transportation fund.** The RTP includes a financial plan element that allocates funding among and across modes by funding source.
- **Achieve a balance between project costs and available revenues.** The estimated cost of the projects in the RTP equals the total revenues projected for the planning period. The planning process includes the annual review of modal life cycle programs to provide the opportunity to adjust programs, as appropriate, to maintain a cost/revenue balance.

Costs and Revenue Estimates

As part of the preparation of the RTP, overall revenue and costs estimates have been prepared. It is important to note that these estimates are subject to change, as detailed engineering studies are completed and economic conditions are revealed over time. Periodic adjustments and updating of the Plan will be needed to respond to changing conditions and new information.

Economic conditions will be monitored continuously to assess their long-term effects on the implementation of the RTP. In this regard, Proposition 400 legislation recognizes that it will be necessary to respond to changing conditions and new information during the course of implementing a long-range plan. Therefore, the legislation calls for five-year performance audits of the RTP; specifies consultation steps for any major amendments to the RTP; and requires life cycle programs for highways, streets, and transit to ensure that the cost of projects programmed for construction can be completed within available revenues.

Recent revenue trends have been mixed. In FY 2006, the growth in collections for the half-cent sales tax exceeded past trends. However, revenue growth rates during the first six months of FY 2007 for half-cent tax have slowed compared to FY 2006. This is primarily due to weaker than anticipated retail sales in Maricopa County.

From a cost perspective, during the past several years, there have been major cost increases in right-of-way, construction materials, and overall project bid levels, due to pressures in the local real estate market, national competition for construction contracting, and international demand in the commodity markets. More recently, construction material costs have appeared to stabilize from the rapid increases that have been seen over the last two years. Although the increases have moderated, there has not been a significant decline for key commodities to previous levels.

For the freeway/highway program, FY 2007 bid amounts on several construction projects have not demonstrated a clear cost trend (some reflect higher costs than estimated while others reflect lower costs). Overall, bid amounts have come close to ADOT's estimates, and more bids have been received compared to FY 2006. However, based on numerous studies currently underway, construction and right-of-way costs for two new freeways (South Mountain and SR303L) and major

corridor improvement projects (I-10 and I-17) reflect significantly higher costs than initial estimates, which were developed in 2003. These higher estimates are due to increased costs for construction materials and substantial increases in real estate values, which result in higher right-of-way costs. Also, scope refinements identified during design studies have led to certain cost increases. As engineering studies progress, improved information will be available to determine the full magnitude of these factors on project costs. If these cost increases continue long term, they will have a substantial impact on the program and the ability to deliver the freeway/highway program identified in the RTP within the originally anticipated schedule.

The arterial street program has encountered cost increases similar to those experienced in the freeway/highway program. Concerns are being raised regarding the ability of local jurisdictions to provide the required match for the full program of regionally funded arterial projects, and, as a result, whether all the projects originally identified can be completed within the planned timeframe. Similarly, the completion of transit capital facilities not under construction face the same demands of recent cost increases for right-of-way and construction materials that weigh on the freeway and arterial programs. Also, given recent trends of escalating wages and fuel prices, pressure will increase to balance transit operating costs with available revenues.

CHAPTER TWO

GOALS, OBJECTIVES AND PRIORITY CRITERIA

Regional goals and objectives provide the planning process with a basis for identifying options, evaluating alternatives and making decisions on future transportation investments. The MAG Transportation Policy Committee has identified a total of four goals and 15 objectives, which were approved on February 19, 2003. In addition, Arizona Revised Statute 28-6354.B directs MAG to develop criteria to establish the priority of corridors, corridor segments, and other transportation projects. As part of the regional transportation planning process, MAG applied various priority criteria for the development of the Regional Transportation Plan (RTP).

Goals and Objectives

A goal is a general statement of purpose that represents a long-term desired end to a specific state of affairs. It is generally measurable by qualitative means. By identifying broad goals that are both visionary and practical, and which respond to the values of the region, the focus of the planning process can be more readily communicated to the public. The goals, in turn, can be defined in greater detail by specifying multiple objectives for each goal.

An objective is very similar to a goal, as it represents a desired end to a specific state of affairs. However, an objective is an intermediate result that must be realized to reach a goal. The definition of an objective is usually more focused than that of a goal and is typically more subject to being measured. Objectives can be further assessed through performance measures that are identified for each objective.

Certain goals and objectives are related to the way in which the regional transportation system is performing overall. Others may be used to evaluate individual components of the overall transportation system or to evaluate proposed projects. They can also serve as the basis to monitor how the transportation system performs as the RTP is implemented. In addition, goals and objectives relate to the planning process, and the importance of accountability during the development and implementation of the plan. Individual goals with their supporting objectives are listed below.

Goal 1: System Preservation and Safety

Transportation infrastructure that is properly maintained and safe, preserving past investments for the future.

- **Objective 1A:** Provide for the continuing preservation and maintenance needs of transportation facilities and services in the region, eliminating maintenance backlogs.
- **Objective 1B:** Provide a safe and secure environment for the traveling public, addressing roadway hazards, pedestrian and bicycle safety, and transit security.

Goal 2: Access and Mobility

Transportation systems and services that provide accessibility, mobility and modal choices for residents, businesses and the economic development of the region.

- **Objective 2A:** Maintain an acceptable and reliable level of service on transportation and mobility systems serving the region, taking into account performance by mode and facility type.
- **Objective 2B:** Provide residents of the region with access to jobs, shopping, educational, cultural, and recreational opportunities and provide employers with reasonable access to the workforce in the region.
- **Objective 2C:** Maintain a reasonable and reliable travel time for moving freight into, through and within the region, as well as provide high-quality access between intercity freight transportation corridors and freight terminal locations, including intermodal facilities for air, rail and truck cargo.
- **Objective 2D:** Provide the people of the region with transportation modal options necessary to carry out their essential daily activities and support equitable access to the region's opportunities.
- **Objective 2E:** Address the needs of the elderly and other population groups that may have special transportation needs, such as non-drivers or those with disabilities.

Goal 3: Sustaining the Environment

Transportation improvements that help sustain our environment and quality of life.

- **Objective 3A:** Identify and encourage implementation of mitigation measures that will reduce noise, visual and traffic impacts of transportation projects on existing neighborhoods.
- **Objective 3B:** Encourage programs and land use planning that advance efficient trip-making patterns in the region.
- **Objective 3C:** Make transportation decisions that are compatible with air quality conformity and water quality standards, the sustainable preservation of key regional ecosystems and desired lifestyles.

Goal 4: Accountability and Planning

Transportation decisions that result in effective and efficient use of public resources and strong public support.

- **Objective 4A:** Make transportation investment decisions that use public resources effectively and efficiently, using performance-based planning.
- **Objective 4B:** Establish revenue sources and mechanisms that provide consistent funding for regional transportation and mobility needs.
- **Objective 4C:** Develop a regionally balanced plan that provides geographic equity in the distribution of investments.
- **Objective 4D:** Recognize previously authorized corridors that are currently in the adopted MAG Long-Range Transportation Plan; i.e., Loop 303 and the South Mountain Corridor.

- **Objective 4E:** Achieve broad public support for needed investments in transportation infrastructure and resources for continuing operations of transportation and mobility services.

Priority Criteria

Arizona Revised Statute 28-6354.B directs MAG to develop criteria to establish the priority of corridors, corridor segments, and other transportation projects. These criteria include public and private funding participation; the consideration of social and community impacts; the establishment of a complete transportation system for the region; the construction of projects to serve regional transportation needs; the construction of segments to provide connectivity on the regional system; and other relevant criteria for regional transportation.

As part of the regional transportation planning process, MAG has applied these kinds of criteria, both for the development and the implementation of the Regional Transportation Plan (RTP). The RTP was developed through a performance-base process that evaluated alternatives relative to a range of performance measures. Also, specific criteria were considered as part of the process to schedule the implementation of transportation projects throughout the duration of the planning period. The discussion below describes how the criteria applied in the RTP planning process correspond to the categories included in ARS 28-6354.B.

Extent of Local Public and Private Funding Participation

A higher level of local public and private funding participation in the RTP benefits the region by leveraging regional revenues and helping ensure local government commitment to the success of the regional program. The extent of local public and private funding participation is addressed in a number of ways in the MAG transportation planning process.

- **Project Matching Requirements** - In developing funding allocations among the various RTP components and project types, local matching requirements have been established. The local matching requirements in the RTP are:
 - 30 percent major street projects, including ITS elements.
 - 30 percent bicycle and pedestrian projects.
 - For air quality and transit projects involving Federal funds, minimum Federal match requirements were assumed. Depending on the specific project funding mix, this match may be provided from regional revenue sources.
- **Private Funding Participation** - As part of the policies and procedures developed for the Arterial Street Life Cycle Program, private funding participation is recognized as applicable local match for half-cent funds for street and intersections projects. This policy helps free local monies that may then be applied to additional transportation improvements.
- **Local Government Incentives** - In the Arterial Street Life Cycle Program, incentives to make efficient use of regional funds have been established by ensuring that project savings by local governments may be applied to new projects in the jurisdiction that achieved those savings.

Social and Community Impacts

Regional transportation improvements can have both beneficial and negative social and community impacts. It is important to conduct a thorough assessment of these impacts, to ensure that they are taken into account in the decision-making process. The MAG planning effort assesses social and community impacts at each key stage of the transportation planning and programming process. In addition, it should be noted that similar efforts are carried out by the agencies implementing specific transportation improvement projects.

- **Public Participation and Community Outreach** - An aggressive citizen participation and outreach program is conducted to obtain public views on the potential community and social impacts of transportation improvements. In particular, input is sought regarding the possible impacts of specific transportation alternatives on the community's social values and physical structure.
- **Social Impact Assessment** - The social impact of transportation options is evaluated as part of the Title VI/Environmental Justice assessment. In this assessment, potential transportation impacts are evaluated for key communities of concern, including minority populations, low-income populations, aged populations, mobility disability populations, and female head of household populations. In addition, community goals are taken into account by basing future travel demand estimates, on local land use plans.
- **Corridor and Community Impact Assessment** - Corridor-level analyses are conducted, which assess the possible social and community impacts of alternative facility alignments based on neighborhood factors such as noise, air quality and land use. Community impacts of transportation facilities are further analyzed by assessing air quality effects through the emissions analysis of plan alternatives, as well as conducting a Federally required air quality conformity analysis of the RTP. In addition, the process for annually updating the Regional Transportation Improvement Program includes project air quality scores, which reflect the potential community impacts of the projects.

Establishment of a Complete Transportation System for the Region

The RTP calls for major investments in all elements of the regional transportation system over the next several decades. It is critical that these expenditures result in a complete and integrated transportation network for the region. The MAG planning process responds directly to this need by conducting transportation planning at the system level, giving priority to segments that can lead to a complete transportation system as quickly as possible, and maintaining a life cycle programming process for all the major modes.

- **System Level Planning Approach** - The regional planning effort is conducted at the system level, taking into account all transportation modes in all parts of the MAG geographic area. This systems level approach is applied in identifying and analyzing alternatives, as well as specifying the final RTP. In this way, the complete transportation needs of the region, as a whole, are identified and addressed in the planning process.

- **Project Development Process and Project Readiness** - The implementation of regional transportation projects requires a complex development process. This process involves extensive corridor assessments, environmental studies, and engineering concept analyses. This is followed by right-of-way acquisition and final design work, before actual construction may begin. For a variety of reasons, certain projects may progress through this process more rapidly than others. By moving forward, where possible, on those projects with the highest level of readiness for construction, important transportation improvements can be delivered as quickly as possible.
- **Progress on Multiple Projects** - Major needs for transportation improvements exist throughout the MAG Region. The scheduling of projects is aimed at proceeding with improvements to the transportation network throughout the planning period in all areas of the region. This will lead toward a complete and functioning regional transportation system that benefits all parts of the MAG Region.
- **Revenues, Expenditures and Life Cycle Programming** - Cash flow patterns from revenue sources limit the amount of work that can be accomplished within a given period of time. Project expenditures need to be scheduled to accommodate these cash flows. Life cycle programs have been established that take these conditions into account and implement the projects in the RTP for the major transportation modes: freeways/highways, arterial streets, and transit. The life cycle programs provide a budget process that ensures that the estimated cost of the program of improvements does not exceed the total amount of revenues available. This ensures that a complete transportation system for the region will be developed within available revenues.

As part of the life cycle programming process, consideration is given to bonding a portion of cash flows to implement projects that provide critical connections earlier than might otherwise be possible. This has to be weighed against the reduction in total revenues available for constructing projects, which results from interest costs.

Construction of Projects to Serve Regional Transportation Needs

The resources to implement the RTP are drawn from regional revenue sources and should address regional transportation needs. Transportation projects that serve broad regional needs should have a higher priority than those that primarily only serve a local area. At the same time, the nature of regional transportation needs varies across the MAG Region and the same type of transportation solution does not apply everywhere in the region. Enhancing the arterial network may represent the most pressing regional need in one part of the region, whereas adding new freeway corridors may be the key need in another; and expanding transit capacity may represent the best approach in yet another area. The process to develop the RTP recognized that this was the nature of regional transportation needs in the MAG Region. As a result, the RTP is structured to respond to different types of needs in different parts of the MAG Region.

Although the modal emphasis of the transportation improvements identified in the RTP varies from area to area, the effects of these improvements can be assessed using common measures of system performance and regional mobility. The measures that were utilized for this purpose are described below. These criteria were applied in the development of the RTP to evaluate alternatives and

establish implementation priorities. They can also be applied in the future to evaluate potential adjustments to the priority of corridors, corridor segments, and other transportation projects and services.

- **Facility/Service Performance Measures** - Facility performance measures focus on the amount of travel on specific facilities, the usage of transportation services, the degree of congestion, and other indicators of the level of service as provided:
 - Accident rate per million miles of passenger travel.
 - Travel time between selected origins and destinations.
 - Peak period delay by facility type and geographic location.
 - Peak hour speed by facility type and geographic location.
 - Number of major intersections at level of service “E” or worse.
 - Miles of freeways with level of service “E” or worse during peak period.
 - Average Daily Traffic on freeways/highways and arterials
 - Total transit ridership by route and transit mode.
 - Cost effectiveness: trips served per dollar invested.

- **Mobility Measures** - Mobility measures focus on the availability of transportation facilities and services, as well as the range of service options as provided:
 - Percentage of persons within 30 minutes travel time of employment by mode.
 - Jobs and housing within one-quarter mile distance of transit service.
 - Percentage of workforce that can reach their workplace by transit within one hour with no more than one transfer.
 - Per Capita Vehicle Miles of Travel (VMT) by facility type and mode.
 - Households within one-quarter mile of transit.
 - Transit share of travel (by transit sub-mode).
 - Households within five miles of park-and-ride lots or major transit centers

Construction of Segments that Provide Connectivity with other Elements of the Regional Transportation System

The phasing of the development of the transportation network should be done in a logical sequence, so that maximum possible system continuity, connectivity and efficiency are maintained. In the RTP, Appropriately located transportation facilities around the region enhance the general mobility throughout the region. To the extent possible, facility construction and transportation service should be sequenced to result in a continuous and coherent network and to avoid gaps and isolated segments, bottlenecks and dead-end routes. Segments that allow for the connection of existing portions of the transportation system should be given a higher priority than segments that do not provide connectivity.

Other relevant criteria developed by the regional planning agency

As part of the RTP, a series of objectives for the regional transportation network were identified. Two key objectives were to achieve broad public support for the needed investments, and to

develop a regionally balanced plan that provides geographic equity in the distribution of investments. Specific criteria related to these objectives are:

- Transportation decisions that result in effective and efficient use of public resources and strong public support.
- Geographic distribution of transportation investments.
- Inclusion of committed corridors.

CHAPTER THREE

REGIONAL DEVELOPMENT OVERVIEW

The MAG Region is geographically situated in the south-central region of the State of Arizona, and encompasses an area of 9,223 square miles. The MAG Region contains 25 incorporated cities and towns, five Native American Indian Communities and a large area of unincorporated land. The region is located in the Sonoran Desert with elevations generally ranging from 500 to 2,500 feet above sea level. In 2004, Maricopa County contained approximately 60 percent of the population in Arizona, as well as eight of the nine cities in Arizona with populations greater than 100,000 people.

According to data compiled by MAG in 2000, approximately 29 percent of all county lands were under private ownership; 28 percent of lands were under the direct ownership of the Bureau of Land Management; 14 percent of lands were under the jurisdiction of the U.S. Military; 11 percent of lands were held within State trust; 11 percent of lands were under the direct ownership of the U.S. Forest Service; 5 percent of land was comprised of Indian Communities; and the remaining 2 percent of lands in the county were classified as “other” public lands.

2005 Special Census Survey

In September 2005, the U.S. Census Bureau conducted a Special Survey of Maricopa County on behalf of the Maricopa Association of Governments (MAG). The purpose of the Survey was to capture the region's rapid population growth since the last decennial census, which was conducted in 2000. Approximately one in every 13 households in Maricopa County received the 2005 Census Survey. In addition to the survey of households, a combined full count of populations in group quarters and outdoor locations (homeless) was also conducted.

The Survey indicated a September 1, 2005 population for Maricopa County of 3,700,516 people. This represented an increase of 628,367 people, or about 20.5 percent since 2000. The Survey also determined the population for each city or town within Maricopa County. Table 3-1 lists the population numbers by jurisdiction for 2000 and 2005. Many of the fastest-growing cities in Maricopa County showed percentage increases in the triple digits. The City of El Mirage had the highest percentage increase of 321 percent, followed by the Town of Queen Creek (279%), the Town of Buckeye (199%), the City of Surprise (186%), the City of Goodyear (144%), and the Town of Youngtown (105%). The City of Phoenix had the largest net increase in population, with the addition of 154,789 residents.

Population Forecasting

For the past several decades, the MAG Region has been one of the fastest growing metropolitan areas in the United States, among those with populations of more than one million people. In April of 2000, Maricopa County had a resident population of 3,072,149. This was a population growth of approximately 44 percent, or 950,000 people in the decade from 1990 to 2000. MAG Socioeconomic Projections indicate that this high growth rate is expected to continue. Historic and projected growth in population and employment is illustrated in Figure 3-1.

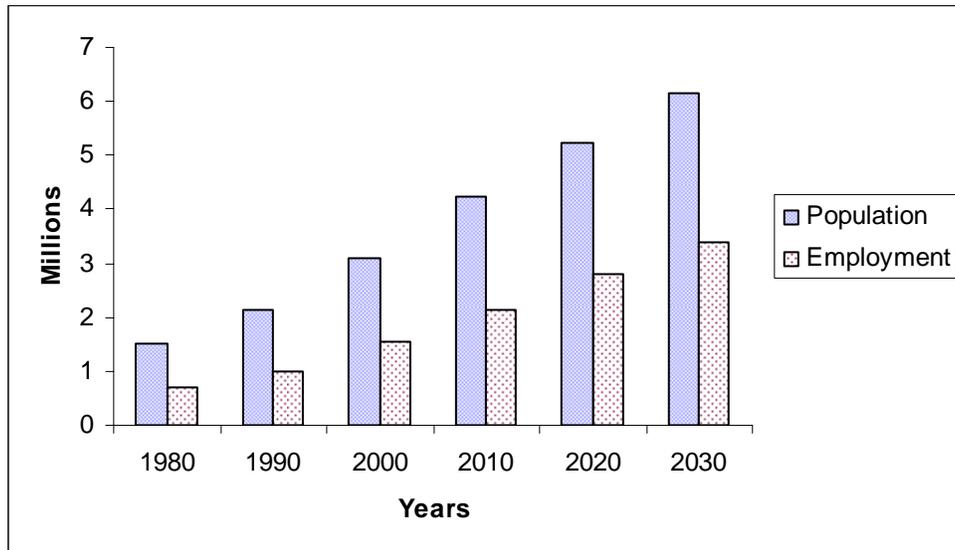
**TABLE 3-1
TOTAL RESIDENT POPULATION BY JURISDICTION
APRIL 1, 2005 and SEPTEMBER 1, 2005**

Jurisdiction	Total Resident Population (April 1, 2000)	Total Resident Population (Sept 1, 2005)	Change (2000-2005)	% Change (2000-2005)
Avondale	35,883	69,356	33,473	93%
Buckeye	8,497	25,406	16,909	199%
Carefree	2,927	3,684	757	26%
Cave Creek	3,728	4,766	1,038	28%
Chandler	176,581	230,845	54,264	31%
El Mirage	7,609	32,061	24,452	321%
Fountain Hills	20,235	24,492	4,257	21%
Gila Bend	1,980	1,808	-172	-9%
Gilbert	109,697	173,072	63,375	58%
Glendale	218,812	242,369	23,557	11%
Goodyear	18,911	46,213	27,302	144%
Guadalupe	5,228	5,555	327	6%
Litchfield Park	3,810	4,528	718	19%
Mesa	396,375	448,096	51,721	13%
Paradise Valley	13,664	13,863	199	1%
Peoria *	108,363	138,109	29,746	27%
Phoenix	1,321,045	1,475,834	154,789	12%
Queen Creek *	4,197	15,916	11,719	279%
Scottsdale	202,705	234,752	32,047	16%
Surprise	30,848	88,265	57,417	186%
Tempe	158,625	165,796	7,171	5%
Tolleson	4,974	6,498	1,524	31%
Wickenburg	5,082	6,077	995	20%
Youngtown	3,010	6,163	3,153	105%
Balance of County	209,363	236,992	27,629	13%
Total Maricopa County	3,072,149	3,700,516	628,367	20%

Total resident population includes resident population in households and resident population in group quarters (dorms, nursing homes, prisons and military establishments).

*These values include the Maricopa County portion of Peoria and Queen Creek only.

**FIGURE 3-1
REGIONAL POPULATION AND EMPLOYMENT (1980-2030)**



Population Forecasting Process

As a part of the process of developing regional growth data, MAG has prepared a series of subregional population and employment forecasts. According to Executive Order 95-2, the Arizona Department of Economic Security (DES) is responsible for developing official State and County control total population projections, while MAG is responsible for preparing subregional projections consistent with these control totals.

Subsequent to the release of the 2005 MAG Area Census Survey in June 2006, DES prepared a set of Maricopa County population projections consistent with the 2005 Census Survey. MAG has also developed a set of employment projections for Maricopa County that are consistent with the DES population projections. These county-level population and employment projections were approved by the MAG Regional Council in December 2006. Using these figures as control totals, MAG developed a set of subregional population and employment projections. These subregional projections were approved by the MAG Regional Council in May 2007.

Population Projections

Maricopa County has grown from a population of 1.5 million persons in 1980, to a population of 3.7 million in 2005. By 2030, Maricopa County is projected to double in population over the 2000 base population, with an anticipated total of 6.1 million people. This means that the region will experience a growth of approximately one million people during each decade.

Table 3-2 shows the total resident population for Municipal Planning Areas (MPAs) from July 1, 2005, to July 1, 2030. Total resident population includes the resident population in households, and

TABLE 3-2
TOTAL RESIDENT POPULATION BY MPA
JULY 1, 2005 and PROJECTIONS JULY 1, 2010 to JULY 1, 2030

MPA	Total Resident Population 2005	Total Resident Population 2010	Total Resident Population 2020	Total Resident Population 2030
Avondale	70,160	83,856	105,989	123,265
Buckeye	32,735	74,906	218,591	419,146
Carefree	3,654	4,418	5,816	6,097
Cave Creek	4,845	5,781	7,815	9,656
Chandler	236,073	265,107	282,991	283,792
County Areas	80,661	87,434	107,441	159,312
El Mirage	31,935	34,819	38,620	38,717
Fountain Hills	24,347	27,166	33,331	33,810
Fort McDowell	824	839	1,037	1,239
Gila Bend	2,118	2,575	3,950	9,074
Gila River	2,742	2,790	2,941	3,410
Gilbert	178,708	218,009	285,819	300,295
Glendale	257,891	279,807	315,055	322,062
Goodyear	47,520	71,354	174,521	299,397
Guadalupe	5,555	5,790	5,982	5,983
Litchfield Park	6,787	8,587	10,305	10,510
Mesa	486,296	518,944	565,693	584,866
Paradise Valley	14,136	14,790	15,224	15,352
Peoria	141,441	172,793	236,154	306,070
Phoenix	1,510,177	1,695,549	1,990,450	2,201,843
Queen Creek	19,879	34,506	55,529	72,947
Salt River	6,822	7,087	7,308	7,425
Scottsdale	234,515	249,341	269,266	286,020
Surprise	93,356	146,890	268,359	401,458
Tempe	165,740	177,771	191,881	197,970
Tolleson	6,491	7,748	9,646	10,193
Wickenburg	9,606	11,022	13,311	17,732
Youngtown	6,011	6,820	7,275	7,359
TOTAL	3,681,025	4,216,499	5,230,300	6,135,000

Notes:

Total resident population includes resident population in households and resident population in group quarters (dorms, nursing homes, prisons and military establishments)

These projections include the Maricopa County portion of Peoria, Queen Creek and the Gila River Indian Community only.

The City of Apache Junction which became a MAG member in 2002, had a resident population of approximately 40,000 in the Year 2000. MAG has assembled databases and compiled placeholder projections based on their input for portions of Pinal County. Based upon their input, Apache Junctions population is projected to be: 78,000 in 2010; 122,000 in 2020; 142,000 in 2025; 157,000 in 2030.

For complete notation on this series please refer to Caveats for Socioeconomic Projections 2007.

the resident population in group quarters (dorms, nursing homes, prisons and military establishments). Over the 25-year period (2005-2030), seven MPAs are projected to grow by more than 100,000 persons. These areas include Phoenix, Buckeye, Surprise, Goodyear, Gilbert, Peoria, and Chandler. Another five MPAs are projected to experience population growth greater than 50,000 persons, which include Mesa, Avondale, Scottsdale, Glendale, and the Maricopa County portion of Queen Creek.

Currently, there are five MPAs within the MAG Region with populations of over 200,000 persons, which include Phoenix, Mesa, Glendale, Chandler and Scottsdale. By 2010, Gilbert will surpass 200,000 in population, and will be followed by Peoria, Buckeye and Surprise by 2020. By 2030, the largest Municipal Planning Area – Phoenix, will contain 2.2 million persons, followed by Mesa at 585,000, Buckeye at 419,000, and Surprise at 401,000. Figures 3-2 and 3-3 are maps that display the population concentrations for 2000 and 2030. By definition, the population concentration measures the average population within a one-mile radius. This analysis helps in smoothing out differences in geographies and in identifying underlying spatial patterns in the data. The pattern of population concentrations illustrates the shape of urban form as it is projected to evolve according to local land use plans and densities.

Employment Forecasting

By 2030, Maricopa County is projected to more than double its reported 2000 employment total. This means that employment within the region will grow at a number of approximately 575,000 jobs each decade. Figure 3-1 depicts the employment growth trends projected in the MAG Region to 2030. It should be noted that the employment projections are by place of work, and not by place of residence as reported by the Census Bureau.

Community Job Centers

Community Job Centers are areas that are comprised of an identifiable concentration of employment activities and land uses that are entirely, or predominantly of a non-residential nature. Delineated Community Job Centers consist of concentrated, or mixed areas of industrial, office, retail, airport, and government land uses and employment activities.

Job center information assists in the transportation planning process by providing valuable information on each of the following items: employment types at each job center; demographic data; existing and anticipated employment totals; floor area and total square footage of locations; existing acreage; and the total build out of each identified job center. Due to their significant commercial and industrial base, many of these areas have a tendency to generate a higher level of vehicular trips and trips associated with freight-related activities.

MAG coordinated efforts with municipal planning and economic development directors throughout the region in an attempt to identify and effectively inventory existing and future job centers. A total of 131 job centers within the Maricopa County were identified. These particular job centers are categorized into the following four categories: Developed Centers, Existing Centers with Expansion Potential, Future Centers without Infrastructure, and Revitalization Centers.

2007 Update Regional Transportation Plan

Fig. 3-2

REGIONAL
TRANSPORTATION
PLAN

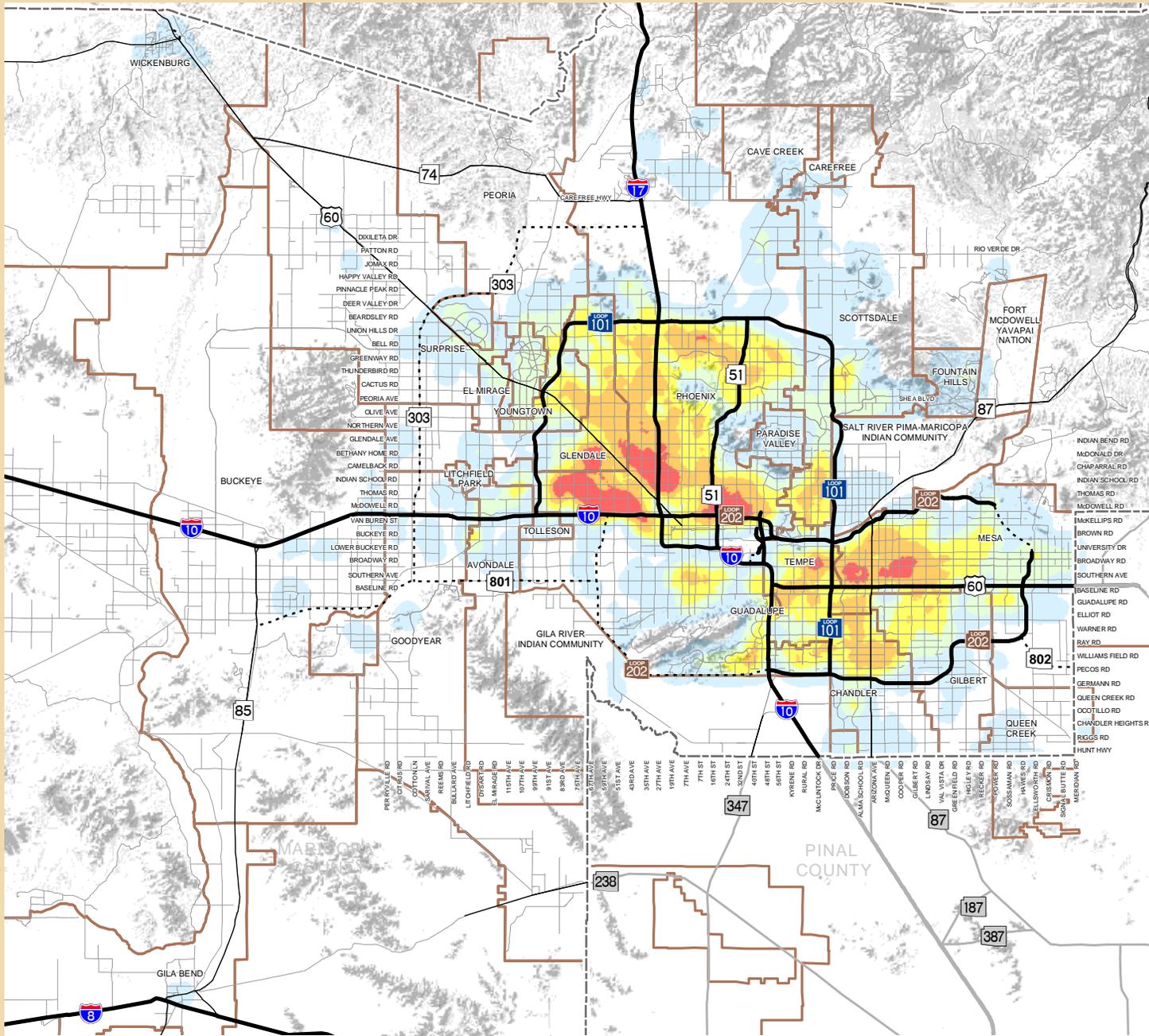


2000 Population Concentration for Interim Socioeconomic Projections*

Persons per Square Mile

(Maricopa County Average = 336)

- Less than 250
- 250 to 2,000
- 2,000 to 4,000
- 4,000 to 6,000
- 6,000 to 8,000
- More than 8,000
- Municipal Planning Area
- Existing Freeway
- Planned Freeway/Highway
- County Boundary
- Highways
- Other Roads



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.



*Based on Interim projections by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ) for 2010, 2020, 2025 and 2030 accepted by MAG Regional Council on June 25, 2003.

2007 Update Regional Transportation Plan

Fig. 3-3

REGIONAL
TRANSPORTATION
PLAN



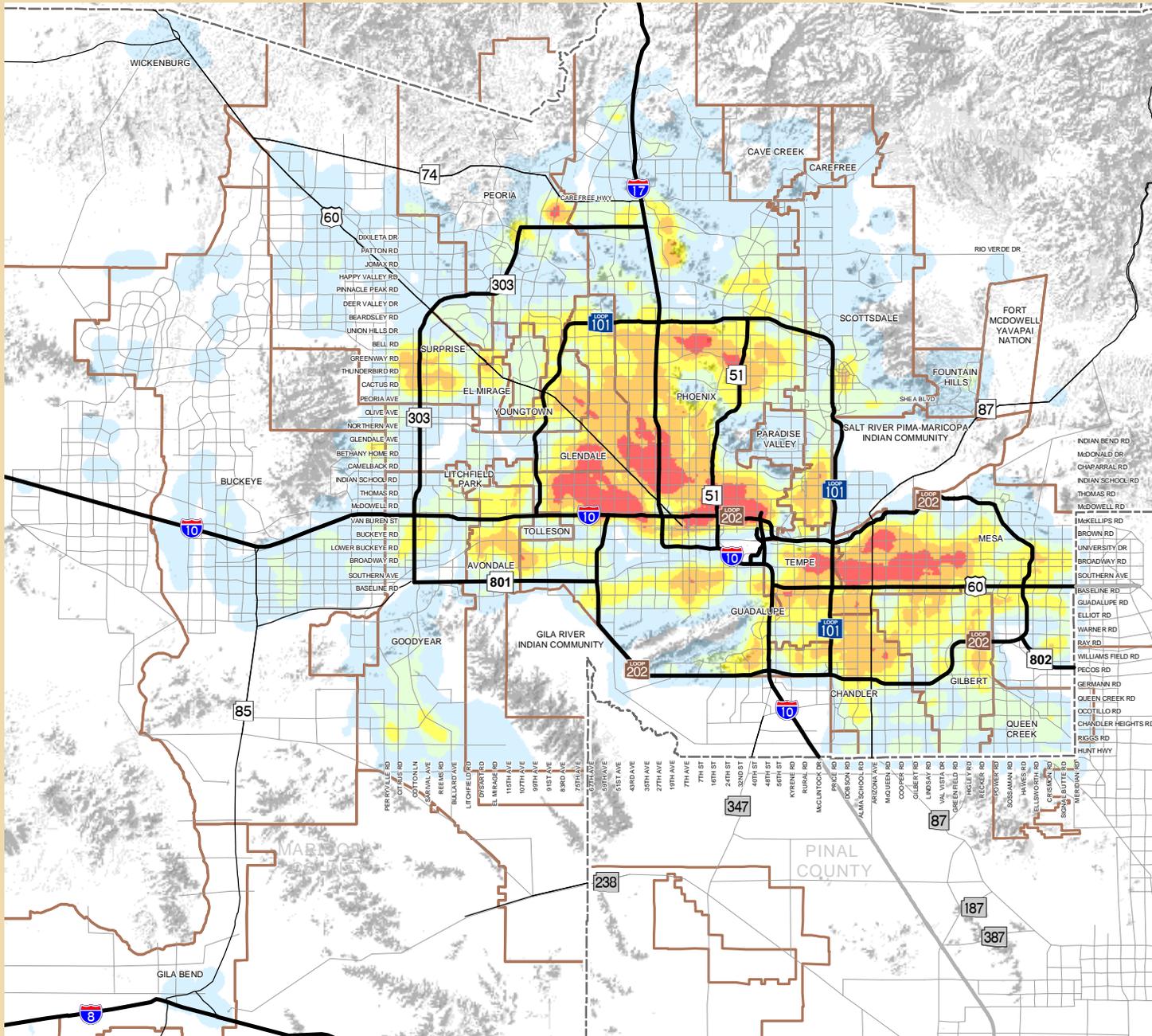
2030 Population Concentration for Interim Socioeconomic Projections*

Persons per Square Mile
(Maricopa County Average = 666)

- Less than 250
- 250 to 2,000
- 2,000 to 4,000
- 4,000 to 6,000
- 6,000 to 8,000
- More than 8,000
- Municipal Planning Area
- Freeways
- County Boundary
- Highways
- Other Roads



MARICOPA
COUNTY

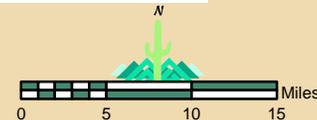


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Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

*Based on Interim projections by Municipal Planning Area (MPA) and Regional Analysis Zone (RAZ) for 2010, 2020, 2025 and 2030 accepted by MAG Regional Council on June 25, 2003.



Employment Forecasts

Table 3-3 displays the present projected regional employment totals by MPA, which is reported by total employment from July 1, 2005, to July 1, 2030. Total employment categories also include individuals that work at home, and all construction employment. Since construction employment typically follows development, the projected employment numbers may in fact show declines in future years for certain MPAs when the MPA growth has slowed down.

Compared to 2005, it is projected that there will be a more uniform distribution of jobs by place of work between MPAs throughout the MAG Region. Although the Phoenix MPA is expected to contain the most jobs in the region, its share declines from 46 percent of all jobs in 2005, to a figure of approximately 37 percent in 2030. In 2005, the top four MPAs of Phoenix, Mesa, Tempe and Scottsdale contained 77 percent of all jobs by place of work. By 2030, their collective share is projected to decline to 60 percent. Between 2005 and 2030, Maricopa County job growth is projected to be 1.6 million jobs, which includes the following stages of growth: 409,000 jobs between 2005 and 2010; 631,000 jobs between 2010 and 2020; and 591,000 jobs between 2020 and 2030.

Regional Land Use Patterns

MAG maintains Geographic Information System regional databases of existing and future land uses for all MAG Member Agencies. The existing land use data set depicts the current status of land as it is built presently. The future land use data set is created using the current adopted General Plans and known developments from all MAG Member Agencies. Since these data sets are instrumental in developing socioeconomic projections, these data sets are updated on a regular basis. Also, these data sets are reviewed by MAG Member Agency staff to check for any errors or omissions.

Table 3-4 displays the existing and future land use data for Maricopa County. MAG also tracks known development projects in Maricopa County. Currently, the MAG development database has 990 known development projects. These projects include active, entitled and also conceptual developments. These developments cover more than 460,000 acres and could add approximately 1.2 million housing units to Maricopa County.

Another consideration in regional land use patterns is the Pinal County area. The MAG transportation modeling region extends into Northern Pinal County, in order to take into account the transportation implications of growth outside of Maricopa County. As a part of this modeling process, projections of population, households and jobs in Pinal County were needed in order to estimate future travel demand. Working with the Arizona State Lands Department, Central Arizona Association of Governments (CAAG) and other local public agencies in Pinal County, MAG assembled databases and compiled placeholder projections. Based on this joint forecasting effort, the Pinal County portion of the MAG transportation modeling area is projected to grow from approximately 150,000 people in 2000, to approximately 1,010,000 by 2030. Total employment in the area is projected to grow from approximately 45,000 to 221,000 in the same period.

Data on known development projects from CAAG indicates that currently, Pinal County has 350 known active, entitled, and conceptual development projects. These developments cover approximately 200,000 acres and could add approximately 700,000 housing units to Pinal County.

**TABLE 3-3
TOTAL EMPLOYMENT BY MPA
JULY 1, 2005 and PROJECTIONS JULY 1, 2010 to JULY 1, 2030**

Municipal Planning Area (MPA)	Total Employment 2005	Total Employment 2010	Total Employment 2020	Total Employment 2030
Avondale	12,315	20,599	37,776	53,083
Buckeye	8,672	22,400	57,297	147,851
Carefree	2,669	3,270	3,992	4,329
Cave Creek	2,602	3,564	4,666	6,066
Chandler	86,732	128,244	168,141	178,116
County Areas	24,051	27,353	39,281	70,428
El Mirage	2,858	5,001	9,276	11,528
Fountain Hills	7,492	9,954	11,569	11,573
Fort McDowell	1,228	1,323	1,647	1,959
Gila Bend	1,077	1,691	2,760	6,824
Gila River	4,334	5,422	7,612	14,448
Gilbert	56,292	81,852	117,984	128,792
Glendale	88,172	117,110	156,508	171,498
Goodyear	15,794	28,167	73,622	130,336
Guadalupe	1,033	1,387	1,467	1,481
Litchfield Park	1,710	2,405	3,200	4,280
Mesa	174,909	218,085	275,236	306,030
Paradise Valley	5,769	6,717	7,707	8,734
Peoria	34,631	53,397	87,968	117,861
Phoenix	811,513	937,182	1,108,031	1,246,527
Queen Creek	4,021	9,652	22,213	35,145
Salt River	5,977	11,131	25,587	49,905
Scottsdale	181,652	208,073	232,832	252,015
Surprise	16,289	31,105	81,423	147,703
Tempe	176,688	198,243	219,543	235,616
Tolleson	12,340	15,808	19,854	22,314
Wickenburg	5,055	6,622	8,921	12,316
Youngtown	1,657	1,667	1,988	2,042
TOTAL	1,747,532	2,157,424	2,788,101	3,378,800

Notes:

Employment projections may show declines in future years, because construction employment follows development.

*These projections include the Maricopa County portion of Peoria, Queen Creek and the Gila River Indian Community only.

The City of Apache Junction which became a MAG member in 2002, had employment of approximately 5,000 in the Year 2000. MAG has assembled databases and compiled placeholder projections based on their input for portions of Pinal County. Based upon their inp

For complete notation on this series please refer to Caveats for Socioeconomic Projections 2007.

**TABLE 3-4
MAG OR MARICOPA COUNTY EXISTING AND FUTURE LAND USE**

Land Use	Existing Land Use (Sq. Mi.)	% Developed Land (Existing)	Future Land Use (Sq. Mi.)	% Developed Land (Future)
Residential	720	12.0%	4,010	43.5%
Commercial	60	1.0%	110	1.2%
Industrial	50	0.8%	100	1.1%
Office	10	0.2%	20	0.2%
Other/Public/Transportation	160	2.7%	220	2.4%
Open Space	5,010	83.4%	4,460	48.4%
Mixed Use	0	0.0%	300	3.3%
Vacant	3,210		0	

Notes:

Area rounded to the nearest 10 sq. miles

This analysis is for Maricopa County only and does not include the Pinal County part of Queen Creek and Apache Junction or the Yavapai County part of Peoria and Wickenburg.

Existing and Future land use data reviewed by MAG Member Agencies in 2005

Consistency with State and Local Planned Growth Patterns

The regional transportation planning process maintains consistency with State and local planned growth patterns by: (1) incorporating them into the socioeconomic forecasting process, which provides the basis for travel demand modeling, and (2) taking them into account directly in subregional and corridor transportation studies.

Socioeconomic Forecasting

The primary purpose of the population and socioeconomic projections developed by MAG is for input into the MAG transportation and air quality models. However, they are also used for a wide variety of regional planning programs such as human services, regional development and by MAG member agencies in developing their plans. Important objectives of the modeling process are to: (1) establish a linkage between transportation, land use and air quality models, (2) test various policy alternatives and land use scenarios, and (3) incorporate a Geographic Information System (GIS) into the process for better data sharing and review with member agencies and for maintaining an innovative approach to land use planning. The process for accomplishing each of these objectives takes into account State and local planned growth and economic development patterns.

The land use, population and socioeconomic forecasting process is based on a three-tier modeling approach. The first tier is a demographic model that is used to produce county control totals, within the state level context. The preparation of county and state level population projections is the responsibility of the Arizona Department of Economic Security (DES). This model is a demographic model, projecting births, deaths and net migration in each county for a fifty-year time

horizon. The model also takes into account short-term economic conditions. The second tier involves using a spatial interaction model to allocate the county control total population and employment to subregions. The forecasting procedure starts with regional trends, transportation facility descriptions and data on the current location of employment by sector. This information is then used to project the future location of households. The third tier allows for the allocation of the subregional population to smaller areas drawing upon land use plans and local policies of MAG member agencies. The third tier modeling process allocates population and employment from regional analysis zones to one-acre grids that are then aggregated to traffic analysis zones used in the travel demand modeling process.

The existing land use coverage is important to the projections process because it establishes areas that have already been developed or are not suitable for further development. The developed areas become ineligible for the allocation of population and employment growth, except where the area is planned for redevelopment. Non-developable areas include open space or environmentally sensitive lands, or areas where the relief makes construction infeasible. The existing land use database is digitized based on input from MAG member agencies and then circulated to the agencies for review and verification. Changes are made based on comments provided.

Future land use coverage is also important in the forecasting process. The future land use database is based upon the plans of MAG member agencies and identifies both the type of development that is anticipated to occur in the future and the density of that development. The Future Plan Land Use database also allows for the direct comparison between existing and planned land use. The difference between the existing and planned land use databases helps determine where development may take place.

Subregional and Corridor Transportation Studies

Area and corridor transportation planning studies are the foundation of the MAG regional transportation planning process. These studies assess transportation conditions in within a specified geographic area or modal facility system, and evaluate potential new facilities and services, as well as improvements to existing elements. Travel demand and facility interactions over the entire region are recognized as part of this process, to ensure that compatible system improvements are being proposed.

One of the major steps in the area/corridor study process covers the inventory of land use and economic development factors. Data on existing and planned future conditions is assembled through consultation with State and local agencies. This process also includes the identification of potential land use and economic issues affecting the area or corridor under study. The information on existing and potential future conditions is a major input for identification of alternatives. Land use and economic development data and issues are also utilized as input for the development of evaluation criteria and the assessment of alternatives. This evaluation process provides insights regarding the possible land use and economic effects and helps take these factors into account in future decisions on proposed new transportation corridors or improvements to existing facilities and services.

CHAPTER FOUR

PUBLIC INVOLVEMENT

The transportation planning process for the development of the Regional Transportation Plan (RTP) benefits greatly by incorporating broad-based public input, which is received as the result of an extensive public involvement process. During the comprehensive update of the RTP in 2002 and 2003, MAG talked to thousands of people in an effort to identify public issues and concerns regarding future transportation needs. As part of this process, MAG held 150 public input opportunities, 173 stakeholder opportunities, and 117 agency meetings to solicit input from the public, community groups, business associations, transportation stakeholders, elected and appointed leaders, city planners, municipal technical staffs, transportation councils, and the region's Native American Indian Communities. In addition to these efforts, MAG pursues its continuing public involvement process throughout the year, which is described below.

Development of the Public Participation Plan

In response to requirements included in the Federal transportation legislation known as the Safe, Accountable, Flexible, Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU), in 2006 MAG adopted a new Public Participation Plan as outlined in section *450.31: Interested parties, participation, and consultation*. MAG's previous public involvement process was adopted in 1994 and enhanced in 1998, and was pivotal in obtaining ongoing input to the regional transportation planning process.

As required under SAFETEA-LU, the purpose of the new MAG Public Participation Plan is to “define a process for providing citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, agencies or entities responsible for safety/security operations, providers of non-emergency transportation services receiving financial assistance from a source other than Title 49, United States Code (U.S.C), Chapter 53, and other interested parties with reasonable opportunities to be involved in the transportation metropolitan planning process.”

The new Public Participation Plan was developed in consultation with all interested parties, and a public comment period of 45 days was provided for review before adoption. The approach to the public involvement process laid out in the MAG Public Participation Plan is described below.

MAG Public Involvement Process

MAG's public involvement process, as presented in its Public Participation Plan, is divided into four phases: early phase, mid-phase, final phase and continuous involvement. The early phase meetings ensure early involvement of the public in the development of these plans and programs. The mid-phase process provides for input on initial plan analysis for the RTP and Transportation Improvement Program (TIP), and includes a public hearing on regional transportation issues. The final phase provides an opportunity for final comment on the RTP, TIP and Air Quality Conformity Analysis. In addition, continuous outreach is conducted throughout the annual update process and

includes activities such as distributing press releases and newsletters, presentations to community and civic groups, information booths, and special events coordinated with the Arizona Department of Transportation (ADOT), Regional Public Transportation Authority (Valley Metro), Valley Metro Rail (METRO) and the City of Phoenix Public Transit Department. All of the comments received through MAG's public involvement process are summarized and provided to the Management Committee, Transportation Policy Committee and Regional Council in the form of input opportunity reports.

Public Input Activities

The early phase is generally conducted from August through October, the mid-phase from February through March, and the final phase late in the summer. There are many ways in which MAG obtains input during these phases, from small group presentations to open houses to special events. In addition, continuous outreach is conducted throughout the annual update process and includes activities such as:

- **Coordination with the Citizens Transportation Oversight Committee (CTOC)** - In 1996, MAG expanded membership of the Regional Council to include the chairman of CTOC as an ex-officio member on matters relating to the Regional Freeway System. Providing CTOC membership on the Regional Council provides citizen representation and ensures citizen involvement on important matters relating to the MAG freeway plan.
- **Public Presentations to Groups** - MAG staff provides speakers upon request to make presentations to community and civic groups.
- **Traditionally Underserved Populations** - Through its public involvement process, MAG seeks to provide Title VI communities and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment, especially as they relate to MAG's transportation plans and programs. MAG recognizes that environmental justice is more than a set of legal and regulatory obligations. Following environmental justice principles and procedures will improve all levels of transportation decision-making. In addition, through Valley Metro and the MAG Elderly and Persons with Disabilities Transportation Committee, the needs of elderly and people with disabilities are addressed under the Regional Complementary Paratransit Plan. In addition, MAG seeks and considers the needs of those traditionally underserved by existing transportation systems by collaborating with the human services planning staff at MAG, which plans for services for low-income, elderly and disabled populations. MAG transportation plans and programs are submitted to the Human Services Coordinating Committee for review. Additionally, MAG provides multimodal transportation information for review and comment to the Human Services planning process.
- **Open Meetings** - MAG conducts meetings in accord with open meeting laws. Meetings of technical committees, working groups, the Management Committee, Transportation Policy Committee and the Regional Council are open to the public.

- **Regional Council Comment Period** - Citizens are provided opportunities to speak at each Regional Council meeting. The first opportunity is during a Call to the Audience, in which members of the public can comment on items not on the agenda that fall under MAG's jurisdiction, or on items that are on the agenda but are not scheduled for action. Citizens are also given an opportunity to comment on Consent Items, and on any Action Item. Citizens have three minutes to comment during each opportunity, but may exceed three minutes at the discretion of the Chair.
- **MAG Web Site** - The MAG Web site lists information about member agencies, committee meetings and activities, planning activities, input opportunities, press releases, schedules of events, minutes, agendas and publications. The Internet address of the MAG Web site is www.mag.maricopa.gov. In addition to the main MAG Web site, MAG also maintains project specific sites such as www.LetsKeepMoving.com, devoted to the Regional Transportation Plan, and www.WebofFriends.org, focusing on domestic violence.
- **Newsletters** - Newsletters report information of general interest on events and programs at MAG, as well as on specific items such as the RTP and the TIP. The newsletter also includes a calendar of meetings and input opportunities.
- **Press Releases** - Press releases are prepared and distributed to local media in conjunction with periodic news events.
- **Meeting Notices and Advertisements in Principal Newspapers** - All of the formal public hearings and public involvement opportunities are announced with public notices and/or display advertisements in the largest circulation newspaper and in minority-oriented newspapers. Where appropriate, information is provided in a bilingual format. Meeting notices for the RTP and the TIP are typically sent two weeks in advance.
- **Direct Mailing** - MAG maintains a current mailing list that includes interested citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, advocates for low income and minority interests and representatives of community groups with an interest in transportation. This mailing list is used to announce meetings, distribute newsletters, and for other opportunities for public involvement. Interested individuals are added to the mailing list upon request.
- **Staff Contacts** - The name of an appropriate staff contact is published in the RTP, the TIP and other transportation documents, as well as on project pages of the MAG Web site.

Other Input Opportunities

MAG hosts and participates in many other input opportunities for the public, such as freeway openings, transportation fairs, public hearings and a variety of other special events throughout the year. Before the completion of plans and programs, draft documents are available to the public for review and comment, so that public concerns can be considered and reflected in the final documents. Upon completion, draft studies, plans, programs and reports are presented to the Management Committee, Transportation Policy Committee and Regional Council for review and

action and are available for public review. Historical reference files of all documents are maintained and these reports are also available for public review.

MAG has a diverse committee structure that involves technical professionals, administrative personnel, elected officials, business interests and citizen volunteers, representing every jurisdiction and many professions and interest groups. The meetings of the committees follow the policy described above under “Open Meetings.”

Visualization Techniques

With the help of its graphics, Web, and Information Services staff, MAG utilizes many innovative techniques to help residents better understand what transportation investments are included in its transportation plans and TIPs, and to help them visually conceive what the plans will look like when completed. Examples include project-specific maps and graphs, digital photography, high resolution graphic displays, Geographical Information Systems, map overlays, PowerPoint presentations, aerial photography, photo simulations, technical drawings, charts and graphs. Alternative scenarios, including visual depictions of scenarios, are presented to demonstrate differences among solutions or approaches.

Fiscal Year 2007 Public Involvement Program

The FY 2007 public involvement program was a coordinated process to solicit input on the 2007 Update of the RTP and FY 2008-2012 TIP Update. This public involvement process allows discussion of upcoming decisions that are likely to be included in the 2007 Plan and Program Updates. ADOT, Valley Metro, METRO and the City of Phoenix Public Transit Department participate in many of these key elements. A description of each phase of the update process follows.

FY 2007 Early Phase Input Opportunity

The early phase input opportunity was conducted over the period of August through October 2005. During this phase, public input was used to identify and address upcoming issues and work topics for the next update of transportation plans and programs. Several forums were conducted during this first phase, including open houses, special events and e-mail and telephone correspondence. All correspondence was included in the Early Phase Input Opportunity Report, which is distributed to the Management Committee, Transportation Policy Committee and Regional Council for review and consideration prior to any action.

- **Early Phase Transportation Stakeholders Open House and Meeting** - The FY 2007 early phase process began with the Early Phase Transportation Stakeholders Open House and Meeting, which was held on August 18, 2006, in the MAG offices. The meeting included a one-hour workshop on the process for submitting projects for MAG Federal funds. Community interest group representatives, ADOT district engineering staff, and staff from Valley Metro, METRO and MAG attended the stakeholders meeting. The meeting provided an opportunity for stakeholders to give ideas and suggestions on transportation needs to consider for State and Federal funding, including potential funding emphasis areas. An

ongoing policy discussion was initiated among ADOT, MAG and Valley Metro to discuss regional funding allocations and priorities. While the policy discussion was occurring, additional input from transportation stakeholders was solicited through extended public comment periods at MAG committee meetings, open houses and targeted stakeholder outreach.

- **Continued Input Opportunities During the Early Phase** - Other opportunities during the early phase included special events. MAG participated in several special events in conjunction with ADOT, Valley Metro and METRO. Events included the Chicanos Por La Causa Business Seminar in Spanish and I-17 Road Shows. MAG reached hundreds of people during this time and was able to distribute information about the RTP and TIP updates.
- **Extended Public Comment Periods at MAG Transportation Committee Meetings** - During the month of September, all MAG transportation committee meetings scheduled public comment periods. All meetings were held at the MAG offices in downtown Phoenix. The following committees offered public comment periods: Air Quality Technical Advisory Committee, Intelligent Transportation Systems Committee, Pedestrian Working Group, Regional Bicycle Task Force, Street Committee, Telecommunications Advisory Group, Transportation Review Committee, Transportation Safety Committee, Management Committee, Transportation Policy Committee and Regional Council.

FY 2007 Mid-Phase Input Opportunity

The mid-phase input opportunity was conducted during the period of February through March 2006. During this phase, public input was received on the initial plan development and analysis. Several forums were conducted during this phase, including a Mid-Phase Open House and Public Hearing, special events, open houses, and e-mail and telephone correspondence. At the public hearing, the State Transportation Board, MAG elected officials, staff from ADOT, Valley Metro, METRO and the City of Phoenix Public Transit Department gathered to hear public comment. A court reporter was in attendance at the hearing to take down comments verbatim. All correspondence at the hearing and during other events in the phase received a formal staff response and was included in the Mid-Phase Input Opportunity Report, which is distributed to the Management Committee, Transportation Policy Committee and Regional Council for review and consideration prior to any action.

FY 2007 Final Phase Input Opportunity

The final phase will be conducted in late summer. This phase will include a variety of input opportunities, culminating with the Final Phase Open House and Public Hearing. All correspondence from this phase will also receive a formal staff response and will be included in the Final Phase Input Opportunity Report, which is distributed to the Management Committee, Transportation Policy Committee and Regional Council for review and consideration prior to any final action.

Continuous Involvement

As part of the continuous outreach process, MAG staff presented information on transportation

planning and programming to a number of committees, groups and the media. These activities included:

- Attended meetings of the Citizens Transportation Oversight Committee.
- Numerous special events attended by MAG staff in conjunction and coordination with ADOT, Valley Metro, METRO and the City of Phoenix Public Transit Department.
- Provided feedback pages on all project pages of the Web, and responded to all comments received.
- Provided responses to public inquiries via Web site, telephone, and e-mail or written correspondence.
- Accommodated all public records requests.
- Met with citizens upon request.

CHAPTER FIVE

TITLE VI AND ENVIRONMENTAL JUSTICE

The intent of environmental justice (EJ) is to ensure that communities of concern, defined as minority populations, low income populations, aged populations, mobility disabled populations, and female head of household populations, are included in the transportation planning process, and to ensure that they may benefit equally from the transportation system without shouldering a disproportionate share of its burdens. Environmental justice is a planning consideration based on Title VI of the 1964 Civil Rights Act, and Executive Order 12898 of 1994, entitled *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*.

MAG recognizes the significance of transportation to all residents of the metropolitan area and the importance of Title VI/Environmental considerations in the transportation planning process. As a result, an environmental justice analysis of the RTP has been prepared.

Environmental justice principles that relate to the development of the RTP include:

- Ensuring the full and fair participation by all potentially affected communities in the transportation decision-making process, including those of low income or minority populations.
- Preventing the denial of, reduction in, or significant delay in the receipt of benefits by low income and minority populations.
- Avoiding, minimizing or mitigating disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low income populations.

Public Involvement Process for Title VI/EJ Communities

MAG's adopted policy for public involvement identifies opportunities for public input early on in the process, during the planning process, and prior to final hearings. The process provides complete information on transportation plans, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement in the process for all segments of the region's population, including Title VI and environmental justice communities.

MAG addresses underserved populations in a number of ways. Whether it is through the Title VI Community Outreach Program, GIS mapping, the Human Services Division of MAG, or through programs administered by the Regional Public Transportation Authority (RPTA) using MAG funds, the needs of the underserved are considered. Numerous public outreach activities have been conducted as part of the MAG RTP outreach efforts. These include staffed information booths, public workshops and meetings, attendance at events, presentations, and open houses. The outreach activities have been targeted to both specific minority groups and the general public as a whole.

During these public outreach activities, public comments on transportation issues are solicited from

a full range of participants. Feedback provided at these meetings and events is considered by MAG committees in the updating of the RTP. MAG's outreach to minority populations also involves the Spanish translation of RTP materials and documents. In addition, through RPTA's paratransit planning efforts, the needs of the elderly and people with disabilities are served. In addition, a MAG committee reviews and prioritizes applications for Federal assistance under the Elderly Persons with Disabilities Transportation Fund, which provides capital investments to programs serving the elderly and people with disabilities. Additionally, MAG provides multi-modal transportation information for review and comment through the Human Services planning process.

Communities of Concern

Title VI of the 1964 Civil Rights Act and related statutes require that individuals not be excluded from participating in, denied the benefit of, or subject to discrimination under any program or activity receiving Federal funding on the basis of race, color, national origin, age, sex, or disability. Executive Order 12898 further directs that Federal programs, policies and activities not have a disproportionately high and adverse human health and environmental effect on low income populations.

Five communities are included in the Title VI/EJ Analysis. Table 5-1 lists these five communities and the proportion of the county population represented by each one. To identify the specific areas within the county, census tracts with concentrations of each community greater than the county average were identified for analysis.

**TABLE 5-1
COMMUNITIES OF CONCERN FOR MARICOPA COUNTY**

Population			Census Tracts			
Category		Percent	Number of Tracts \geq County Average	% Tracts	Affected Population	% of Targeted Population Captured in Tracts
Maricopa County	3,072,149	100%	663	100%	--	--
Minority	1,037,619	34%	238	36%	699,429	67%
Age 60+	466,269	15%	197	30%	280901	60%
Poverty	355,668	12%	234	35%	255373	72%
Mobility	368,306	12%	296	45%	235200	64%
Female Hsehd.	71,467	2%	322	49%	51639	72%

Source: U.S. Census - 2000

The 2000 U.S. Census is the source of data used for determining the environmental justice communities of concern. The unit of analysis is the census tract. Census tracts are intended to remain relatively stable, and when they do change, the exact nature of the changes is published. Census tracts are drawn up by local committees, and accordingly are more likely to reflect the community's view of where one neighborhood ends and another begins. Tracts also are comparable in population size.

Communities of concern are identified as those tracts where the identified group represents a percentage of the population equal to or greater than that of the County mean. Federal guidelines

state that minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent, or (b) the minority population percentage of the affected area is measurably greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (CEQ, 1997).

The populations identified as communities of concern included the specific groups called out by the Federal Highway Administration's "Actions to Address Environmental Justice in Minority Populations and Low Income Populations" memorandum dated December 2, 1998, and by Presidential Executive Order 12898. Each of these populations is addressed below.

Environmental Justice Analysis

Each of the three major components of the RTP (freeways/highways, transit and arterial roads) was analyzed separately in this environmental justice analysis to assess the distribution of benefits of projects included within the RTP. Regional funding of the arterial street system is about nine percent of the Plan, and represents approximately 10 percent of the region's arterial street funding. Analysis of the distribution of the arterial streets projects is included here to provide a consistent treatment of each of the major components of the Plan. The entire arterial system provides broad coverage throughout the region and is generally developed in consistence with growth patterns.

Minority Populations

The Federal Highway Administration defines minority populations as American Indian or Alaskan Native; Asian or Pacific Islander; Black; not of Hispanic Origin; or Hispanic (FHWA, 1998). For the MAG RTP study this definition was expanded to include the following ethnic groups, as defined in the U.S. Census (2000): Black or African American alone - not Hispanic or Latino; American Indian and Alaska Native alone - not Hispanic or Latino; Asian alone - not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone - not Hispanic or Latino; some other race alone - not Hispanic or Latino; persons of two or more races - not Hispanic or Latino; and Hispanic or Latino (2000 U.S. Census SF4).

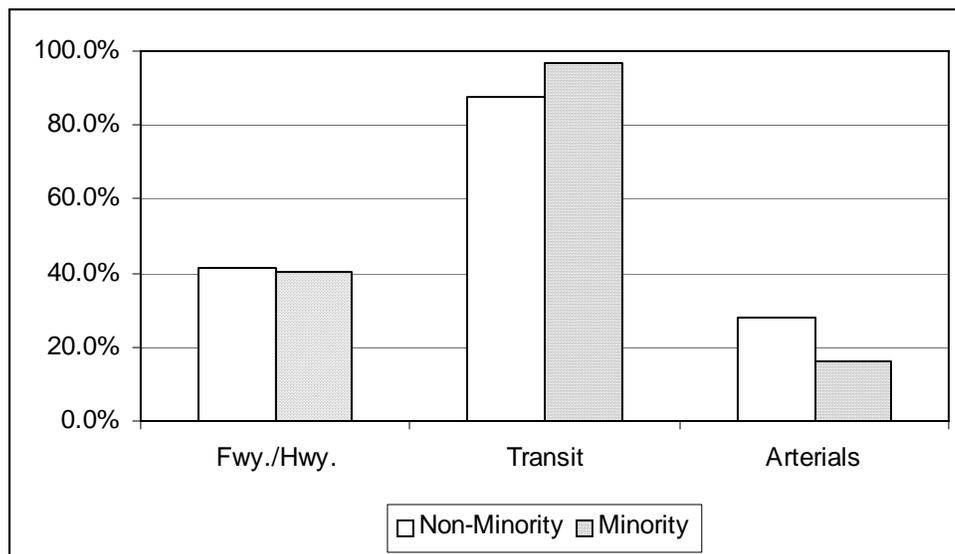
Minorities represent 33.8 percent of the population in Maricopa County. Census tracts equal to or greater than this percent number 238, or 36 percent of the 663 tracts in the County. Within these 238 tracts, 70 percent of the minority population in the County is found. The areas with a higher concentration of minorities (i.e. greater than one standard deviation above the mean) are the central and southwestern areas of Maricopa County, and the sovereign nations of the Gila River Indian Community (GRIC), the Salt River Pima-Maricopa Indian Community (SRPMIC), the Gila Bend Reservation of the Tohono O'Odham, and the Fort McDowell Mohave-Apache Reservation Indian Community. The tracts with the highest concentration of minorities (i.e. greater than two standard deviations above the mean) are primarily located within the central Phoenix area, south of Thomas Avenue.

The transportation needs of minority populations are the same as society as a whole (ignoring economic status that is considered in the next section). Thus, transportation facilities in minority communities should be the same as those in non-minority communities. Figure 5-1 presents a comparison, using census tracts as the measure, of the number of tracts served by freeway/highway, transit and arterial projects in the RTP in both minority and non-minority communities.

The percent of minority (40 percent) and non-minority (41 percent) communities that are served by new freeways or widening of existing freeways and highways is nearly identical. Planned transit improvements serve 97 percent of minority communities and 88 percent of non-minority communities. Arterial streets projects addressed by regional funding serve 16 percent of the minority communities compared to 28 percent for non-minority; These projects are primarily located in areas outside of the core metropolitan area where the majority of tracts with above average concentrations of the communities of concern exist. Because of the mature character of these core areas, transit improvements often represent the most advantageous approach to improving mobility.

Based on the review of freeway/highway, transit and arterial improvements, it is concluded that the RTP provides equal or better benefits to minority communities without causing disproportionately high adverse impacts.

**FIGURE 5-1
MINORITY COMMUNITIES AFFECTED BY THE RTP**



Low Income Populations

Low income populations are those whose median household income is at or below the Department of Health and Human Services poverty guidelines (2000 U.S. Census SF3). Poverty is based on the poverty thresholds developed and utilized by the U.S. Census, and are based on the size of family and number of related children less than 18 years of age. The poverty thresholds are revised annually to allow for changes in the cost of living. It is important to note that the poverty thresholds are the same for all parts of the country - they are not adjusted for regional, state or local variations in the cost of living.

To a great extent, the census tracts of higher than average minority populations are coincident with the tracts that contain a higher than average percentage of people living in poverty. Areas where

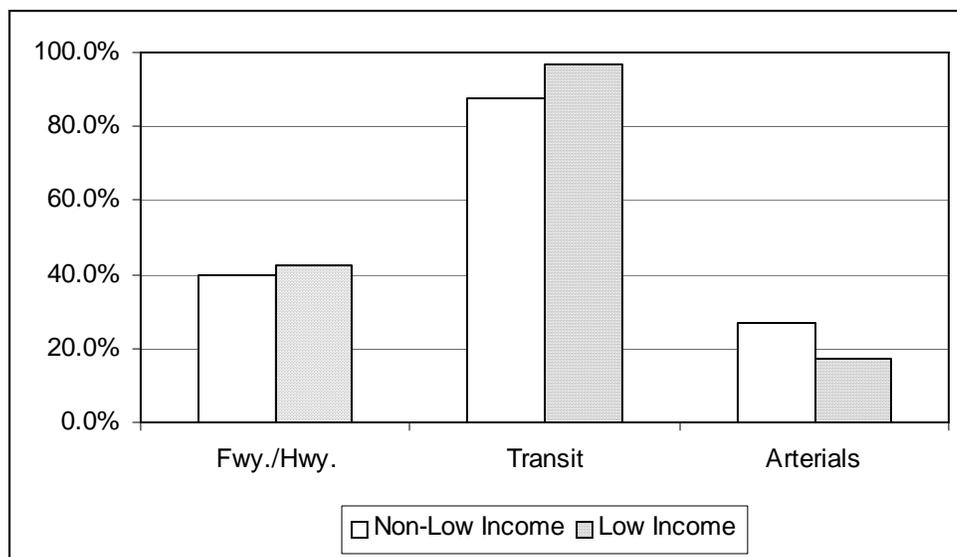
poverty is above the County average, but minority populations are not, include the northwestern portion of the County and areas of Mesa, Buckeye and North Phoenix. The tracts with the highest concentrations of persons living in poverty include Central Phoenix south of McDowell Road, the Gila River Indian Community, and the Tohono O'Odham Indian Community.

The transportation needs of low income communities would be met by more transit service than what would be important to the general population. Figure 5-2 presents a comparison of the number of census tracts served by the RTP in both low income and non-low income communities.

Low income communities that are served by the new freeways and widening of existing freeways and highways (43 percent) is slightly higher than communities identified as non-low income (40 percent). Transit improvements serve nearly all of the census tracts identified as low income (97 percent) and 88 percent of the non-low income tracts. Arterial street projects included in the RTP funding serve approximately 17 percent of the low income communities compared to 27 percent for non-low income; which are largely coincident with the minority tracts discussed in the previous section.

The analysis of the Plan improvements demonstrates that low income populations benefit from the Plan at about the same level, or in the case of transit considerably higher, than the census tracts not identified as low income.

**FIGURE 5-2
LOW INCOME COMMUNITIES AFFECTED BY THE RTP**



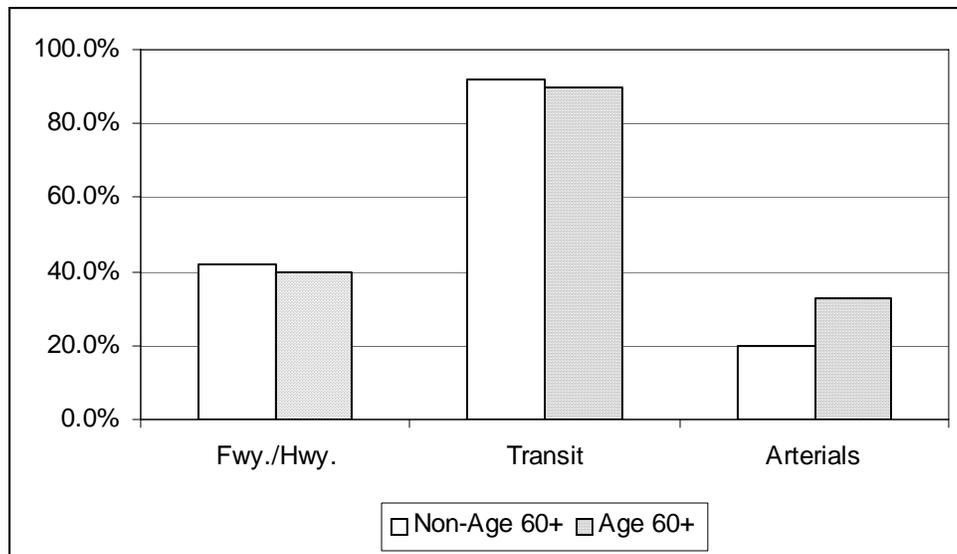
Aged Populations

Aged populations are defined as people 60 years of age and older (2000 U.S. Census SF1). Areas with above average populations of age 60-plus persons are primarily located in the northern part of the County, with concentrations overlapping the concentrations of mobility-disadvantaged peoples

as identified in the following section. The transportation needs of aged populations are similar to those of the general population, with the need for transit increasing with age.

Figure 5-3 presents a comparison of the number of census tracts served by the RTP in age 60 plus communities and under age 60 communities. The age 60-plus communities are served about the same as the other age groups in both freeway (around 40 percent) and transit (around 90 percent) funding. Arterial streets projects included in the RTP funding serve approximately 33 percent of the age 60-plus communities; higher than the number of below-60 tracts served (20 percent). This is indicative of the fact that many of the tracts containing higher than average age 60-plus communities are located outside of the metropolitan area core.

**FIGURE 5-3
AGE 60+ COMMUNITIES AFFECTED BY THE RTP**



Mobility Disability Populations

Mobility Disability as defined in 42 U.S.C. § 12102, is a disability that necessitates the use of a wheelchair or scooter for mobility. For this study, mobility limitations are derived from the “physical” and “going-outside-of-home” categories for individuals that are age five and over (2000 U.S. Census SF3).

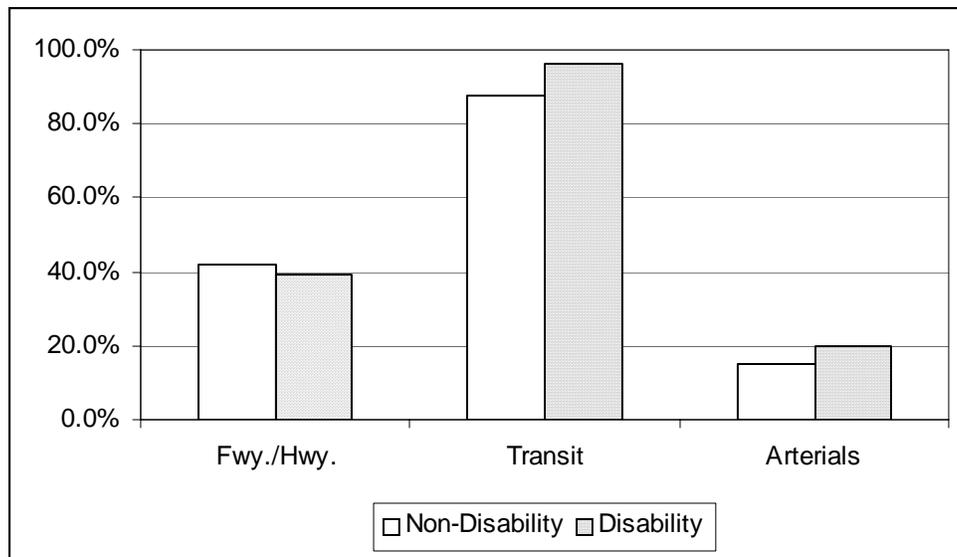
Census tracts with an above average percentage of mobility-disadvantaged people are widely scattered throughout the County, with notable concentrations in the unincorporated Sun City and Sun Lakes areas of Maricopa County, Youngtown, and south of East University Drive in Mesa.

Transportation needs of residents with mobility disabilities are not the same as those of the general population. People with mobility disabilities may require special apparatus for vehicular transportation. For this and other reasons, people with mobility disabilities may be more reliant on the transit options to meet their transportation needs. Figure 5-4 presents a comparison of the

number of census tracts served by the RTP in both mobility disability and non-mobility disability communities.

The number of Mobility Disability communities that are served by the new freeways and widening of existing freeways and highways (40 percent) is slightly lower than those not identified as mobility disability communities (42 percent). Transit improvements serve nearly all of the census tracts identified as mobility disability (96 percent). In addition to the transit coverage, the plan would regionally fund ADA complimentary paratransit service. Arterial street projects included in the RTP funding serve approximately 20 percent of the mobility disability communities, which is higher than the number of tracts identified as non-mobility disability.

**FIGURE 5-4
MOBILITY DISABILITY COMMUNITIES AFFECTED BY THE RTP**



Female Head of Household Populations

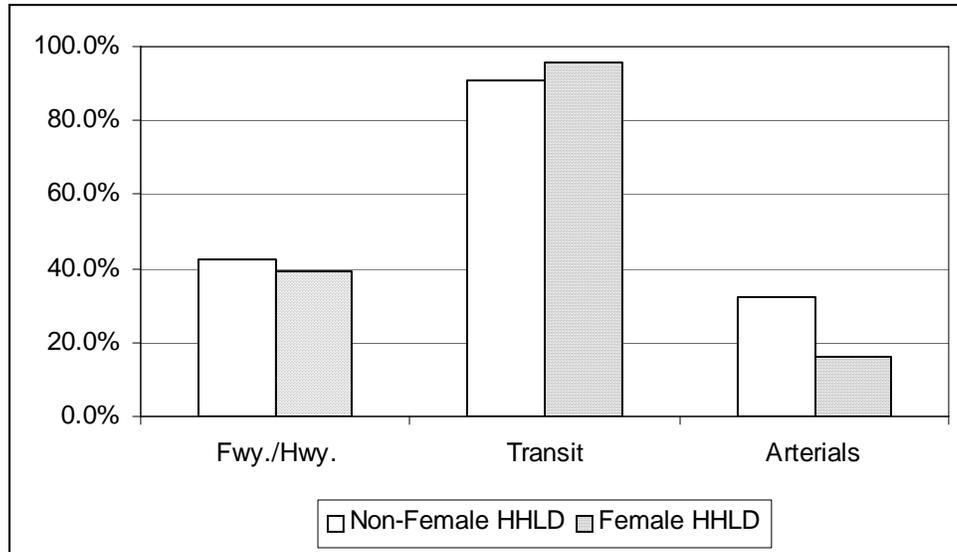
The female head of household category represents those households with a female householder, with no husband present, and with their own children under 18 years of age. Areas of “female head of household with children” greater than the county average are widely dispersed through the central Phoenix metropolitan area. Outside of the urban core the areas above the county average are largely limited to the Indian Communities. While census tracts above the county’s average for female head of households with children are largely coincident with poverty, they are more widely dispersed across the county than both low income and minority tracts.

The transportation needs of the female head of household populations are no different than that of the general population. Figure 5-5 presents a comparison of the number of census tracts served by the RTP in both female head of household and non-female head of household communities.

The percent of female head of household (39 percent) and non-female head of household (43 percent) communities that are served by new freeways or widening of existing freeways and

highways is nearly identical. Planned transit improvements serve 96 percent of female head of household communities and 91 percent of non-female head of household communities. Arterial streets projects included in the RTP funding serve approximately 16 percent of the female head of household census tracts. The RTP provides equal or better benefits to female head of household communities without causing disproportionately high adverse impacts.

**FIGURE 5-5
FEMALE HEAD OF HOUSEHOLD COMMUNITIES AFFECTED BY THE RTP**



Conclusion

MAG endeavors to incorporate environmental justice into regional transportation planning is an ongoing effort. Reaching out to disadvantaged communities and assessing their needs and interests is paramount to ensuring the continued quality of life of all residents in the Metropolitan Area.

MAG has demonstrated a commitment to listening to residents through continuous outreach efforts, and numerous events and activities have been held. To be effective, these efforts must be sustained, and the updating and expansion of contacts ongoing. Through the continued expression of this outreach effort, transportation planning for the region can equitably address the needs of all residents.

Approximately 40 percent of the census tracts for each of the communities of concern (minority, female head of household, poverty, disability and age 60+) are served by the improved freeway/highway network; virtually the same as the 40 percent of the non-minority census tracts that are served. Similar results were found in transit where around 90 percent or more of the communities of concern were served by the transit network; whereas, a slightly lower number of non-community of concern census tracts were affected.

The overlay analysis relies on proximity to transportation improvements as a measure of equity in the transportation planning process. Proximity is an important issue; however, it is only one of many issues related to transportation equity. Direct access to transit may be a benefit, however, locating a freeway in close proximity to a neighborhood may not be of benefit. Individual project impacts must, and will be addressed on a project-by-project basis. For those without cars in a region as geographically dispersed as the Phoenix Metropolitan area, transit provides a critical link to jobs, shopping and recreation. The 2000 Census reported that approximately two percent of the County's population used public transportation to travel to work, with an additional one percent regularly bicycling or walking to work. Reviewing the 2000 Census data, there appears to be a direct correlation between income and transit dependency.

Reaching out to address this need, the RTP increases funding for transit to 33 percent of the sales tax extension from the approximate two percent in the prior sales tax, demonstrating a growing commitment to provide transportation options for all residents of Maricopa County.

CHAPTER SIX

CONSULTATION ON ENVIRONMENTAL MITIGATION AND RESOURCE CONSERVATION

The process to develop transportation improvements to meet the travel demands of a growing metropolitan area, such as the MAG Region, must address a variety of concerns related to resource conservation and environmental mitigation. This issue is a key element of the metropolitan transportation planning process identified in the Federal Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was signed into law on August 10, 2005. SAFETEA-LU includes requirements for consultation with state and local agencies regarding conservation plans and maps, as well as inventories of natural or historic resources. This legislation also calls for consultation with Federal, State, Tribal, wildlife and regulatory agencies on potential environmental mitigation activities.

This chapter presents a discussion of the environmental mitigation and resource conservation concepts and issues raised during the consultation effort. This discussion focuses on the key factors that were raised during the agency consultation. The points listed are not intended to represent MAG policies, but rather, are factors for consideration in the planning process.

Consultation Process

As part of the planning process for the 2007 Update of the Regional Transportation Plan (RTP), MAG reached out to Federal, State Tribal, regional, and local agencies to consult on environmental and resource issues and concerns. Specific topics of interest included: land use management, wildlife, natural resources, environmental protection, conservation, historic preservation, and potential environmental mitigation activities. The primary goal of this consultation effort is to make transportation planning decisions and prepare planning products that are sensitive to environmental mitigation and resource conservation considerations. It should also be noted that all of the cities and towns in Maricopa County, and the Arizona Department of Transportation (ADOT) are routinely involved in the RTP and its development, as members of MAG.

An important consideration in the consultation process was the recognition that previously adopted projects in the RTP undergo extensive environmental and resource impact assessment by the implementing agencies, such as the ADOT, the Regional Public Transportation Authority (RPTA), cities, towns and Maricopa County. With these processes already well established, including requirements for input on mitigation and resource issues, the primary goal of the RTP consultation effort was to gain insights regarding concerns that may potentially involve future transportation planning efforts and future Plan elements. This approach avoided duplicating work efforts and burdening agencies with multiple requests for the same information. Another point worth noting regarding the consultation process is that many of the agencies that were consulted are involved in both environmental mitigation and resource conservation issues. In these cases, both topics were addressed during discussion sessions.

The overall approach to the consultation process included three major efforts: (1) an agency workshop, (2) individual agency meetings, and (3) participation in the MAG public involvement process.

Agency Workshop

The consultation effort was initiated through a workshop held for the agencies involved in environmental and resource issues in the MAG Region. A comprehensive listing of the agencies that were invited to attend the workshop is provided in Table 6-1. The purpose of the workshop was to explain the specific goals of the consultation process and receive input from the environmental and resource agencies in attendance. Specific topics covered during the workshop included:

TABLE 6-1
RESOURCE AND ENVIRONMENTAL AGENCIES

<p><u>Federal</u></p> <p>Army Corps of Engineers Federal Aviation Administration Emergency Management Agency (FEMA) Environmental Protection Agency (EPA) U. S. Fish and Wildlife Service U. S. Forest Service Federal Highway Administration Bureau of Land Management National Park Service Federal Transit Administration Luke Air Force Base</p> <p><u>Native American Indian Communities</u></p> <p>Fort McDowell Yavapai Nation Gila Bend Native American Community Gila River Indian Community Salt River Pima-Maricopa Indian Community Tohono O’Odham Native American Community</p>	<p><u>State</u></p> <p>Department of Commerce Division of Emergency Management Department of Environmental Quality Game and Fish Department Historic Preservation Office Mines and Mineral Resources State Land Department State Parks Department Department of Transportation Department of Water Resources</p> <p><u>Maricopa County</u></p> <p>Air Quality Department Environmental Services Flood Control District Parks and Recreation Planning and Development Services Department of Transportation</p>
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- MAG’s Organization and Planning Responsibilities.
- Environmental Mitigation and Resource Conservation in SAFETEA-LU.
- Goals of the MAG Consultation Effort.
- MAG Regional Transportation Plan.
- Planning Focus of the 2007 Update of the MAG Regional Transportation Plan.
- Agency Input on Environmental Mitigation and Resource Conservation Issues
- Agency Input on Available Databases and Other Information Resources.
- Future Steps in the Planning Process.

In addition to being an opportunity to receive agency input, the workshop established the beginning point for more in depth discussions with individual agencies, as appropriate. Also, those agencies unable to attend the workshop or participate in individual agency meetings were invited to provide input through correspondence or E-mail.

Individual Agency Meetings

As a follow-up to the agency workshop, the agency invitees were contacted in an effort to set up additional meetings to discuss resource conservation and environmental mitigation issues. This led to a series of one-on-one meetings with thirteen agencies. These meetings provided the opportunity to have detailed discussions on concerns and issues, as well as identify available data and information resources in depth. The major goals of these sessions were to:

- Obtain input on potential environmental mitigation activities that have the greatest potential to restore and maintain environmental functions affected by the transportation plan.
- Discuss land use, natural and cultural resource issues; and identify available plans, maps and inventories that can be used as information resources in the transportation planning process.

The key concepts and issues identified at both the workshop and the individual meetings are discussed later in this chapter.

MAG Public Involvement Process

As part of the overall consultation process, the environmental and resource agencies were included in the MAG public involvement process. The MAG public involvement process is divided into four phases: early phase, mid-phase, final phase and continuous involvement.

- **Early Phase** - Meetings are held to ensure early involvement of the public in the development of these plans and programs. The agency workshop was held in conjunction with the early phase.
- **Mid-Phase** - This process provides for input on initial plan analysis for the RTP and Transportation Improvement Program (TIP), and includes a public hearing on regional transportation issues. As part of this phase, agencies received a copy of the Draft 2007 RTP Update and were invited to comment.
- **Final Phase** - This phase provides an opportunity for final comment on the RTP, TIP and Air Quality Conformity Analysis. As part of this phase, agencies were given notice of the hearing, advised of any proposed changes to the Draft 2007 RTP Update, and invited to comment.
- **Continuous Involvement** - Throughout the annual update process, involvement activities are pursued, including distributing press releases and newsletters, making presentations to community and civic groups, and conducting special events coordinated with the Arizona Department of Transportation (ADOT), Valley Metro/Regional Public Transportation

Authority (RPTA) and Valley Metro Rail. The individual agency meetings were conducted as part of the continuous outreach effort.

Environmental Mitigation

A broad range of Federal, State, and Tribal agencies that specifically address wildlife, land management and regulatory matters were consulted regarding potential environmental mitigation activities that may have the greatest potential to address the environmental functions affected by the Plan. The transportation planning process and its future environmental implications were discussed, and concepts for potential environmental mitigation activities were identified. Since previously adopted projects in the RTP undergo extensive environmental and resource assessment by the implementing agencies through the NEPA process, the primary goal of the consultation effort was to gain insights regarding issues that may potentially involve future planning efforts and future Plan elements.

The consultation process yielded mitigation issues and concepts in four major areas: air quality, water quality, noise and habitat. The key points emerging from the discussions on these topics have been summarized below for consideration in the transportation planning process.

Air Quality

- **PM-10** - A major, transportation-related air quality issue in the MAG Region is PM-10 non-attainment. Streets and highways are a source of fugitive dust, as the action of traffic stirs up dust from the roadway into the air. Also, construction activity on transportation facilities can result in the track-out of soil onto streets and highways, and fugitive dust can be generated on transportation construction sites. Unpaved roads are also dust generators. Currently undeveloped areas contain significant mileages of unpaved roads. As development in the region expands, these facilities could become an increasingly important element in addressing PM-10 air quality issues.

Street sweeping, paving of shoulders, paving unpaved roads, and construction site management can help reduce dust emissions significantly. The application of “best practice” dust control measures at construction sites is essential in helping to reduce the impacts of developing new transportation corridors or improving existing facilities. Making effective use of available funds for PM-10 control measures may help move the region into attainment as quickly as possible. Arterial improvement projects to extend existing roadway would have the dual benefit of improved access and reducing emissions from unpaved roads. At the same time, paving these unpaved roads may increase access to sensitive habitat areas.

- **Other Mobile Sources** - Transportation can affect air quality because of the tailpipe emissions of gases and particles from vehicles. Increases in vehicle-miles-of-travel can result in higher total emissions compared to what they would be without those increases. The emissions from potential future transportation corridors in both attainment and non-attainment areas of the region should be considered. An overall assessment of how additional corridors will affect regional air quality issues is important.

Efforts to reduce growth in vehicle-miles traveled can help lessen the impacts of the transportation system. The overall impact of travel and transportation facilities can be reduced by measures that lessen the amount of vehicular travel on streets and highways. Steps such as telecommuting, carpooling, flexible schedules, transit, and usage of alternative modes such as bicycles and walking can contribute to this effort. MAG Region ambient air quality readings for ozone are quite close to the allowable 8-hour standard. At some point in the future, this may require the implementation of new or enhanced transportation control measures aimed at reducing precursor emissions.

- **Stationary Sources** - The location of significant stationary sources should be considered when locating new transportation corridors or expanding existing transportation facilities. The proximity of transportation sources and stationary sources may have the potential to create concentration “hot spots” that should be avoided. On the other hand, serving certain major stationary sources with adequate transportation facilities may be important to minimize impacts on surrounding communities.

Water Quality

- **Development Impacts** - In general, transportation facilities, as a component of development in the region, place an increasingly intensive burden on natural water systems. Effective design and management of this development to take into account the range of impacts it has on the environment will be vital as growth continues in the region.
- **Storm Water Runoff from Existing Facilities** - A major water quality issue affected by transportation facilities involves the storm water runoff from existing roads. Beginning in December 2007, the U.S. Environmental Protection Agency is expected to increase the enforcement of water quality standards related to storm water runoff. Runoff contains contaminants that may affect the quality of surface water and ultimately ground water. The quality of runoff from existing transportation facilities into rivers and streams represents a significant water quality issue. In addition, ground water may be affected by the retention basins associated with major freeways and highways, especially where drywells are employed.

The runoff from existing transportation facilities can be dealt with through containment and treatment, before it is allowed to enter surface streams or ground water aquifers. The primary mitigation measures for storm water runoff involve the application of best management practices to address transportation facility impacts. These best management practices include steps such as retention basins or traps for runoff that enable capture of sediments before the runoff enters natural streams or lakes. Use of screens at facility drains can catch trash and prevent it from entering natural water courses. Substitution of planted drainage channels for concrete-lined structures can improve water quality and also reduce the velocity of water that enters natural streams and lakes, reducing erosion. Best management practices need to be applied to both freeways and arterial streets, and the right-of-way needs of these measures should be taken into account when new facilities are being identified and developed.

In addition, the amount of runoff and the areas where water is concentrated can affect surrounding land uses. Storm water runoff from freeways can impact ground water quality

in adjacent areas. Best management practices should be employed to monitor and treat any runoff that may encroach into the adjacent community. In the long term, storm water should be directed away from the adjacent areas entirely.

- **Storm Water Runoff During Construction** - Storm water runoff from transportation facilities under constructions may also contain contaminants that affect surface and ground water quality. In addition, any discharge of dredge or fill materials into waters of the U.S. during construction must adhere to a series of watercourse permitting procedures administered by the U.S. Army Corp of Engineers. This includes the 404 Permit process.

During the construction of transportation facilities, measures are needed to control and/or treat storm water to meet water quality discharge standards and avoid exacerbating any existing water quality problems. The water quality impacts from storm runoff at transportation facility construction sites can be addressed through site management plans. These plans call for “Best Management Practices” that apply specific measures to limit the amount of contaminants that may be contained in the runoff from construction sites. On larger projects, this can include installation of sediment basins to ensure the quality of discharges. Measures such as street sweeping and steps to reduce track-out from construction sites can also reduce the amount of sediments in runoff from transportation facilities.

- **Disturbance of Watercourses and Wetlands** - Another effect of transportation facilities on water resources is related to the disturbance of watercourses and wetlands, impacting the ability of washes, rivers and wetlands to exist as functioning systems. Transportation structures can impede natural flow and flood patterns, which may affect surface water quality, the ground water recharge process, and riparian habitats.

The impacts of transportation facility crossings of washes, rivers and wetlands can be addressed through design practices that focus attention on keeping water courses as functional as possible. In addition to design measures, direct avoidance of sites, where possible, is another approach to limiting the impacts of transportation facilities. The trade-off between channelizing and bridging a stream, river or wetland involves both cost considerations and environmental factors. Bridging with channelization may be more attractive than bridging, alone, in terms of cost, but the environmental consequences of the former may be much more significant.

Future locations where new transportation facilities may have significant effects on water courses are in the Hassayampa Valley area and along the Gila River. In particular, this would involve an expanded transportation network to handle population growth west of the White Tank Mountains and the development of SR 801 (I-10 Reliever Freeway). New or expanded transportation facilities in both these locations will be affecting major riparian areas and their biological habitats. The crossing of the Agua Fria River delta at the Gila River will involve a number of major of 404 Permit and other environmental factors.

- **Water Conservation, Subsidence and Other Factors** - Ground water should not be used for high water using plants and water features located in publicly owned rights-of-way of highways, streets and other transportation facilities.

Subsidence due to ground water pumping can present an issue for transportation facilities, causing settling or misalignment of roadways after they are constructed. In addition other water-related sites should be avoided where possible. Examples of such sites includes water treatment plants, fresh water wells, test wells, contaminated or potentially contaminated areas (bio-soils, feed lots, superfund sites), surface water intakes, earth fissures, runoff discharges near well sites, and unique streams.

The evolving nature of data needs to be kept in mind. Features such as water tables, stream contours and water sheds can change in response to climatic trends, development and other factors.

Noise

- **Facility Mitigation** - The vehicular traffic in transportation corridors may potentially affect noise levels in areas adjacent to the corridor. Mitigation measures such as rubberized asphalt pavement overlays, noise walls, berms and depressed facilities should be considered. Also, coordination with local government planning can direct appropriate land uses to areas adjacent to major transportation facilities.

Habitat

- **Wildlife Corridors** - Wildlife movements often form corridors, and transportation facilities that cut across these corridors can interrupt normal migration patterns and jeopardize the viability of wildlife groups. Canals and railways, as well as roads, can be barriers to habitat and wildlife connectivity. Like wildlife, plant life dispersal patterns can be affected by transportation facilities, but perhaps to a lesser extent than wildlife. A wildlife corridor in general is defined as the entire habitat area including the entrance, exit, and habitat within.

As development increases along a wildlife corridor, it decreases the likelihood of travel by wildlife. Mountain ranges in general have been relatively easier to conserve due to the understanding that the species found there are specific to the montane habitat. However, now the valley bottoms between mountain ranges are becoming more important than ever. The species contained in these areas are becoming more threatened due to development and habitat fragmentation. It is important to note that even if wildlife connectivity corridors are incorporated into development patterns, it may be difficult for wildlife to find the specific corridor, because they are accustomed to traveling the entire valley bottom. One of the long term concerns is that wildlife populations will have to be artificially augmented through animal transportation to have continued genetic diversity, due to habitat fragmentation.

An effective response to this issue is to identify where wildlife corridor interruptions may occur and to provide “wildlife-friendly” crossing structures (bridges, culverts, underpasses etc.) for the involved transportation facility. Studies to determine the best habitat corridor and fencing options to funnel wildlife may be able to assist in these types of situations. Other measures include timing construction to minimize disruption of breeding seasons, and pursuing mitigation banking. Also, using existing utility corridors for roads, canals, railways, etc. can help limit the amount of disruption. The area along 51st Avenue needs a wildlife friendly crossing structure so that wildlife may travel from South Mountain to the Sierra

Estrella Mountains. It should be noted that paving existing dirt roads may tend to increase traffic volumes and speeds, increasing barrier effects to wildlife.

- **Riparian Areas** - Wildlife migration patterns form corridors that are often along riparian areas. Transportation facilities can affect the wildlife and plant life associated with rivers, streams and wetlands, in addition to the water quality. Locations such as the Salt River, Gila River, Agua Fria River, and many large washes are used by a large diversity of wildlife. A continuing effort will be required in order to preserve existent habitat in the central part of Maricopa County, as well as the habitat in the currently rural areas of the County. Providing wildlife-friendly” crossings, reducing the number of streambed crossings, and eliminating wetland intrusions can help minimize impacts. The current location of the Canamex Corridor crosses a number of major washes and will pose riparian habitat challenges.
- **Mitigation Banking** - There is a tendency for mitigation efforts to lag, and not be effective until well after construction is completed, resulting in greater impacts on habitat. Mitigation banking attempts to ameliorate this pattern by establishing new habitats, or implementing other mitigation measures at locations removed from the construction site, so that habitats will be continuously available. This helps maintain uninterrupted habitat opportunities for wildlife and lessens the impacts of new construction. The priority for mitigation banking is in a location immediately adjacent to a project, followed by locations in the same watershed, and finally “in-lieu” habitat purchases or mitigation measures in well removed locations.
- **Facility Maintenance and Surveys** - The timing of road maintenance and repairs, surveys of riparian vegetation and aquatic communities around bridge abutments, assessment of hazardous spills, and designation of critical habitat are factors of continuing interest for habitat protection as the transportation planning process proceeds.
- **Urban Heat Island** - The urban heat island effect of transportation facilities, especially heat retention by pavements, warrants consideration in assessing environmental issues related to long-range transportation planning efforts.

Natural and Historic Resource Conservation

State and local agencies were consulted regarding transportation planning issues affecting land use management, natural resources, environmental protection, conservation and historic preservation. These discussions also included the identification of key databases, conservation maps, inventories of natural or historic resources, and other information sources to utilize in the regional transportation planning process. Similar to the environmental mitigation discussions, this consultation effort was aimed primarily at identifying resource and conservation concerns that address future planning efforts and future Plan elements.

The consultation process yielded resource conservation issues and concepts in three major areas: cultural resources, natural resources, and land use patterns. The key points emerging from the discussions on these topics have been summarized below for consideration in the transportation planning process.

Cultural Resources

- **Tribal Cultural Resources** - In the transportation planning process tribal cultural resources, in particular, should be considered early and in considerable detail. This may warrant early consultation with Native American Tribes concerning facility locations, before alternatives are actually identified in detail. This may help avoid selection of a final option that has major impacts that are not discovered until construction earthwork is underway. New technologies can yield significant information that will help in the definition of alignment alternatives that have the least impact on archaeological sites. In general, riparian locations are may be closely associated with archeological sites. This will be a major factor affecting the S.R. 801 corridor.

Excavation, particularly of burial sites, is no longer considered under Section 106 of the National Historic Preservation Act, to be a “no adverse effect” mitigation measure, but rather an “adverse effect.” Therefore, the potential for new transportation facilities to intrude in such areas has taken on greater significance and warrants extensive identification and eligibility determinations before final decisions are made regarding facility locations.

- **Cultural Context** - Another factor that warrants early consideration in the transportation planning process relates to the historic and cultural context (theme, location, time period) associated with the potential location of a transportation facility. Certain locations and topographical/geological features may have particular significance to a given culture. The potential impact of transportation structures in these locations bears consideration in the planning process. This factor is particularly relevant to the S.R. 202L (South Mountain Freeway) corridor.
- **Historic Structures** - Negative impacts to historic structures, archaeological sites, and Traditional Cultural Places should be avoided where possible. Cultural features such as canals may be historic, and the impacts of new transportation facilities or facility improvements not overlooked. The structures associated with transportation facilities, in themselves, can be historic in nature, and a given route can represent an historic element in the overall history of a particular region or place. It is important to identify the key historical aspects of transportation facilities for future preservation.
- The general visual effects of transportation facilities on the surrounding community are an aspect that should not be overlooked. This may be particularly important as it relates to historic and cultural elements of the community.
- **Federal Requirements** - Some projects will involve Federal funding, land, permits, or other types of Federal involvement. These projects will need to be reviewed for impacts to cultural resources following the Section 106 process. There are Federal standards (the Secretary of Interior’s Standards) and requirements, such as tribal consultation, that will need to be followed. The Federal agency involved in the project or plan will take the lead completing this process.

- **Other Considerations** - While often not addressed in this context, bicycle and pedestrian facilities represent, in effect, important cultural resources that need to be maintained and fully taken into account in the transportation planning process.

Natural Resources

- **National Forest Areas** - Transportation facilities have high impacts on National Forest areas, potentially bringing high volumes of vehicles and people to areas that are readily affected by the accompanying air pollution, fire risk, soil erosion, damage to plants and wildlife, and other impacts. In addition, development that is adjacent to National Forest areas will place an increasing burden of users on a finite resource. Dealing with these demands, while conserving forest resources, requires a balanced approach and presents a variety of challenges.

Given their extensive impacts, new transportation corridors are a major concern for the protection of National Forest areas. Proposals for new corridors must first have a clearly defined purpose and need, as well as demonstrated benefits for Forest areas, before they can be considered for further study. The potential impacts of new transportation corridors are always accompanied by public and agency concerns over the degradation of the natural environment of Forest areas.

It is recognized that there may be a need for transportation facility operators to address safety and capacity issues related to existing highways through forest areas. This may result in the need for rock-fall prevention measures, addition of grade separations, shoulder widening or additional lanes. Assessing the potential impact of these kinds of improvements and identifying mitigation measures are a key element in the NEPA process. In addition to project-specific mitigation, there may be a need to mitigate the presence of a highway corridor, in general, through accommodations for wildlife linkages or other facility alterations.

- **Other Federal Lands** - Access to Federal lands is a major issue in the relationship between transportation and resource conservation. An effort is made to focus access to Federal lands through specific “portals” that control where people and vehicles can enter but, at the same time, provide adequate opportunities for the public to take advantage of recreational opportunities. Designated Federal Wilderness Areas may not be used for transportation purposes or developed in any other manner.

If local government land use and circulation plans result in blocking portals to Federal lands, effectively isolating the land, public access suffers. On the other hand, if major roadways run through Federal lands, it opens up the potential for vehicles to turn off and enter these areas indiscriminately. This can result in environmental damage and create other environmental issues such as dust from unauthorized off-road vehicle usage. In both cases, coordination by land use and transportation agencies is vital to reach a balance between too much and too little access. Exits from major roadways specifically to provide access to Federal lands can help address the issue. Also, integrating Federal land portals into local land use and circulation plans can help avoid isolating Federal lands and maintain public access.

The future extension of the Loop 303 corridor, enhancements to SR 238, implementation of the Wickenburg Bypass, and development of new corridors in the West Valley will potentially have major impacts on Federal lands.

Land Use Patterns

- **Open Space** - Maintaining critical open space areas should be a major factor in preparing future transportation plans, along with wildlife migratory routes between habitats. The Regional Park and Trail System warrant careful consideration as part of the transportation planning process. Maricopa County has a County Park Master Plan for the regional park system that looks out over the next 20 years. Similarly, the Maricopa Trail is an example of a resource that needs to be protected in the future. Transportation also needs to consider transportation facilities that are effective in moving people to regional park areas.
- **Sustainable Communities** - A major aspect of the land use planning/transportation planning process should be a focus on the development of sustainable communities, taking a comprehensive view of transportation trade-offs in the urban environment. The land use planning/transportation planning nexus is key in the overall effort to maintain environmental quality. Land use planning approaches that emphasize mixed use development are essential. They help increase the proximity of homes to shopping and jobs and minimize the increase in travel that accompanies population growth in the region. Developments should be planned to accommodate park-and-ride lots and other alternative mode facilities, so that their implementation is not precluded as land costs increase in the future.

At the same time, traditional activities, such as agriculture, produce complaints from nearby residents who live in neighborhoods that were constructed immediately at the boundaries of these activities. Sustaining these activities in the overall land use mix represents a major challenge.

- **Development Community** - The development community should take a pro-active role in addressing environmental issues and the impacts of development on transportation facilities and other infrastructure. Careful attention to the development process is vital to dealing with the high pace of growth in the region, and the resulting major infrastructure and environmental impacts. By working closely, at every opportunity with the development community during the land use planning process, State, regional, and local agencies can help ensure that effective infrastructure systems, including transportation facilities, are identified and integrated into development plans. This helps maintain an orderly development process and helps mitigate the regional impacts of growth.
- **Access Impacts** - Transportation facilities that lie along the border of a community may result in environmental impacts on that community, including effects on air and water quality, noise, dumping of trash, vehicle trespass, and potential effects of trucking. The commercial development that transportation facilities attract also may affect the surrounding community. These effects should be considering as part of the transportation planning process.

Planning Process Considerations

During the meetings with key agencies, the discussions often led into the area of transportation planning, in general, and how environmental and resource concerns can be effectively integrated into the planning process. The major points made in this connection, which focused on the areas of early agency involvement and planning coordination, are summarized below.

Early Involvement

- **Environmental and Resource Agencies** - Early involvement by environmental and resource agencies in planning for new transportation corridors, as well as improvements to existing facilities, is essential to ensure that workable alternatives are defined, and full consideration of required mitigation measures is properly addressed. It is especially important not to overlook the fact that the need for early involvement improvements/changes to existing transportation facilities is as important as coordination on new corridors.
- **All Project Levels** - Early involvement is not only important for major corridors, such as those developed by ADOT, but is also vital for projects constructed at the city and county level. Participation in the planning process during MAG area studies and transportation corridor studies will provide the opportunity for input before key planning decisions are made. This involvement should occur prior to implementing the NEPA process, so that key environmental and resource issues can be considered before they become large and significant. Early involvement is also important for effective identification and application of databases and other information inventories.
- **Cultural Resources** - Early consultation regarding cultural resources has become an increasingly important factor in transportation studies. It is important to consider land use, cultural, and environmental factors at the very beginning of transportation studies (including the identification of alternatives), so that significant conflicts can be noted and alternatives with high impacts can potentially be avoided, before major amounts of time and resources are invested in analysis.
- **Access Issues** - Early involvement of resource agencies in the transportation planning process can help ensure that access control issues are addressed effectively, both in terms of the location of access and the timing of access control structures. Controlling access is a key factor in limiting damage to sensitive areas, but, at the same time, adequate access is an important factor for the value of State land holdings. Features such as interchange spacing intervals along freeway/expressway routes are especially significant.

Planning Coordination

- **Corridor Level Focus** - In transportation corridor and area studies, potential environmental mitigation measures specific to each corridor alternative should be described and assessed as part of the characteristics of the corridor, rather than addressing the issue, as a whole, in the overall study process. In addition, as part of these studies it is

important to maintain the focus on issues affecting the immediate study area and avoid diverting attention to other areas or facilities.

- **Technical Committees** - MAG technical committees and working groups represent an excellent avenue for agencies to follow key issues in the region, as well as to provide information on environmental mitigation and resource conservation methods and concerns. It would be advantageous for key environmental and resource agencies to be involved in these groups.
- **Emergency Management** - Emergency evacuation routes should be a consideration in the transportation planning process. This includes the potential need for evacuation of the MAG Region, as well as handling of evacuees into the area from other parts of the country. The need to use transportation facilities for evacuation purposes also has numerous design implications, including ease of facility ingress/egress, chokepoints, and alternative routes. Emergency evacuation preparedness requires regional coordination among local entities. As transportation facilities are planned, consideration should also be given to the need for access by emergency service vehicles and accommodation of farm equipment.
- **Interregional Planning** - The central Arizona area, especially the Maricopa County and Pinal County areas, would greatly benefit from an integrated planning program. The growth in this area has become a multi-county proposition, as development patterns have extended across county boundaries. Additionally, the issue of an adequate resources base needed to deal with multi-county infrastructure needs is a growing issue. Public transit services in the MAG Region should be closely coordinated with Pinal County communities. The impact of the motor vehicle travel from this high growth area into Maricopa County is significant and needs to be addressed.
- **Public Information** - A broad range of street, highway and light rail transit improvements are being constructed in the region simultaneously. Implementing agencies should make every effort to schedule improvement projects in a way that retains alternative route options along major north-south and east-west corridors. In addition, construction activities and closures should be well-publicized in advance, allowing motorists to make efficient adjustments in their travel patterns.
- **Right-of-Way** - The potential complexities of right-of-way acquisition for future facilities should be recognized early in the planning process, so that they do not become a major barrier to effective project development later in the plan implementation process. This is particularly the case where right-of-way on allotted Indian Community land might be involved.

The State Land Department is legally prohibited from donating right-of-way for the construction of transportation facilities. Also, early transportation right-of-way sales, when prices are lower, to ensure good access to State lands in the future are problematic. The courts have held that the actual realization of increased future access and the resulting land value benefits are too uncertain to justify early sale of right-of-way.

Planning Information Sources

During the agency consultation process, discussions included the identification of key databases, conservation maps, inventories of natural or historic resources, and other information sources to utilize in the regional transportation planning process. A listing of some of the key sources identified during these discussions is provided in Appendix D.

Environmental and Resource Factors in MAG Transportation Planning

The MAG long range transportation planning process is structured to make planning decisions and prepare planning products that are sensitive to environmental mitigation and resource conservation considerations. Consultation with environmental and resource agencies on the 2007 RTP Update, which has been described in detail in this chapter, is a major element in this effort. Other key steps in the process are the involvement of environmental and resource agencies in MAG area and corridor transportation studies, and the MAG air quality conformity analysis.

Area and corridor transportation planning studies play a vital role in the overall MAG transportation planning process. These studies assess evolving transportation needs not covered by the adopted MAG RTP. They provide the opportunity to review transportation conditions in detail within a specified geographic area or modal facility system, identifying potential new RTP elements for consideration in the decision-making process. The area/corridor studies are conducted within the context of the entire regional system, so that travel demand and facility interactions throughout the region are recognized.

One of the major steps in the area/corridor study process covers the inventory of environmental and resource factors. Environmental and resource agencies are solicited for input early in the process, so that data on existing conditions can be assembled thoroughly and accurately. In addition to data collection, the process includes the identification of potential environmental, cultural and natural resource issues affecting the area or corridor under study. The information on existing conditions and potential issues provides one of the key inputs for identification of alternatives. Once alternatives have been identified, environmental and resource data and issues identified in the inventory phase are utilized as input for the development of evaluation criteria and the assessment of alternatives. This evaluation process provides valuable information on possible environmental and resource impacts and helps identify mitigation considerations connected with potential future decisions on proposed new transportation corridors or improvements to existing facilities.

Another major environmental and resource element in the MAG transportation planning process is the air quality conformity analysis of the MAG TIP and the RTP. For a finding of conformity, the analysis must demonstrate that the TIP and RTP are in conformance with regional air quality plans and will not contribute to air quality violations. In its entirety, the conformity analysis must also demonstrate that the criteria specified in the Federal transportation conformity rule for a conformity determination are satisfied by the TIP and RTP. A description of the conformity tests and results of the conformity analysis will be provided upon completion of the 2007 Conformity Analysis.

Continuing involvement of environmental and resource agencies is pursued throughout the MAG transportation planning process. This participation is aimed at early input so that environmental

mitigation and resource conservation considerations are taken into account at all key stages of the technical planning effort, as well as the decision-making process on proposed plans and programs.

SECTION TWO

TRANSPORTATION MODES

CHAPTER SEVEN

FINANCIAL PLAN

The major regional funding sources for the Regional Transportation Plan (RTP) include:

- Half-cent Sales Tax
- Arizona Department of Transportation (ADOT) Funds
- MAG Area Federal Transportation Funds

These sources are considered to be reasonably available throughout the duration of the planning period, and have had a long history of funding availability for the RTP in the past. It should also be noted that revenue projections are expressed in “Year of Expenditure” (YOE) dollars, which reflect the actual number of dollars collected/expended in a given year. Therefore, there is no correction or discounting for inflation included in Chapter Seven. The effect of inflation is accounted for separately through an allowance for inflation, which is applied in the individual modal chapters when comparing project costs and revenues.

Half-Cent Sales Tax

On November 2, 2004, the voters of Maricopa County passed Proposition 400, which authorized the continuation of the existing half-cent sales tax for transportation in the region (also known as the *Maricopa County Transportation Excise Tax*). This action provides a 20-year extension of the half-cent sales tax through calendar year 2025 to implement projects and programs identified in the MAG RTP. The previous half-cent sales tax for transportation was approved by the voters of Maricopa County in 1985 through Proposition 300, and expired on December 31, 2005. The current half-cent sales tax extension approved through Proposition 400 went into affect on January 1, 2006.

The revenues collected from the half-cent sales tax are deposited into the Regional Area Road Fund (RARF), and allocated between freeway/highway and arterial street projects; and into the Public Transportation Fund (PTF) for public transit programs and projects. These monies must be applied to projects and programs consistent with the MAG RTP. Projects and programs in the MAG RTP that are not categorized into the freeways/highways, transit, or arterial street modes have not been allocated sales tax funding. As specified in ARS 42-6105.E, 56.2 percent of all sales tax collections will be distributed to freeways and highways (RARF); 10.5 percent will be distributed to arterial street improvements (RARF); and 33.3 percent of all collections will be distributed to transit (PTF).

Table 7-1 displays the distribution of projected revenues to the RARF and the PTF, including the sub-allocation of the RARF to freeway/highway and arterial street uses. As displayed in this table, total half-cent revenues from FY 2008 through FY 2028 are projected to be approximately \$17.9 billion. Of this total, \$10.1 billion will be allocated to freeway/highway projects; \$1.9 billion to arterial street improvements; and \$6.0 billion to transit projects and programs. These figures assume renewal of the tax in January 2026.

TABLE 7-1
MARICOPA COUNTY TRANSPORTATION EXCISE TAX: FY 2008-2028
 (Year of Expenditure Dollars in Millions)

Fiscal Year	Regional Area Road Fund (RARF)		Public Transportation Fund (PTF) (33.3%)	Total
	Freeways (56.2%)	Arterial Streets (10.5%)		
2008	235.3	44.0	139.4	418.7
2009	249.9	46.7	148.1	444.6
2010	266.2	49.7	157.7	473.6
2011	284.0	53.1	168.3	505.4
2012	303.1	56.6	179.6	539.3
2013	323.9	60.5	191.9	576.3
2014	345.5	64.5	204.7	614.7
2015	368.1	68.8	218.1	655.0
2016	392.4	73.3	232.5	698.2
2017	418.9	78.3	248.2	745.4
2018	445.9	83.3	264.2	793.5
2019	475.5	88.8	281.7	846.0
2020	507.0	94.7	300.4	902.2
2021	539.9	100.9	319.9	960.6
2022	574.4	107.3	340.4	1,022.1
2023	611.9	114.3	362.6	1,088.8
2024	651.8	121.8	386.2	1,159.7
2025	694.0	129.7	411.2	1,234.8
2026	739.6	138.2	438.2	1,315.9
2027	788.1	147.3	467.0	1,402.4
2028	839.9	156.9	497.7	1,494.5
Totals	10,055.2	1,878.6	5,957.9	17,891.7

Arizona Department of Transportation Funds

ADOT relies on funding from two primary sources: the Highway User Revenue Fund (HURF) and Federal transportation funds. The HURF is comprised of funds from the gasoline and use fuel taxes, a portion of the vehicle license tax, registration fees and other miscellaneous sources.

ADOT Revenues

Of the total HURF funding, approximately 40 percent comes from the gasoline tax and another 15 percent comes from the sale of diesel fuel. The portion of the Vehicle License Tax (VLT) that flows into the HURF accounts for about 25 percent of the total HURF funds. According to the Arizona constitution, HURF funds can only be used on highways and streets, therefore, HURF funds cannot be used for transit purposes. For the purposes of revenue forecasting, total HURF funds were projected based on projected population and economic growth, assuming that there would no change in tax rates. Total HURF funds were then distributed to ADOT and the other entities based on the current statutory formula and policy.

From the ADOT HURF allocation, State statute provides that 12.6 percent of the HURF funds flowing to ADOT are earmarked for the MAG Region, and the region comprising the Pima Association of Governments (PAG), which includes metropolitan Tucson, Arizona. In addition, the State Transportation Board has established a policy that another 2.6 percent of ADOT HURF funds would be allocated to the two regions. These funds are divided into 75 percent for the MAG Region and 25 percent for the PAG Region. These funds are referred to as “15 Percent Funds.”

After the deduction of the 15 Percent Funds, ADOT must pay for operations, maintenance, and debt service on outstanding bonds. This includes funds for the Motor Vehicle Division, administration, highway maintenance and additional funding for Department of Public Safety. The remaining HURF funds are then combined with Federal highway funds to provide the basis for the ADOT Highway Construction Program. This block of funds is often referred to as “ADOT Discretionary Funds.”

ADOT Funding in the MAG Region

Table 7-2 summarizes ADOT funds applicable to projects in the MAG RTP. It is projected that a total of \$8.6 billion will be available for the construction of freeways and highways in the MAG Region between FY 2008 and FY 2028. Funding for ADOT expenses for operations and maintenance is drawn from statewide sources and is not reflected in Table 7-2.

- **15 Percent Funding** - The MAG Region receives annual funding from the Arizona Department of Transportation (ADOT) in the form of ADOT 15 Percent Funds, which are allocated from the Highway User Revenue Fund (HURF). These funds are spent for improvements on limited access facilities on the State Highway System. A total of \$3.0 billion is projected to be available from this source.
- **MAG Share of ADOT Discretionary Funds** - A 37 percent share of ADOT Discretionary Funds is targeted to the MAG Region. Arizona Revised Statute 28-304 C.1 states that the percentage of ADOT discretionary monies allocated to the MAG Region in the RTP shall not increase or decrease unless the State Transportation Board, in cooperation with the regional planning agency, agrees to change the percentage of the discretionary monies. A total of \$5.6 billion is projected to be available from this source.

MAG Area Federal Transportation Funds

In addition to the half-cent sales tax revenues and ADOT funding, a number of Federal transportation funding sources are available for use in implementing projects in the MAG RTP. These sources are discussed below and summarized in Table 7-3. It is projected that a total of \$6.3 billion will be available from this source for the construction of projects in the MAG Region between FY 2008 and FY 2028.

Federal Transit (5307) Funds

These Federal transit formula grants are available to large urban areas to fund bus purchases and

other transit capital projects. Purchases made under this program must include a 20 percent local match. This funding source is expected to generate \$1.9 billion for transit development from FY 2008 through FY 2028.

TABLE 7-2
ADOT FUNDING IN MAG AREA: FY 2008-2028
 (Year of Expenditure Dollars in Millions)

Fiscal Year	15% Funds	ADOT Discretionary	Total
2008	82.9	256.0	338.9
2009	87.2	199.6	286.8
2010	91.5	165.7	257.2
2011	96.0	185.0	281.0
2012	101.0	203.7	304.7
2013	106.2	211.8	318.0
2014	111.3	220.3	331.6
2015	116.7	229.1	345.8
2016	122.9	238.3	361.2
2017	129.3	247.8	377.1
2018	135.9	257.7	393.6
2019	143.0	268.0	411.0
2020	149.8	278.7	428.5
2021	157.6	289.9	447.5
2022	165.2	301.5	466.7
2023	173.1	313.5	486.6
2024	182.0	326.1	508.1
2025	191.3	339.1	530.4
2026	201.0	352.2	553.2
2027	210.7	365.7	576.5
2028	221.0	379.8	600.8
Totals	2,975.6	5,629.5	8,605.1

Federal Transit (5309) Funds

Transit 5309 funds are available through discretionary grants from the Federal Transit Administration (FTA), and applications are on a competitive basis. They include grants for bus transit development and “new starts” of Light Rail Transit (LRT) and other high capacity systems. Bus transit development requires a 20 percent local match, while new starts are expected to require a 50 percent local match. These funds are granted at the discretion of the FTA, following a very thorough evaluation process. Over the planning horizon, it is estimated that \$1.7 billion in 5309 funds for bus and rail transit projects will be made available to the MAG Region from the FTA. The total does not include the \$587 million in 5309 funds for the 20-mile light rail starter segment, which has already been committed to the region.

TABLE 7-3
MAG FEDERAL TRANSPORTATION FUNDS: FY 2008-2028
 (Year of Expenditure Dollars in Millions)

Year	Transit			MAG STP			MAG CMAQ						Grand Total
	5307	5309	Total	Fwy/Hwy	Arterial	Total	Fwy/Hwy	Arterial	Transit	Bk/Ped	AQ	Total	
2008	25.5	19.2	44.7	34.1	13.2	47.3	8.4	5.9	15.7	7.5	6.4	43.9	135.8
2009	27.4	20.1	47.5	34.1	13.5	47.6	8.4	5.9	15.9	7.5	6.5	44.2	139.4
2010	11.6	7.1	18.8	34.1	16.0	50.1	8.7	6.1	16.4	7.8	6.7	45.7	114.6
2011	43.6	66.3	110.0	34.1	17.8	51.9	9.0	6.3	17.0	8.1	6.9	47.3	209.2
2012	46.6	95.2	141.8	34.1	19.6	53.7	9.4	6.6	17.6	8.3	7.2	49.1	244.6
2013	60.7	98.3	159.1	34.1	21.3	55.4	9.7	6.8	18.2	8.6	7.4	50.7	265.2
2014	64.7	101.6	166.3	34.1	23.1	57.2	10.0	7.0	18.9	8.9	7.7	52.5	276.0
2015	69.0	104.9	173.9	34.1	24.9	59.0	10.4	7.3	19.5	9.2	7.9	54.3	287.2
2016	73.5	108.4	181.8	12.7	48.1	60.8	10.7	7.5	20.2	9.6	8.2	56.2	298.8
2017	78.3	111.9	190.2		62.9	62.9	11.1	7.8	20.9	9.9	8.5	58.2	311.3
2018	83.4	115.6	199.0		65.1	65.1	11.5	8.1	21.6	10.2	8.8	60.2	324.3
2019	88.8	94.1	183.0		67.4	67.4	11.9	8.4	22.4	10.6	9.1	62.4	312.7
2020	94.6	13.7	108.3		69.8	69.8	12.3	8.6	23.2	11	9.4	64.5	242.6
2021	100.7	34.2	134.9		72.2	72.2	12.8	9.0	24.0	11.4	9.8	67.0	274.1
2022	107.2	131.5	238.8		74.7	74.7	13.2	9.3	24.8	11.8	10.1	69.2	382.7
2023	128.9	135.9	264.8		77.3	77.3	13.7	9.6	25.7	12.2	10.4	71.6	413.7
2024	137.2	176.5	313.7		80.0	80.0	14.1	9.9	26.6	12.6	10.8	74.0	467.7
2025	145.9	66.7	212.7		82.9	82.9	14.6	10.3	27.5	13	11.2	76.6	372.1
2026	154.8	69.1	224.0		85.8	85.8	15.2	10.6	28.5	13.5	11.6	79.4	389.1
2027	164.3	71.4	235.7		88.6	88.6	15.7	11.0	29.5	14.0	12.0	82.1	406.3
2028	174.3	73.7	248.0		91.5	91.5	16.3	11.3	30.5	14.4	12.4	84.9	424.4
Totals	1,881.1	1,715.7	3,596.8	285.5	1,115.7	1,401.2	247.1	173.3	464.5	220.1	189.0	1,294.0	6,291.9

Federal Highway (MAG STP) Funds

MAG Surface Transportation Program (STP) funds are the most flexible Federal transportation funds and may be used for highways, transit or streets. Approximately \$1.4 billion will be available from STP funds for projects during the period from FY 2008 through FY 2028. This amount includes \$34.1 million per year that has been allocated through FY 2015 to retire debt related to the completion of the Proposition 300 program. These funds are passed through to ADOT.

Federal Highway (MAG CMAQ) Funds

MAG Congestion Mitigation and Air Quality (CMAQ) funds are available for projects that improve air quality in areas that do not meet clean air standards (“non-attainment” areas). Projects may include a wide variety of highway, transit and alternate mode projects that contribute to improved air quality. While they are allocated to the State, Arizona’s funds have been dedicated entirely to the MAG Region, due to the high congestion levels and major air quality issues in the region. They are projected to generate \$1.3 billion from FY 2008 through FY 2028.

Statewide Transportation Acceleration Needs (STAN) Account

As part of the budget packet in the Spring 2006 Session, the Legislature passed and the Governor signed HB 2865 which included the creation of the Statewide Transportation Acceleration Needs (STAN) Account. MAG’s share of the \$307 million is \$184.2 million. Interest earnings of approximately \$9.2 million are also anticipated, so that a total of \$193.5 million will be applied to projects in the MAG area. The key features of STAN funding include:

- A total of \$307 million is set up within a separate fund that will be available to accelerate the construction or reconstruction of freeways, State highways, bridges and interchanges that are included in the State Highway System.
- Monies in the STAN account will be used to supplement not supplant current funding.
- Maricopa County receives 60 percent of the revenues, Pima County receives 16 percent, and the other thirteen counties in Arizona receive 24 percent.
- STAN monies may only be used for: (1) material and labor, (2) acquisition of rights-of-way for highway needs, (3) design and other engineering services, and (4) other directly related costs approved by the State Transportation Board.
- The appropriate Regional Planning Agency is required to establish a process to review and approve transportation projects eligible to receive STAN monies.
- After discussion and approval of the projects by the Regional Planning Agency, the agency will submit the list to the State Transportation board for their approval.

- The Regional Planning Agency that receives monies from the STAN account must report on or before December 15, 2006 to the House and Senate Transportation Committees on approved projects and the money spent on these projects.

Regional Revenue Summary

Regional revenue sources for the MAG RTP between FY 2008 and FY 2028 are summarized in Table 7-4 and include: the Proposition 400 half-cent sales tax extension (\$17.9 billion); ADOT funds (\$8.6 billion); STAN Funds (\$194 million); Federal Transit (5307) funds (\$1.9 billion); Federal Transit (5309) funds (\$1.7 billion); Federal Highway Surface Transportation Program (STP) funds (\$1.4 billion); and Federal Highway Congestion Mitigation and Air Quality (CMAQ) funds (\$1.3 billion). The total of all these revenue sources is projected to amount to \$33.0 billion between FY 2008 and FY 2028.

Table 7-4 also indicates the distribution of regional revenues among the transportation modes and programs covered by the RTP. This funding is consistent with the allocation of revenues originally adopted by MAG in November 2003, as part of the major plan update that was prepared prior to the vote on Proposition 400. At that time, modal funding levels were established after the facility planning process was completed, and reflected project needs determined through the technical planning process. In addition, the distribution of regional revenues takes into account Federal and State restrictions on how individual funding sources may be applied to specific program areas. Table 7-5 displays the allocation of regional revenues in terms of percentages applied to each program area by funding source.

As indicated previously, the regional revenue forecasts are presented in terms of “Year of Expenditure” (YOE) dollars. YOE dollars reflect the actual number of dollars collected/expended in a given year, with no correction or discounting for inflation. An allowance for inflation is applied separately in each modal chapter as part of the assessment of costs and revenues. Similarly, specific assumptions regarding bonding or other debt financing are discussed individually in each modal chapter.

In addition to the regional level sources summarized in Tables 7-4 and 7-5, the implementation of the RTP is accomplished through local funds and other State revenues. Local resources provide matching monies for capital projects in the Arterial Street Program and Light Rail Transit Program; subsidize certain transit operating costs; and, in the form of transit farebox monies, contribute significant funding for transit operations. Local and private sources also provide funding for the expansion of street and transit networks throughout the region in parallel with new residential and commercial development. Other State revenues provide funding for the routine maintenance and operation of the regional freeway/highway system, as well as the pavement preservation program. Since local funds and other State revenue sources are generally program specific, they are identified in the individual modal chapters.

It should be noted that the allocation of regional funding sources between bus transit and light rail transit has undergone a revision, which is reflected in Table 7-4 and Table 7-5. These funding adjustments do not change the total regional funding dedicated to the transit mode, and are revenue neutral for the bus and light rail programs. The funding changes were implemented to provide for the more efficient use of Federal CMAQ funds and to adjust for changes in the development of the

LRT Northwest Extension, which will be implemented in two phases instead of a single project. The first phase from will be from 19th Ave./Bethany Home Road to Dunlap Avenue (completion in 2012), and the second phase will be from Dunlap Avenue to 25th Avenue/Mountain View Road (completion 2017). A portion of the Federal CMAQ funding for transit has been shifted from light rail to bus, freeing up local funds that would have gone toward CMAQ eligible bus projects. This will allow these funds to be used on the construction of the first phase of the Northwest Extension.

TABLE 7-4
SOURCES AND DISTRIBUTION OF REGIONAL REVENUES: FY 2008-2028
 (Year of Expenditure Dollars in Millions)

Sources	Uses						Total
	Highways/ Freeways	Arterial Streets	Bus Transit	Light Rail Transit	Bicycle/ Ped.	Air Quality	
Proposition 400: Half Cent Sales Tax Extension (RARF)	10,055.1	1,878.6	3,381.5	2,576.4			17,891.7
ADOT Funds (Includes HURF and Federal)	8,605.1						8,605.1
STAN Funds	193.5						193.5
Federal Transit (5307 Funds)			1,881.1				1,881.1
Federal Transit (5309 Funds)			291.9	1,423.8			1,715.7
Federal Highway (MAG STP)	285.5	1,115.7					1,401.2
Federal Highway (MAG CMAQ)	247.1	173.3	39.1	425.4	220.1	189.0	1,294.0
Total	19,386.3	3,167.6	5,593.6	4,425.6	220.1	189.0	32,982.3

TABLE 7-5
PERCENTAGE DISTRIBUTION OF REGIONAL REVENUES: FY 2008-2028
 (Percentage of Funding Source Total)

Sources	Uses						Total
	Highways/ Freeways	Arterial Streets	Bus Transit	Light Rail Transit	Bicycle/ Ped.	Air Quality	
Proposition 400: Half Cent Sales Tax Extension (RARF)	56.2%	10.5%	18.9%	14.4%			100.0%
ADOT Funds (Includes HURF and Federal)	100.0%						100.0%
STAN (Funds)	100.0%						100.0%
Federal Transit (5307 Funds)			100.0%				100.0%
Federal Transit (5309 Funds)			17.0%	83.0%			100.0%
Federal Highway (MAG STP)	20.4%	79.6%					100.0%
Federal Highway (MAG CMAQ)	19.1%	13.4%	3.0%	32.9%	17.0%	14.6%	100.0%
Total	58.8%	9.6%	17.0%	13.4%	0.7%	0.6%	100.0%

CHAPTER EIGHT

FREEWAYS AND HIGHWAYS

The freeway/highway system in the MAG Region represents one of the major elements in the Regional Transportation Plan (RTP). The RTP calls for new freeway/highway corridors, as well as added travel lanes on existing facilities. In addition, a series of new interchanges with arterial streets on existing freeways, along with direct connections between HOV lanes at freeway-to-freeway interchanges, are included. The RTP also provides regional funding for maintenance on the freeway system, directed at litter pickup and landscaping (including landscape restoration). The need to keep traffic flowing smoothly is addressed through funding identified for freeway management functions.

Current Freeway/Highway System

The freeway/highway system currently serving the MAG Region is shown in Figure 8-1, as modeled for 2006. This system includes routes on the Interstate System, urban freeways and highways, and rural highway mileage. All the facilities in this system are on the State Highway System, which is constructed, maintained and operated by the Arizona Department of Transportation (ADOT). Table 8-1 lists the centerline mileages in this system in the MAG area (i.e., within Maricopa County) by route. A total of 615 existing centerline miles are included in the freeway/highway network, and an additional 98 miles are planned for future development during the planning period. Of the existing 615 miles, 263 miles are currently urban in character, whereas 352 miles are situated in rural areas of the region.

Planned Freeway/Highway Corridors and Improvements

The Freeway/Highway Element of the RTP includes both new facilities and improvements to the existing system. Operation and maintenance of the system are also addressed. Projects include new freeway corridors, additional lanes on existing facilities, new interchanges at arterial cross streets, High Occupancy Vehicle (HOV) ramps at system interchanges, and maintenance and operations programs. The projected configuration of the future freeway/highway network in 2028 is depicted in Figure 8-2. The improvements planned for the system, including both new freeway corridors and improvements to existing freeway and highway facilities, are shown in Figure 8-3. A detailed listing of the specific projects covered by these improvements is provided in Appendix A and constitutes the ADOT Freeway/Highway Life Cycle Program.

New Corridors

The new freeway/highway corridors in the RTP include, the South Mountain Freeway (202L), the Loop 303, the I-10 Reliever (SR 801), and the Williams Gateway Freeway (SR 802). A segment of the Sky Harbor Expressway (SR 153) is also covered in this group. In addition, right-of-way protection (only) for 303L (south of the I-10 Reliever) and State Route 74 (SR 74) are also included. The amount programmed in the RTP for new corridors totals \$4.0 billion (2007 \$'s).

2007 Update Regional Transportation Plan

Fig. 8-1



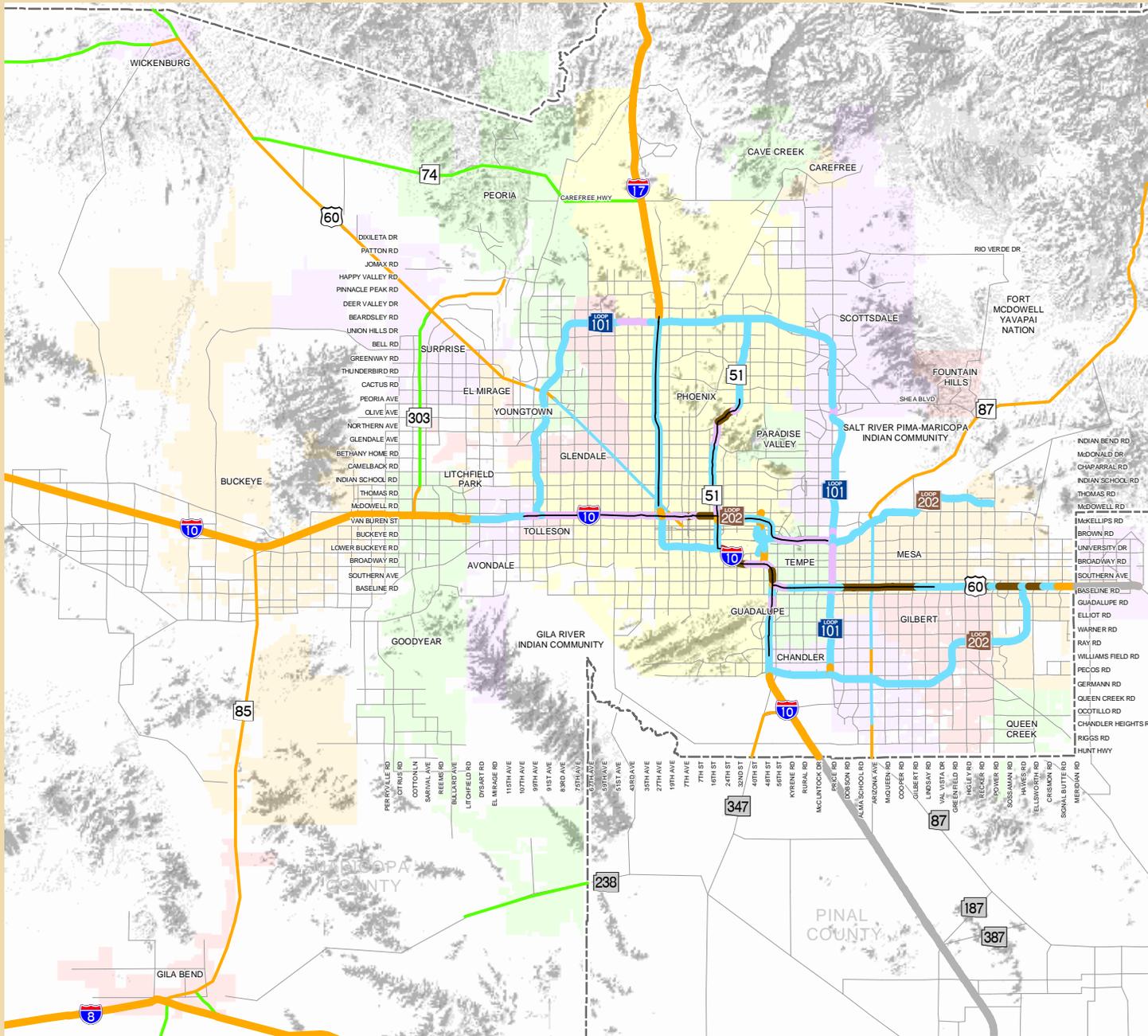
2006 Freeway/Highway System Number of Lanes

Freeway lanes are represented with thicker lines

- 2 General Use Lanes
- 4 General Use Lanes
- 6 General Use Lanes
- 8 General Use Lanes
- 10 General Use Lanes
- 12 General Use Lanes
- High Occupancy Vehicle (HOV) Lanes*
- County Boundary
- Other Roads

*The HOV line represents 1 lane in each direction

Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.



**TABLE 8-1
FREEWAY/HIGHWAY MILEAGES IN THE MAG AREA**

Route No.	Facility	Centerline Mileage			Route No.	Facility	Centerline Mileage		
		Existing	Planned	Total			Existing	Planned	Total
I-8	Interstate 8				US 60	Superstition Freeway			
	Yuma County to SR 85	37	--	37		I-10 to 101L (Price)	5	--	5
	SR 85 to Pinal Co. Line	31	--	31		101L (Price) to SR 87	4	--	4
	Sub-total I-8	68	--	68		SR 87 to 202L (Red Mtn./Santan)	12	--	12
						202L (Red Mtn./Santan) to Pinal Co. Line	3	--	3
I-10	Interstate 10					Sub-total Superstition	24	--	24
	Yuma Co. Line to SR 85	42	--	42					
	SR 85 to 303L	12	--	12	SR 71	State Route 71			
	303L to 101L	11	--	11		US 60 to Yavapai Co. Line	5	--	5
	101L to I-17	7	--	7		Sub-total SR 71	5	--	5
	I-17 to SR 51	5	--	5					
	SR 51 to I-17	3	--	3	SR 74	State Route 74			
	I-17 to US 60	6	--	6		US 60 (Grand) to 303L	25	--	25
	US 60 to 202L (Santan)	6	--	6		303L to I-17	6	--	6
	202L (Santan) to Pinal Co. Line	7	--	7		Sub-total SR 74	31	--	31
	Sub-total I-10	99	--	99					
					SR 85	State Route 85			
I-17	Interstate 17					Pima Co. Line to I-8	32	--	32
	I-10 (East) to I-10 (West)	7	--	7		I-8 to I-10	37	--	37
	I-10 (West) to 101L (Agua Fria/Pima)	14	--	14		Sub-total SR 85	69	--	69
	101L (Pima) to New River Rd.	17	--	17					
	New River Rd. to Yavapai Co. Line	10	--	10	SR 87	Beeline Highway			
	Sub-total I-17	48	--	48		Pinal Co. Line to 202L (Santan)	5	--	5
						202L (Santan) to US 60 (Superstition)	8	--	8
SR 51	Piestewa Freeway					US 60 (Superstition) to 202L (Red Mtn.)	4	--	4
	202L (Red Mtn.) to 101L (Pima)	16	--	16		202L (Red Mtn.) to Gila Co. Line	46	--	46
	Sub-total SR 51	16	--	16		Sub-total SR 87	63	--	63
US 60	Aguila Highway				SR 88	State Route 88			
	La Paz County to US 93	31	--	31		Pinal Co. Line to Gila Co. Line	33	--	33
	Sub-total Aguila	31	--	31		Sub-total SR 88	33	--	33
US 60	Grand Avenue				US 93	State Route 93			
	US 93 to SR 74	10	--	10		Wickenburg Bypass	--	1	1
	SR 74 to 303L	18	--	18		Wickenbury Bypass to Yavapai Co. Line	3	--	3
	303L to 101L (Agua Fria)	10	--	10		Sub-total US 93	3	1	4
	101L (Agua Fria) to Van Buren St	11	--	11					
	Sub-total Grand	49	--	49					

Table 8-1 Freeway/Highway Mileages in the MAG Area (Continued)

Route No.	Facility	Centerline Mileage			Route No.	Facility	Centerline Mileage		
		Existing	Planned	Total			Existing	Planned	Total
101L	Agua Fria Freeway				SR 238	Mobile Highway			
	I-10 to US 60 (Grand)	10	--	10		Mobile to Pinal Co. Line	4	--	4
	US 60 (Grand) to I-17	12	--	12		Sub-total SR 238	4	--	4
	Sub-total Agua Fria	22	--	22					
101L	Pima Freeway				303L	Estrella Freeway			
	I-17 to SR 51	7	--	7		SR 801 to I-10	--	5	5
	SR 51 to 202L (Red Mtn.)	21	--	21		I-10 to US 60 (Grand)	--	15	15
	Sub-total Pima	28	--	28		US 60 (Grand) to I-17	--	18	18
						Sub-total 303L	--	38	38
101L	Price Freeway				SR 347	Maricopa Road			
	202L (Red Mtn.) to US 60 (Superstition)	4	--	4		Pinal Co. Line to I-10	6	--	6
	US 60 (Superstition) to 202L (Santan)	6	--	6		Sub-total SR 347	6	--	6
	Sub-total Price	10	--	10					
SR 143	Hohokam Expressway				SR 801	I-10 Reliever			
	I-10 to 202L (Red Mtn.)	3	--	3		SR 85 to 303L	--	11	11
	202L (Red Mtn.) to McDowell Rd.	1	--	1		303L to 202L/South Mtn.	--	13	13
	Sub-total SR 143	4	--	4		Sub-total SR 801	--	24	24
SR 153	Sky Harbor Expressway				SR 802	Williams Gateway Freeway			
	Superior Ave. to University Dr.	--	1	1		202L (Santan) to Pinal Co. Line	--	5	5
	University Dr. to Washington Blvd.	2	--	2		Sub-total SR 802	--	5	5
	Sub-total SR 153	2	1	3					
						Regional Totals	615	98	713
202L	Red Mountain Freeway								
	I-10/SR 51 to 101L (Pima)	9	--	9					
	101L (Pima) to US 60 (Superstition)	15	7	22					
	Sub-total Red Mountain	24	7	31					
202L	Santan Freeway								
	US 60 (Superstition) to SR 87	17	--	17					
	SR 87 to 101L (Price)	4	--	4					
	101L (Price) to I-10	4	--	4					
	Sub-total Santan	25	--	25					
202L	South Mountain Freeway								
	I-10 (East) to SR 801	--	17	17					
	SR 801 to I-10 (West)	--	5	5					
	Sub-total South Mountain	--	22	22					

2007 Update Regional Transportation Plan

Fig. 8-2



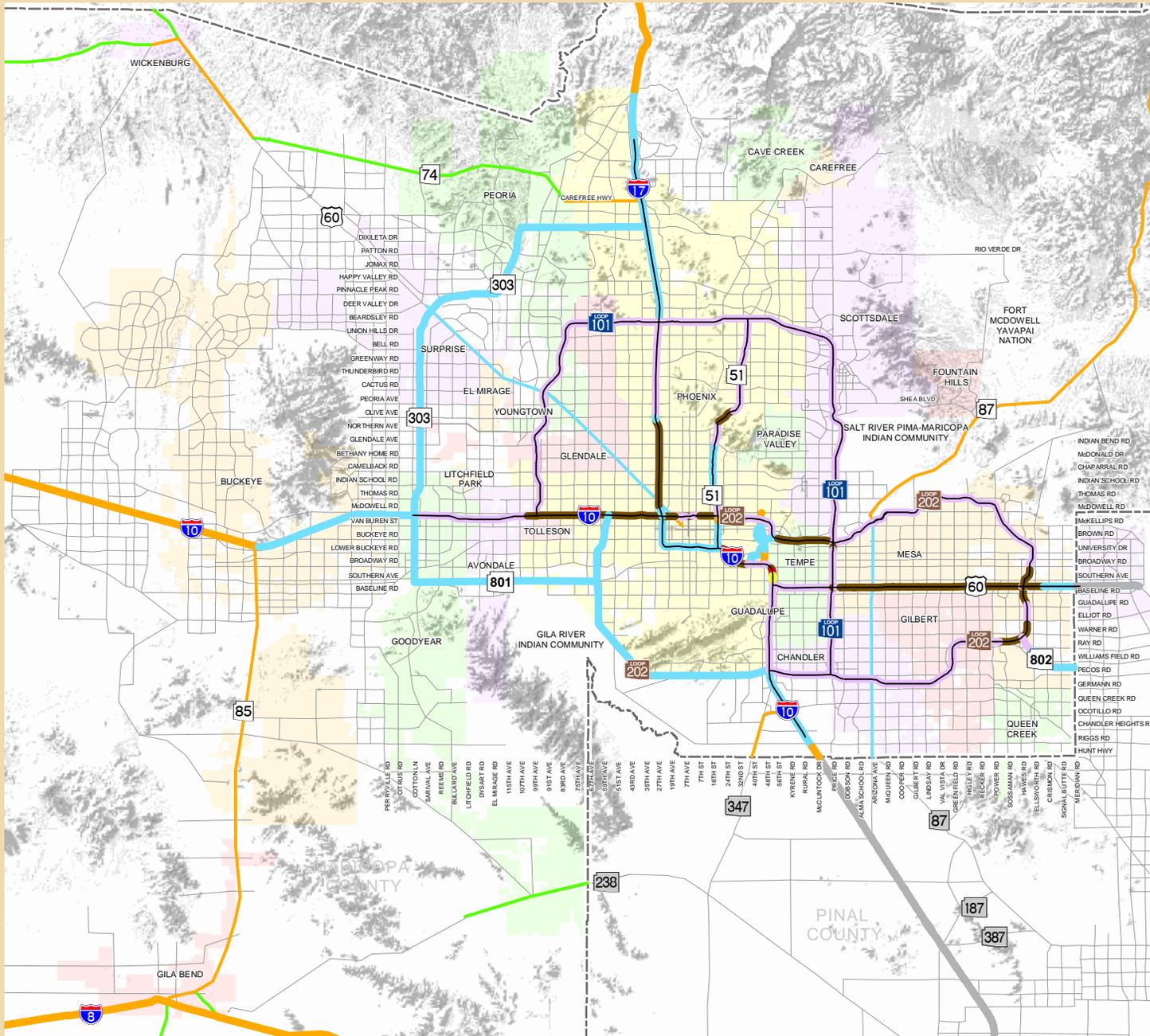
2028 Freeway/Highway System Number of Lanes

Freeway lanes are represented with thicker lines

- 2 General Use Lanes
- 4 General Use Lanes
- 6 General Use Lanes
- 8 General Use Lanes
- 10 General Use Lanes
- 12 General Use Lanes
- 14 General Use Lanes
- High Occupancy Vehicle Lanes
- County Boundary
- Other Roads

*The HOV line represents 1 lane in each direction

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2007 Update Regional Transportation Plan Fig. 8-3



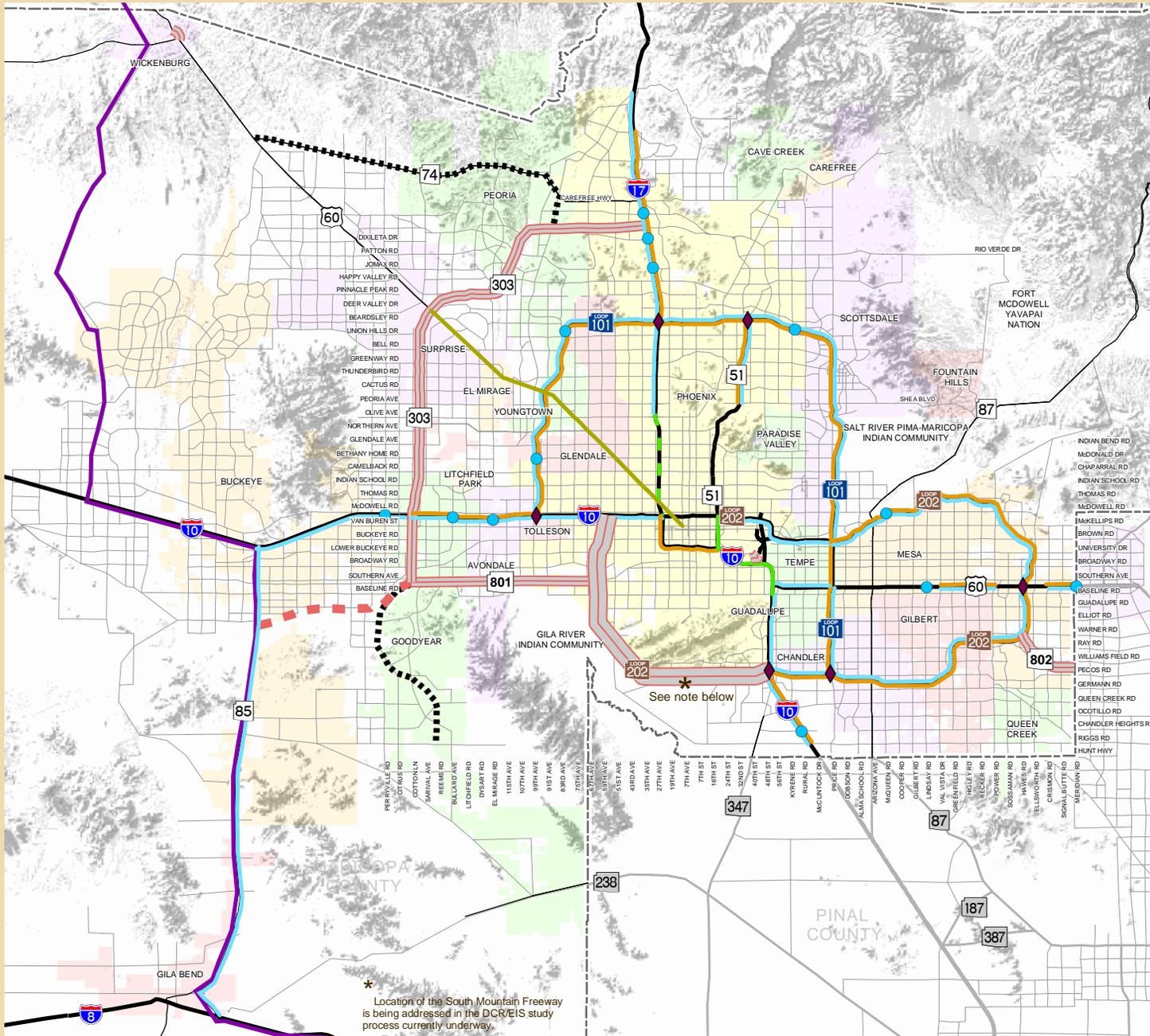
Planned Freeway/Highway Improvements

- New Traffic Interchange
- ◆ New High Occupancy Vehicle Ramp Connection
- Grand Avenue Corridor Improvements
- New High Occupancy Vehicle Lanes
- New General Purpose Lanes
- Corridor Capacity Improvements
- Long Term Capacity Improvements
- New Freeway/Highway Construction
- - - Interim Corridor Development
- Proposed CANAMEX Corridor
- - - Right of Way Preservation
- - - County Boundary
- Existing Freeway
- Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.



MARICOPA COUNTY



* Location of the South Mountain Freeway is being addressed in the DCR/EIS study process currently underway.

While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.



Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).

- **SR 153 (Sky Harbor Expressway)** - The existing portion of the Sky Harbor Expressway generally falls along a 44th Street alignment between Washington Boulevard and University Drive, and was completed as part of the Proposition 300 Freeway Program. The final phase of this project is an extension to Superior Avenue at 40th Street, providing a connection to the I-10/40th Street interchange. The Sky Harbor Expressway is currently under study to determine if the extension to Superior Ave./40th St. is still needed from a regional perspective, given the other improvements around Sky Harbor International Airport and the planned I-10 Collector-Distributor (C-D) system. Any recommendation to change or delete the last segment of the Sky Harbor Expressway will undergo the review and approval process required for a Major Amendment to the RTP, as outlined in A.R.S. 28-6353 (E).
- **202L (South Mountain Freeway)** - The South Mountain Freeway is planned to loop south of the central area of the region, connecting the western terminus of the Santan Freeway at I-10 (the Maricopa Freeway) with I-10 (the Papago Freeway) in the West Valley. The RTP programs funds through the end of FY 2015 for construction of a full six-lane freeway between I-10 (west) and I-10 (east). A Design Concept Report (DCR) and an Environmental Impact Statement (EIS) are currently proceeding on the South Mountain Freeway corridor. A U.S. Department of Transportation “Record-of-Decision” on the recommended alternative for the corridor is expected by the end of calendar year 2007.
- **Loop 303** - The Loop 303 Freeway is planned to extend west from I-17 at Lone Mountain Road, traversing southwest to Grand Avenue and running south in the vicinity of Cotton Lane to I-10, and then terminating at MC 85 (Buckeye Road). Through the end of FY 2015, the RTP provides funding for the construction of a full six-lane freeway between I-10 and I-17. Funding for construction of the segment between I-10 and MC 85 has been programmed in FY 2019 and FY 2020. An interim facility has been constructed between Grand Avenue and Happy Valley Road by Maricopa County, and full freeway right-of-way has also been acquired along most of this segment. DCRs and Environmental Assessments (EAs) are proceeding on the Loop 303 corridor. This includes the segment between I-10 and Grand Avenue (US 60), and the segment between Happy Valley Road and I-17. Initial design work on these segments began in FY 2006. Preliminary engineering and environmental analysis for the segment between I-10 and Buckeye Road began in FY 2006.
- **SR 801 (I-10 Reliever)** - The I-10 Reliever (SR 801) is planned as an east-west facility south of I-10 connecting the South Mountain Freeway (202L) and SR 85. In the RTP, the route is funded for construction as a six-lane freeway between 202L and 303L; and as a two-lane roadway, with right-of-way preservation for a freeway facility, between 303L and SR 85. Funding for construction of the facility has been programmed for the period FY 2023 through FY 2025. Preliminary engineering and environmental analysis for the segment between 202L and 303L began in FY 2006. Preliminary engineering and environmental analysis for the segment between 303L and SR 85 will begin in FY 2007.
- **SR 802 (Williams Gateway Freeway)** - The Williams Gateway Freeway is planned as a six-lane facility extending from 202L south to the Williams Gateway Airport, and east to the Pinal County line. In the RTP, funding for construction of the facility has been programmed for FY 2016 and FY 2020. In FY 2006, a preferred location for this facility

within Maricopa County was adopted by MAG. Preliminary engineering and environmental analysis by ADOT will begin in FY 2007.

- **Other Right-of-Way Protection on SR 74 and 303L (Buckeye Road to Riggs Road) -** Funding is included in the RTP for right-of-way protection on SR 74. This action is needed in order to protect the corridor from encroaching residential, industrial and commercial development activities. Funding for right-of-way is also identified for 303L (MC 85 to Riggs Road) in later years. The precise alignment for 303L south of MC 85 has not yet been defined.

Widen Existing Facilities: General Purpose Lanes and HOV Lanes

In addition to new corridors, the RTP calls for additional general purpose and new High Occupancy Vehicle (HOV) lanes that will be added to the regional freeway/highway system. This includes additional lanes on I-10, I-17, 101L (the Agua Fria, Pima and Price Freeways), 202L (the Red Mountain and Santan freeways), State Route 51 (Piestewa Freeway), State Route 85, and on US 60 (Grand Avenue and the Superstition Freeway). The amount identified in the RTP for adding general purpose lanes and HOV lanes totals \$4.4 billion (2007 \$'s).

- **I-10 -** The RTP calls for the addition of general purpose lanes along essentially the entire length of I-10, between State Route 85 on the west and Riggs Road on the east (no additional lanes are planned between I-17 and SR 51). HOV lanes are also added along several segments to provide continuous HOV service on I-10, between 303L on the west and Riggs Road on the east. Improvements are generally scheduled to start in the central area of the region, from FY 2006 through FY 2010, and extend to other areas of the region through FY 2023.

A DCR/EIS is proceeding on a collector/distributor system that would ease congestion on I-10 between State Route 51 and Baseline Road. Preliminary engineering and environmental analyses for general purpose lanes and HOV lanes on the segment between 101L (Agua Fria) and SR 85 are also underway. Widening between 101L and Sarival Avenue has been programmed from FY 2007 through FY 2009 and final design work is underway. The segment had been previously programmed for final construction in FY 2014 but has been accelerated through Grant Anticipation Notes (GANS) and the Arizona Highway Expansion and Extension Loan Program (HELP). In addition, the construction of one additional general purpose lane in each direction between Verrado Way and Sarival Avenue has been accelerated to FY 2009 from FY 2023, using STAN funding.

Preliminary analysis for general purpose lanes on the segment of I-10 between I-17 and 101L (Agua Fria) began in FY 2006. More detailed studies will proceed pending the resolution of the South Mountain Freeway alignment and the location of future Light Rail Transit facilities in the corridor. Preliminary engineering and environmental analysis are currently proceeding for the design and construction of both general purpose and HOV lanes between 202L (Santan Freeway) and Riggs Road.

- **I-17 -** The RTP includes construction of additional general purpose lanes on I-17 between McDowell Road on the south and New River Road on the north. HOV lanes are also

being added to fill gaps, and to extend the HOV system along I-17 from I-10 at Sky Harbor to Anthem Way. Improvements are programmed through FY 2024. A DCR and an Environmental Assessment (EA) have been completed for the segment between 101L and the Carefree Highway. Final design work on this segment is also nearing completion, and the construction of both general purpose and HOV lanes on this segment will go to bid in FY 2007. In addition, the construction of one additional general purpose lane in each direction between Carefree Highway and Anthem Way has been accelerated to FY 2009 from FY 2024, using funding from the STAN account.

- **SR 51 (Piestewa Freeway)** - The RTP includes construction of additional general purpose and HOV lanes on SR 51 between Shea Boulevard and 101L. The HOV improvements are called for first, with funding for the general purpose lanes scheduled after FY 2021. The HOV project has been programmed in FY 2007 for construction. A DCR and EA covering the addition of HOV lanes between 101L and Shea Boulevard has been completed. Final design work on this segment is also nearing completion, which includes HOV ramps to the east at the system interchange between SR 51 and 101L. Preliminary engineering and environmental analysis for the addition of general purpose lanes on SR 51 will begin after FY 2015.
- **US 60 (Grand Avenue)** - The RTP identifies a series of improvement projects along various segments of Grand Avenue between 303L and McDowell Road, including the addition of general purpose lanes, grade separations and other improvements. The implementation of these projects will span the planning period. Preliminary engineering and environmental analysis for the addition of general purpose lanes between 303L and 101L began in FY 2006, with construction programmed in FY 2009. Preliminary engineering and environmental analysis for corridor improvement projects between 101L and McDowell Road will begin in FY 2008, with construction programmed in FY 2010. Preliminary engineering and environmental analysis for the remainder of the projects projected for Grand Avenue between 303L and McDowell Road will begin after FY 2011.
- **US 60 (Superstition Freeway)** - The RTP includes widening projects along several segments of the Superstition Freeway, providing a combination of additional general purpose and HOV lanes. These projects will increase general purpose lane capacity along certain segments and provide continuous HOV lane service between I-10 and 202L by FY 2007, and to Meridian Road by FY 2020. Construction on the addition of both general purpose and HOV lanes from Gilbert Road to Power Road is underway, and will be opened to traffic in mid-2007. Preliminary engineering and environmental analysis for the addition of general purpose lanes between I-10 and 101L will begin in FY 2008, with funding for construction programmed in FY 2011. Construction of the westbound element of this project may be coordinated with the I-10 collector/distributor project. Preliminary engineering and environmental analysis for the addition of general purpose lanes and HOV lanes between Crismon Road and Meridan Road will begin after FY 2011.
- **SR 74** - The RTP programs funding in FY 2008 and FY 2010 for adding passing lanes at strategic locations along SR 74.

- **SR 85** - The RTP calls for widening SR 85 to a four-lane, divided roadway between I-10 and I-8. Construction work on widening SR 85 to a four-lane, divided roadway between I-10 and Gila Bend is currently underway, with the final project scheduled to go to bid in FY 2010.
- **US 93 (Wickenburg Bypass)** - An interim bypass of the downtown Wickenburg area is being implemented to provide congestion relief until the final US 93 bypass can be funded and constructed. This project is scheduled to go to bid in FY 2007.
- **101L (Agua Fria, Pima, and Price Freeways)** - The RTP programs construction of additional general purpose lanes and HOV lanes along most of the length of 101L throughout the planning period. Only additional general HOV lanes are planned between the Red Mountain Freeway and Baseline Road. The early focus of the improvements is on additional HOV lanes, with general purpose lanes scheduled after FY 2011.

A DCR and EA covering the addition of HOV lanes between Princess Drive and 202L (Red Mountain Fwy.) are completed. Final design work on this segment is also underway and the project is schedule to go to bid in FY 2007. Construction of HOV lanes between Princess Drive and Tatum Boulevard has been accelerated to FY 2008 from FY 2011, using funding from the STAN account. Preliminary engineering and environmental analysis for the addition of HOV lanes between 202L (Red Mountain) and 202L (Santan Freeway) is nearing completion. Final design work on the segment between the Red Mountain Freeway and Baseline Road is also underway and the project will go to bid in FY 2008. Construction of HOV lanes between Baseline Road and the Santan Freeway has been accelerated to FY 2008 from FY 2010, using funding from the STAN account.

Preliminary engineering and environmental analysis for the addition of general purpose and HOV lanes on the remainder of the Pima and Price Freeways, and on the Agua Fria Freeway will begin after FY 2011.

- **SR 143 (Hohokam Expressway)** - Improvements to SR 143 that would provide better access to and from Sky Harbor Airport are being analyzed. Funding for these improvements potentially would be shifted to SR 143 from SR 153 (Sky Harbor Expressway). This funding would become available if it is determined that the extension of SR 153 to Superior Avenue at 40th Street, which was included in the 2006 Update of the RTP, is no longer warranted from a regional perspective. Any recommendation to shift funding will undergo the review and approval process required for a Major Amendment to the RTP, as outlined in A.R.S. 28-6353 (E).
- **202L (Red Mountain and Santan Freeways)** - The RTP programs construction of additional general purpose and HOV lanes along essentially the entire length of 202L. This excludes the portion of 202L covered by the South Mountain Freeway, which will be constructed as a new corridor during the planning period. Generally, the construction of HOV lanes has been scheduled before the addition of general purpose lanes, with the major portion of new general purpose lanes scheduled after FY 2021. However, the segment of 202L from State Route 51 to 101L is scheduled for additional general purpose lanes between FY 2009 to FY 2012. This segment of 202L already has HOV lanes. Preliminary engineering and environmental analysis is underway for HOV lanes between 101L and

Gilbert Road and the project is scheduled to go to bid in FY 2009. Preliminary engineering and environmental analysis for the addition of general purpose and HOV lanes on the remainder of the Red Mountain and Santan Freeways will begin after FY 2011.

New Interchanges and New HOV Ramps on Existing Facilities

In addition to new corridors and additional travel lanes, the RTP call for a series of new interchanges on existing freeways at arterial street crossings, as well as improvements at freeway-to-freeway interchanges to provide direct connections between HOV lanes. The amount identified in the RTP for new interchanges and new HOV ramps on existing freeway facilities totals \$282.1 million (2007 \$'s).

- **New Interchanges on Existing Freeways at Arterial Streets** - The RTP identifies a total of thirteen new interchanges to be constructed on existing freeways at arterial street crossings. These projects fall along most of the major segments of the regional freeway system, including I-10, I-17, 101L, 202L, and US 60 (Superstition Freeway). The implementation of these new interchanges is phased over the entire planning period. Preliminary engineering and environmental analysis for new interchanges programmed for construction during the next five years have been completed. Final design work is also nearing completion on several of these projects and design work on others is scheduled. Construction projects will go to bid from FY 2007 through FY 2011 for new interchanges at the following locations: Bullard Avenue/I-10; Dove Valley Road/I-17; Jomax Road-Dixileta Road/I-17; and 64th Street/101L.
- **New HOV Ramps at Existing Freeway-to-Freeway Interchanges** - The RTP identifies a total of six locations at freeway-to-freeway interchanges on existing freeways where HOV ramps will be constructed to provide a direct connection through the interchange. These projects fall at major connections among components of the regional freeway system, including I-10, I-17, 101L, 202L, US 60 (Superstition Freeway) and SR 51. The implementation of these new interchanges is phased over the entire planning period. Construction of new HOV ramps at the SR 51/101L freeway-to-freeway interchange has been programmed in FY 07 as part of the addition of HOV lanes on SR 51 between 101L and Shea Boulevard. A DCR and an EA covering this project has been completed and final design work is also nearing completion.

Freeway System Management and Noise Mitigation Programs

The RTP also provides for capital expenditures for traffic management and mitigation programs on the freeway/highway system. These programs are directed at the freeway management system (FMS) and noise mitigation. The amount identified in the RTP for freeway system management and noise mitigation totals \$188 million (2007 \$'s).

- **Freeway Management System** - The RTP identifies a block of funding, covering the planning period, for a freeway management system (FMS) in the MAG Region. This includes projects to enhance FMS on existing facilities, as well as to expand the system to new corridors. FMS covers items such as ramp metering, changeable message signs, and other measures to facilitate traffic flow.

- **Noise Mitigation** - The RTP identifies a block of funding, covering the planning period, for noise mitigation projects on the freeway system in the MAG Region. This funding will be used for mitigation projects such as rubberized asphalt overlays and noise walls.

Systemwide Preliminary Engineering, Advance Right-of-Way Acquisition, Property Management/Plans and Titles, and Risk Management

The overall highway development process involves a number of steps that are necessary to prepare projects for eventual construction. Key elements that are included in this area are as follows: (1) Preliminary Engineering - preparation of preliminary plans defining facility design concepts, right-of-way requirements and environmental factors; (2) Advance Right-of-Way Acquisition - acquisition of right-of-way to respond to development pressures in a corridor; (3) Property Management/Plans and Titles - procedures to acquire property and manage it until needed for construction; and (4) Risk Management - programs to minimize the risk of litigation. The amount identified in the RTP for system-wide programs totals \$439 million (2007 \$'s).

Proposition 300 - Regional Freeway Program

The Proposition 300 - Regional Freeway Program was initiated in 1985 with the passage of an authorized half-cent sales tax in Maricopa County for use on the regional freeway system. This program is in its final construction stages, and it is anticipated that the last freeway segment in the program will be completed by mid-2008. Although sales tax collections for Proposition 300 ended on December 31, 2005, ongoing work that utilizes State and Federal funding sources will continue through mid-2008 to complete the last segments of the program. In addition, certain debt service requirements and other financial obligations for the program will continue through FY 2026. These obligations have been taken fully into account in the planning process for the RTP, to ensure there are no conflicting demands on revenues. The South Mountain Freeway, Estrella Freeway, and the Sky Harbor Expressway, which were originally included in the Proposition 300 - Regional Freeway Program, have been included as new corridors in the RTP.

- **Project Completions in FY 2006** - In December 2005, construction of the Santan Freeway (202L) between Arizona Avenue and Gilbert Road was completed and opened to traffic. This was followed by the opening of the Santan between Gilbert Road and Elliot Road in June 2006, which completed the 24.8-mile Santan Freeway in its entirety from I-10 on the west to the Superstition Freeway on the east. In June 2006, the final grade separation project on Grand Avenue (US 60), at Glendale Ave/59th Avenue was completed and opened to traffic (July 9, 2006). This completed the series of eight grade separation improvements on Grand Avenue between I-17 and 101L that were included in the Proposition 300 - Regional Freeway Program.
- **Scheduled Completion of the Red Mountain Freeway** - During FY 2006, freeway construction on the Red Mountain Freeway (202L) was underway on the north half of the system interchange with US 60; the segment between Southern Avenue and University Drive; and the segment between University Drive and Power Road. It is anticipated that the entire 7.4-mile stretch from Power Road to the Superstition Freeway, which represents the

final segment in the Proposition 300 - Regional Freeway Program, will be open to traffic by mid-2008.

System Operation, Maintenance and Preservation

One of the key goals of the RTP is to operate and maintain a high quality transportation network, and to preserve the significant investment that has been made in transportation facilities through the MAG Region. For the freeway/highway system, this translates into actions to ensure not only the physical integrity and safety of the system, but also measures to address its visual impacts on motorists and surrounding neighborhoods. The amount identified in the RTP for system operation, maintenance and preservation totals \$1.2 billion (2007 \$'s).

Regionally Funded Landscape and Litter Maintenance Activities

The RTP includes a block of funding for maintenance of the regional freeway system in the MAG Region. These regional resources are dedicated only to litter pick-up, landscaping maintenance and landscaping restoration. The goal of this funding is to supplement, not supplant, the state-level revenues that ADOT dedicates to maintenance and preservation in the MAG Region. ADOT already has initiated an increased level of landscaping, litter pick up and sweeping maintenance on existing freeways in the Valley and will expand this effort as RTP projects are constructed. Total maintenance expenditures for FY 06 were over \$2 million.

Routine Maintenance and Operations

Routine maintenance and operation of the regional freeway/highway network in the MAG Region is accomplished by ADOT through its maintenance districts. These districts are organized to provide services in five key functional areas, addressing roadway maintenance, landscape maintenance, electrical operations, traffic engineering and administrative services.

Example activities include maintenance of pavement, guard rails and median cable barriers, drainage channels, canals, tunnels, retention basins, and sound walls, as well as maintenance and restoration of landscaping. In addition, traffic operations are addressed, including roadway lighting, traffic signals, signing and striping, and freeway management system support. Other functions cover utility locating services, encroachment permits, crash clearing and repairing damaged safety features.

Pavement Preservation

The ADOT organization includes a Pavement Management Section, which is charged with the responsibility to develop and provide a cost effective pavement rehabilitation construction program. The pavement preservation program receives a high priority within ADOT, to preserve the investment in the freeway/highway system and enhance transportation safety and efficiency. The program is accomplished by performing a yearly inventory of the pavements in the system, with particular attention to smoothness of ride, amount of cracking, bleeding, patching, and rutting, and the friction characteristics. As part of this process, a large relational database is used to help prioritize the work needed to keep the system performing within predetermined service levels.

Freeways/highways constructed from concrete have a longer initial life and overlay life than facilities that are constructed using asphalt. In this regard, the predominance of concrete pavements on MAG urban freeways is a definite advantage. Recent pavement projects have focused on I-10 to the west, I-17 to the north, and the portion of US 60 falling along Grand Avenue. A pavement preservation project is anticipated in the near future along I-17 in central Phoenix.

ADOT Freeway/Highway Life Cycle Program

While MAG is responsible under Federal and State law for developing the RTP, the Arizona Department of Transportation (ADOT) is responsible for the actual construction and operation of the freeway/highway facilities included in the RTP. This includes design, right-of-way acquisition, and construction of freeways and other State routes as specified in the RTP; the installation of noise walls; application of other community mitigation measures; and certain maintenance activities. In order to implement the projects in the RTP, ADOT maintains a Freeway/Highway Life Cycle Program. The Life Cycle Program covers FY 2008 through FY 2026 and is a key component of a budget process to ensure that the estimated cost of programmed freeway/highway improvements does not exceed the total amount of revenues available for those improvements.

The ADOT Freeway/Highway Life Cycle Program has been incorporated directly into the RTP and is included in Appendix A in its entirety. Funding for all project activities is identified, and includes design, right-of-way acquisition, construction, landscaping and litter maintenance. In addition, funding allocations for system-wide functions such as preliminary engineering and property management are identified on an annual basis. Projects are further defined as to facility type, route and project limits.

Since the Life Cycle Program provides a comprehensive yearly listing of all freeway/highway projects, their costs, and implementation schedule, it represents an invaluable tool for monitoring construction progress on individual projects and assessing the financial status of the program as a whole. In addition, it provides a benchmark for the decision-making process regarding alterations to projects scopes, adjustments to construction schedules, and changes to plan and program priorities.

Funding and Expenditure Summary

Table 8-2 has been prepared to provide an overview of the funding and expenditures for the freeway/highway element of the RTP. This table lists the reasonably available funding sources for the planning period and the uses of those funds. The revenue sources included in Table 8-2 are considered to be reasonably available throughout the planning period, having had a long history of providing funding for the RTP. As indicated in Table 8-2, projected future funding is in balance with estimated future program expenditures, indicating that the freeway/highway element can be accomplished using reasonably available funding sources over the planning period.

The Freeway/Highway Life Cycle Program (see Appendix A) was used as a source in the development of Table 8-2. As noted earlier, the Freeway/Highway Life Cycle Program covers the period FY 2008 through FY 2026, and ends two years before FY 2028, which is the last year of the period covered by the RTP. Since this two-year period falls at the end of the planning period and is relatively short compared to the program as a whole, it is being treated as a "contingency interval", and the funds during this period are not being specifically programmed for freeway/highway

projects in the 2007 Update. Subsequent updates to the RTP may identify a more specific allocation of this funding.

Funding Sources

Funding sources shown in Table 8-2 for the freeway/highway element include the half-cent sales tax (\$10.1 billion); MAG area ADOT funds (\$8.6 billion); Federal Highway Congestion Mitigation/Air Quality funds and Surface Transportation Program funds (\$533 million); ADOT statewide funding (\$1.2 billion); STAN and other funds (\$251 million); bond proceeds (\$4.3 billion); and an estimated cash balance of \$180 million at the beginning of FY 2008. Debt service and other expenses totaling \$7.0 billion are deducted from these sources, along with an allowance for inflation (\$5.3 billion). This yields a net total of \$12.9 billion (2007 \$'s) for use on freeway/highway construction projects. The above revenue sources have been major funding elements for transportation facilities in the MAG Region for decades and are considered to be reasonably available to the region throughout the planning period.

Program Expenditures

Table 8-2 also lists estimated future costs for the freeway/highway element of the RTP, expressed in 2007 \$'s. Expected expenditures during the planning period total \$11.2 billion. This includes \$4.4 for construction of new corridors and new interchanges; \$4.4 billion for widening of existing facilities; \$692 million for the Freeway Management System (FMS), noise mitigation, systemwide programs and other projects; \$1.2 billion for operations, maintenance and preservation; and \$567 million for prior obligations from the Proposition 300 and Proposition 400 programs.

TABLE 8-2
FREEWAY/HIGHWAY FUNDING PLAN: FY 2008 - 2028

FUNDING (Year of Expenditure \$'s in Millions)	
	Totals
Regional Funds	
MAG Half-Cent Sales Tax	10,055.2
MAG Area ADOT Funds	8,605.1
MAG Federal CMAQ and STP	532.6
STAN Funds	193.5
Total Regional Funds	19,386.4
Other Funding	
ADOT Statewide Funding	1,179.2
Other Income	57.3
Total Other Funding	1,236.5
Bond Proceeds	4,316.2
Beginning Balance	182.0
Allowance for Debt Service and Other Expenses	(6,959.7)
Allowance for Inflation	(5,266.8)
Total Funding (2007 \$'s)	12,894.6
EXPENDITURES (2007 \$'s in Millions)	
	Totals
New Facilities and Improvements	
New Corridors	3,986.9
Widening of Existing Facilities: General Purpose and HOV Lanes	4,438.5
New Interchanges and New HOV Ramps on Existing Facilities	282.1
FMS, Noise Mitigation and Systemwide Programs	644.0
Other Projects	78.9
Total New Facilities and Improvements	9,430.4
System Operation, Maintenance and Preservation	1,154.0
Prior Obligations from Proposition 300 & 400 Programs	567.0
Total Expenditures (2007 \$'s)	11,151.4

CHAPTER NINE

ARTERIAL STREETS

The arterial street grid system is a vital component of the regional transportation system in the MAG Region and is a key element of the Regional Transportation Plan (RTP). The RTP provides regional funding for widening existing streets, improving intersections, and constructing new arterial segments. The continued implementation of Intelligent Transportation Systems (ITS) and dust control measures, for air quality purposes, are also funded. While MAG is responsible for developing the RTP, local jurisdictions are primarily responsible for design, right-of-way acquisition, and construction of arterial facilities as identified in the plan. Local jurisdictions are also responsible for the maintenance of these facilities.

Current Arterial Street System

The arterial street system is a critical element of the regional transportation network and consists primarily of roadways with four or more lanes on a mile grid. This system provides the region with a high level of accessibility and mobility, complementing the regional freeway system and serving automobile traffic, transit, bicycle and pedestrian traffic. The arterial system carries over half of the total vehicle-miles-traveled in the region. Figure 9-1 presents the existing arterial grid system, as modeled for the year 2006.

In addition to the arterial street system, the region is served by non-arterial streets, which include all local and collector streets. Non-arterial streets carry a relatively small amount of the total traffic in the region, primarily providing access to businesses and residences. The development of local street mileage is closely associated with the growth in population and employment.

Planned Arterial Facilities and Improvements

The planned arterial street system is addressed in three ways within the MAG RTP. First, the RTP identifies a long-range regional arterial grid system that provides for access to existing and newly developing areas in the region. Second, a specific package of improvements to the arterial network has been identified in the RTP and is funded with regional revenues. Third, dust control measures, which focus on street sweeping and the paving of unpaved roads, are included. The dust control measures are a key element of the regional effort to control particulate emissions.

Arterial Grid System

The future arterial network anticipated in the MAG Region by 2028 is depicted in Figure 9-2. This system is characterized by a one-mile grid network of streets and is constructed through a combination of privately supported and local government funded projects. Improvements to the system are staged to parallel new development. This network was determined through ongoing consultation with local agencies and sub-regional studies conducted by MAG. The future arterial network extends the current one-mile arterial grid system concurrent with new development, and also closes gaps and improves connectivity in both developed and developing areas. In addition, certain existing arterials receive capacity improvements.

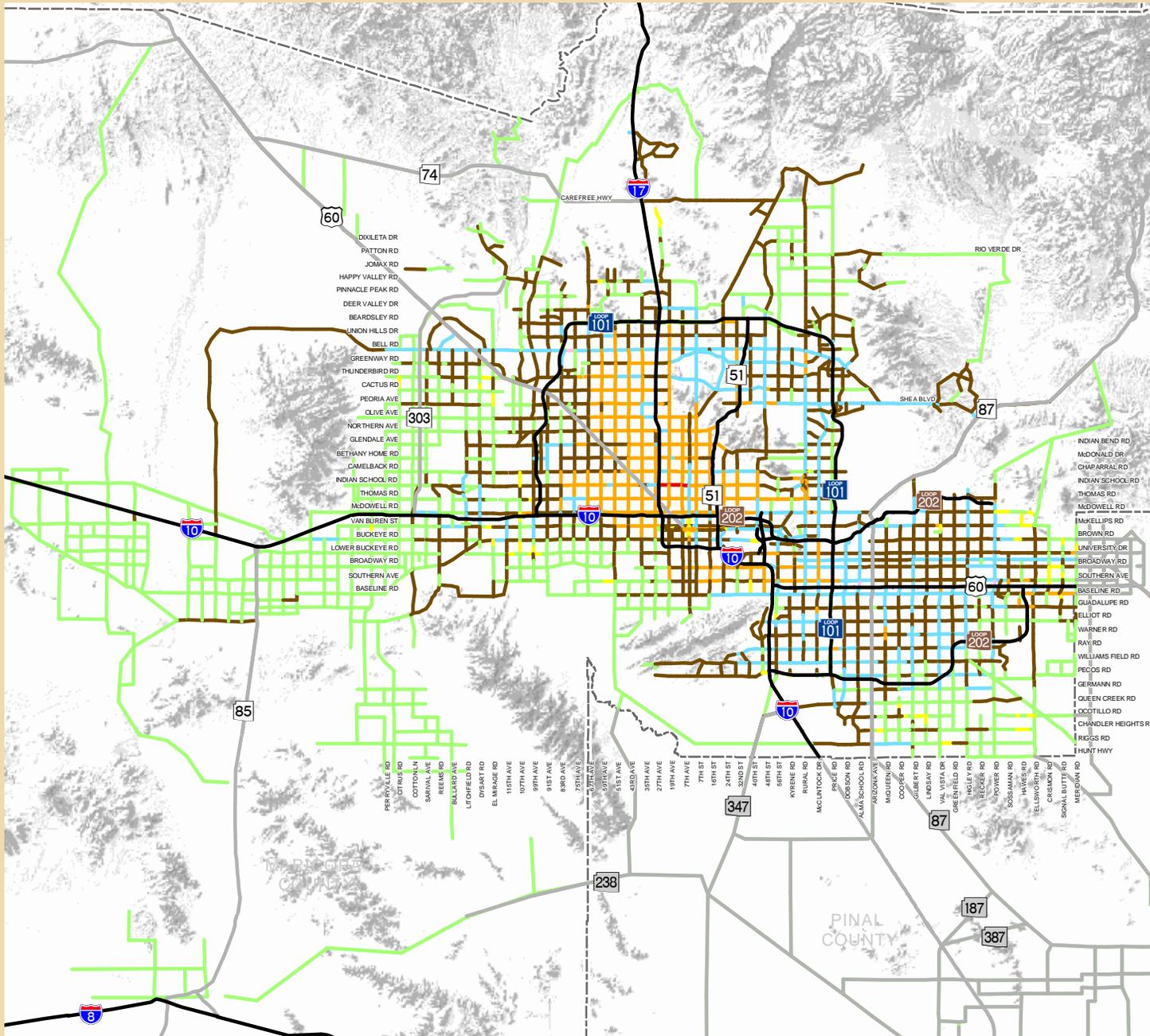
2007 Update
Regional Transportation Plan
Fig. 9-1



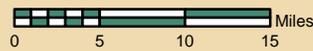
2006 Arterial
Street System
Total Through Lanes

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- 8 Lanes
- County Boundary
- Freeways
- Other Roads

Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).



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2007 Update
Regional Transportation Plan
Fig. 9-2

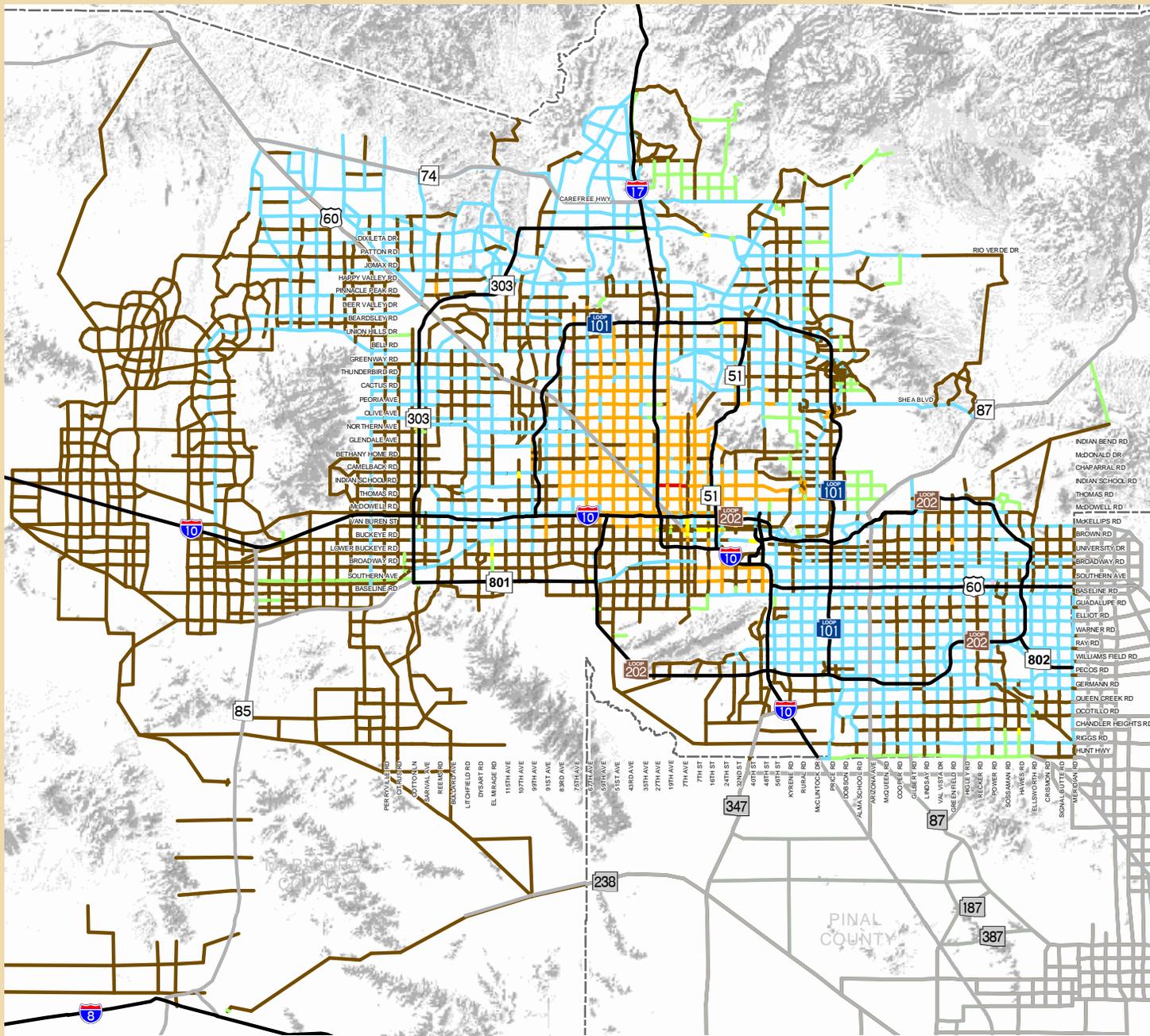


2028 Arterial
Street System
Total Through Lanes

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- 8 Lanes
- County Boundary
- Freeways
- Other Roads

Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.



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It is anticipated that the overall arterial street network will expand by a combination of the construction of new roadway alignments; the paving of dirt roads on the one-mile arterial grid system; and the widening of existing arterial streets. In some areas, natural features, such as mountains and areas of steep terrain, will preclude the extension of the one-mile arterial grid system. Examples of topographical constraints can be found in the northwest region of the MAG urbanized area.

Based on historical trends, the construction of new streets that accompany new development will continue to be funded largely from private sources. Projects to widen existing streets will receive significant funding from public sources. The amount identified in the RTP for the planning period (FY 2008 - FY 2028) for development of the arterial grid system totals \$9.8 billion (2007 \$'s).

Regionally Funded Improvements

In addition to the ongoing development of the arterial grid system through privately supported and local government funded projects, the MAG RTP identifies regional funding for improving the arterial grid system. This package of regionally funded projects provides for the construction of new arterial linkages, widening of existing streets, and improvement of intersections. The implementation of projects in the regional Intelligent Transportation System (ITS) Plan is also included. The regionally funded arterial improvements planned for the system are shown in Figure 9-3. A detailed listing of the specific projects covered by these improvements is provided in Appendix B and constitutes the MAG Arterial Life Cycle Program.

- **Arterial Capacity/Intersection Improvements** - A total of 95 projects originally identified in the RTP are covered in this category. As the engineering process proceeds, the specific type of improvements will be defined, and detailed designs will be prepared. These improvements will vary in nature, including the widening of existing arterial streets, such as the series of improvements called for in the East Valley; the major upgrading of facilities, such as the development of a parkway along Northern Avenue in the West Valley; and construction of new facilities on new alignments, such as the Rio Salado Parkway in southwest Phoenix. Also, improvements at individual intersections will be addressed in this category. The amount identified in the RTP for the planning period (FY 2008 - FY 2028) for regional reimbursements for arterial capacity/intersection improvements totals \$1.6 billion (2007 \$'s). The total cost of these regionally funded improvements, including local contributions, is \$2.9 billion (2007 \$'s).
- **Intelligent Transportation Systems (ITS)** - The RTP allocates funding to assist in the implementation of projects identified in the regional ITS Plan. These projects smooth traffic flow and help the transportation system to operate more efficiently. The focus of the arterial ITS program is to assist MAG member agencies to develop their arterial traffic management systems to better address needs. The amount identified in the RTP for the planning period (FY 2008 - FY 2028) for regional reimbursements for arterial ITS projects totals \$58 million (2007 \$'s). The total cost of these improvements, including local contributions, is \$83 million (2007 \$'s)

2007 Update Regional Transportation Plan

Fig. 9-3

REGIONAL
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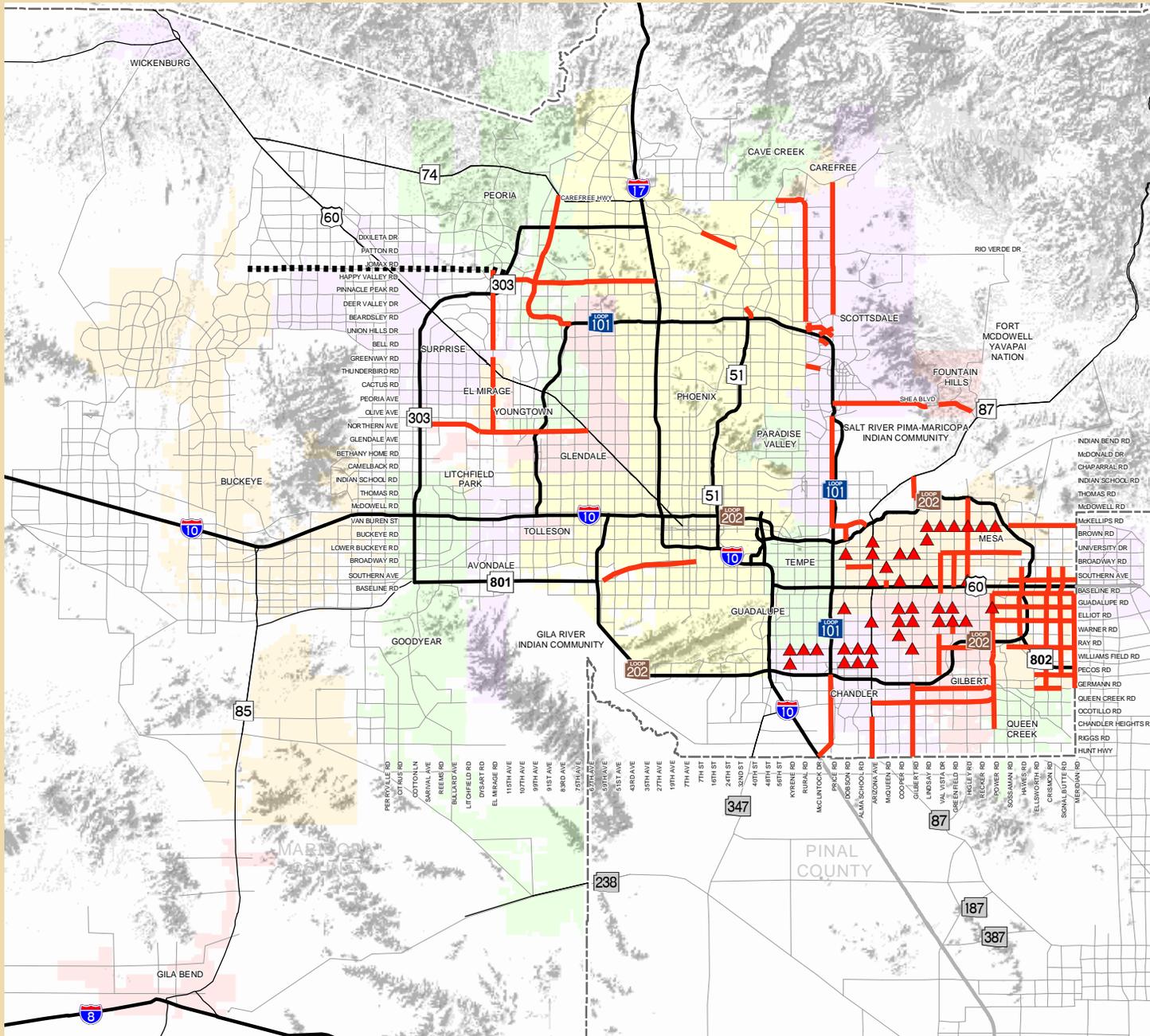


Planned Arterial Street Improvements

- Improved Intersections
- New/Improved Arterials
- Right of Way Preservation
- County Boundary
- Freeways
- Highways
- Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

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Dust Control Measures

The RTP incorporates funding for measures to reduce PM-10 emissions generated by vehicle travel. From FY 2001 to FY 2007, \$16.1 million in Congestion Mitigation and Air Quality Improvement (CMAQ) funds were committed to purchase 111 PM-10 certified sweepers.

An additional \$5.43 million in CMAQ funding is programmed to purchase 48 additional PM-10 certified sweepers in the FY 2008 to FY 2012 MAG Transportation Improvement Program (TIP). After FY 2007, it is anticipated that local governments will continue to purchase PM-10 certified sweepers to replace older broom sweepers, expand the area swept, and increase the frequency of sweeping. The RTP assumes that eight PM-10 sweepers will be acquired during each year from FY 2008 to FY 2010. After FY 2010, it is assumed that five additional PM-10 certified units will be purchased each year to increase the frequency of sweeping, in an effort to clean new streets in developing areas of the rapidly-growing region.

In the RTP, the paving of dirt roads by local jurisdictions reflects a continuation of current commitments to reduce fugitive dust on unpaved roads with high traffic volumes; eliminate dirt roads in areas of new development; and to pave dirt alleys, shoulders, and access points. Consistent with past trends, the RTP assumes that 10 centerline miles of high Average Daily Traffic (ADT) unpaved roads will continue to be paved each year.

The funding and expenditures for purchasing PM-10 certified street sweepers and paving dirt roads after FY 2007 are reflected in the FY 2008 to FY 2028 Arterial Funding Estimates. Long-term implementation of these dust control measures will be financed with the resources shown in Table 9-2.

System Operation, Maintenance and Preservation

MAG member agencies seek to maintain and operate the arterial street system in a way that preserves past investments and obtains the maximum capacity from existing facilities. To achieve this goal, agencies apply local funds and their share of State Highway User Revenue Funds to a range of expenditures, including street lighting, street sweeping, landscaping, sign maintenance, pavement maintenance, the operation of traffic signals, and other recurring costs necessary to maintain the arterial street network. A particularly important part of the preservation effort involves the application of pavement management systems.

Pavement management systems (PMS) are systematic processes that provide information for use in implementing cost-effective pavement reconstruction, rehabilitation, and preventative maintenance programs, which result in pavements capable of accommodating current and forecasted traffic in a safe, durable, and cost-effective manner. ADOT has developed and implemented a PMS for the State Highway System. Other MAG member agencies have developed PMS programs for roads within their jurisdictions. Table 9-1 lists key characteristics of existing PMS programs. The amount identified in the RTP for the planning period (FY 2008 - FY 2028) for maintenance and preservation totals \$8.9 billion (2007 \$'s).

TABLE 9-1 PAVEMENT MANAGEMENT SYSTEMS

Agency	PMS Software	Data Range	Freq.	Comments
ADOT	NOS	Full	Annual	Network Optimization Software designed by consultant. Inertial Profilometers used.
Apache Junction	Carte-Graph	Good	Annual	The CarteGraph System has been slow to become operational. The program had many bugs in the system and was unable to retain the data entered. The program will have information on street width, street condition, maintenance history, right-of-way information, curb, gutter and sidewalk notation, storm drainage appurtenances, etc.
Carefree	In-House System	Good	3 yrs	Visual inspection conducted by staff every 18 to 24 months. Inspectors complete a form developed by the Asphalt Institute.
Chandler	Stantec Super PMS 1.41	Full	4 yrs	Data is collected on street details and distresses. A Pavement Quality Index (PQI) is formulated from a Surface Distress Index and a Ride Distress Index (RDI). Data is collected on over 18 distress types on each section of pavement. The PQI is used to set annual maintenance and rehabilitation programs for city streets.
El Mirage	None	Good	Annual	Visual inspection and evaluation as needed.
Fountain Hills	In-House System	Good	3 yrs	The Town uses a asphalt pavement distress data form to collect information on seven categories with each category assigned a rating of low, moderate or high severity. These categories are then combined to create an overall distress index, not to exceed 100 total points.
Gilbert	Chec PMS	Good	Annual	Visual inspection and manual system. Implementing a software based system.
Glendale	Hansen	Good	3 yrs	Inventory collected visually.
Goodyear	Carte-Graph	Full	2 yrs	Currently the City is using a manual system since Cartegraph was abandoned. Currently researching THE as a viable system.
Litchfield Park	None	Good	Annual	Visual inspection. Manual inventory system.
Maricopa County	In house program	Full	Annual	In-house programmed pavement management system. It accepts our Pavement Condition Ratings (PCR), International Roughness Index (IRI) ratings, and sufficiency ratings for all County roadways. It then calculates pavement needs and capacity upgrading needs for all County Roadways. It outputs lists of roadways needing various surface treatments and capacity needs.
Mesa	In house program	Full	Annual	Mesa uses a system named "MicroPAV Pro" that was developed by Southwest Systems Consultants, Inc. The program provides for a complete classification of all inventory items, work history and distress data collection and history. The software is capable of performing cost analysis, condition projection and forecasts. It also can produce reports and graphs for all data items.

TABLE 9-1 (continued)

Agency	PMS Software	Data Range	Freq.	Comments
Paradise Valley	In house program	Full	Annual	PMS was developed using Access software, and is based on a Kimley-Horn engineering study of the Town streets. All streets are inspected on an annual basis. Streets are rated based upon inspections, and the rating of streets is the primary statistic used to determine what streets will be proposed for crack sealing, slurry sealing, or resurfacing. The resurfacing of streets is budgeted through the Town's Capital Improvement Program.
Peoria	Hansen	Good	3 yrs	The City uses Hansen.
Phoenix	Stantec	Full	2 yrs	Automated system using the PURD from Stantec. Data is collected on all street classifications for surface distresses and ride comfort. A Pavement Quality Index (PQI) is formulated using the Surface Distress Index (SDI) and International Roughness Index (IRI). The software is capable of performing cost analysis for annual maintenance programming.
Scottsdale	Mixed System	Good	Annual	Automated system being developed. Current manual system.
Surprise	Hansen	Good	Annual	The City is switching from a manual system to Hansen.
Tempe	Stanley ITX	Full	5 yrs	Uses a software based system.
Tolleson	None	Good	Annual	Visual inspection. Manual system.
Wickenburg	None	Good	Annual	Visual inspection. Manual system.
Youngtown	None	Good	Annual	Visual inspection. Manual system.

MAG Arterial Street Life Cycle Program

The Arterial Street Life Cycle Program (ALCP) is maintained by the Maricopa Association of Governments (MAG) and implements arterial street projects in the MAG RTP that are funded from regional revenue sources (see Chapter Seven). Although MAG is charged with the responsibility of administering the overall program, the actual construction of projects is accomplished by local government agencies that provide funding to match regional revenues. The ALCP meets the requirements of State legislation calling on MAG to conduct a budget process to ensure that the estimated cost of programmed arterial street improvements does not exceed the total amount of revenues available for these improvements. The Arterial Street Life Cycle Program included in the RTP covers the period from FY 2008 through FY 2026.

The MAG Arterial Life Cycle Program has been incorporated directly in the RTP and is included in Appendix B in its entirety. Funding for all project activities is identified on an annual basis, and includes design, right-of-way acquisition and construction. Projects are further defined as to facility, jurisdiction and project limits. The ALCP is based on the principle of project budget caps. Under this approach, the regional funding allocated to a specific project is fixed (on an inflation adjusted basis) in the RTP. This amount must be matched by the implementing agency with a minimum 30

percent contribution to the project costs. Any costs above the fixed reimbursement amount as specified in the ALCP is the responsibility of the implementing agency.

It should be noted that the funding for construction of arterial improvements is spread throughout the period covered by the Arterial Life Cycle Program. However, to respond to local priorities and development issues, in certain cases local governments are planning to construct projects sooner in the program period than originally scheduled in the RTP. In these cases, the implementing agency will be reimbursed according to the original arterial street program schedule as identified in the MAG RTP adopted in November 2003, even though the construction takes place earlier. The ALCP reflects this policy, and funding for advanced projects is shown in the later years when reimbursement will occur.

The Arterial Life Cycle Program included in Appendix B has been updated to reflect the most recent status of project development timing and scope. Some of the more significant changes compared to the 2006 RTP Update are listed below.

- McKellips Rd. (Gilbert Rd. to Power Rd.): Scope change from road improvement to six intersection improvement projects. Two intersections will be done at the same time.
- Mesa Dr. (Southern Ave. to US 60): Scope change from one contiguous two-mile road improvement (Broadway Rd. to US 60) to a road improvement on Mesa Dr. (Southern Ave. to US 60) and an intersection improvement project at Mesa Dr. and Broadway Rd.
- Southern Ave. (Country Club Dr. to Recker Rd.): Scope change from one contiguous six-mile road improvement project to four intersection improvement projects with resurfacing.

Funding and Expenditure Summary

Table 9-2 has been prepared in order to provide a summary of the funding scenario for the streets element of the RTP. This table lists the reasonably available funding sources for the planning period and the uses of those funds. The balance between the funds that are available and the potential expenditures indicates that the arterial element of the RTP can be accomplished by using reasonably available funding sources over the planning period.

The Arterial Life Cycle Program (see Appendix B) was used as a major resource in the development of Table 9-2. The ALCP covers the period FY 2008 through FY 2026, ending two years before FY 2028, which is last year of the period covered by the RTP. Similar to the Freeway/Highway Program, this two-year period is being treated as a "contingency interval", and the funds during this period are not being specifically programmed for additional regionally funded arterial projects in the 2007 Update. Subsequent updates to the RTP may identify a more specific allocation of this funding.

Funding Sources

Regional funding sources shown in Table 9-2 for the arterial streets element include the half-cent sales tax (\$1.9 billion); Federal Highway Congestion Mitigation/Air Quality funds (\$362 million); Federal Surface Transportation Program funds (\$1.1 billion); bond proceeds (\$391 million); and an

estimated cash balance of \$33 million in regional funds at the beginning of FY 2008. These regional funds are complemented by local/other sources, which include city/county funding (\$18.1 billion); and private funds (\$5.4 billion). Deducting debt service \$509 million, along with an allowance for inflation of (\$8.0 billion), a net total of \$18.8 billion (2007 \$'s) is available for use on arterial street construction projects. These revenue sources have been major funding elements for transportation facilities in the MAG area for decades and are considered to be reasonably available to the region throughout the planning period.

Program Expenditures

Table 9-2 also lists estimated future costs for the arterial street element of the RTP, expressed in 2007 \$'s, except as noted. Expected expenditures during the planning period total \$18.7 billion. This includes \$3.0 for regionally funded street/intersection improvements and Intelligent Transportation System (ITS) projects, including the accompanying local match; \$6.7 billion for locally funded improvement and extension of the arterial grid; and \$8.9 billion in local funding for operations, maintenance and preservation.

**TABLE 9-2
ARTERIAL STREET FUNDING PLAN FY 2008 - 2028**

FUNDING (Year of Expenditure \$'s in Millions)		Totals
Regional Funds		
MAG Half-Cent Sales Tax	1,878.6	
MAG Federal STP	1,115.7	
MAG Federal CMAQ	173.3	
MAG Federal CMAQ (PM-10 and Other Air Quality Programs)	189.0	
Total Regional Funds		3,356.6
Local/Other Funds		
City/County Highway User Revenue Funds and County VLT	14,682.5	
Local Sources (General Funds, Local Sales Taxes, etc.)	3,430.8	
Private Funds (Impact Fees, Developer Contributions, etc.)	5,400.0	
Total Local/Other Funds		23,513.3
Bond Proceeds (Regional Funding)		391.0
Beginning Balance (Regional Funding)		32.9
Allowance for Debt Service (Regional Funding)		(509.0)
Allowance for Inflation		(7,996.8)
Total Funding (2007 \$'s)		18,788.0
EXPENDITURES (2007 \$'s in Millions)		Totals
Regionally Funded Projects		
Capacity/Intersection Improvements	1,612.7	
Intelligent Transportation Systems	57.8	
PM-10 and Other Air Quality Programs	141.0	
Total Regionally Funded Projects		1,811.5
Local/Other Funded Projects		
Match for Regionally Funded Projects	1,375.1	
Future Arterial Grid Extensions, Widening and Improvements	6,583.9	
System Operation, Maintenance and Preservation	8,925.9	
Total Local/Other Funded Projects		16,884.9
Total Expenditures (2007 \$'s)		18,696.4

CHAPTER TEN

PUBLIC TRANSIT

In 1985, the Arizona Legislature passed legislation authorizing the creation of the Regional Public Transportation Authority (RPTA). The passage of a sales tax for transportation in October of 1985 provided the RPTA with a modest amount of regional funding (approximately two percent of the annual revenues raised by the new sales tax) to underwrite transit services within the county. Since 1985, the MAG Region has experienced phenomenal growth that has placed additional demands on its roads and public transportation services. With the passage of Proposition 400 in November 2004, approximately one-third of the regional half-cent sales tax for transportation is being devoted to mass transit. The Regional Transportation Plan (RTP) reflects this significant increase in funding, with transit plans and programs providing for expanded regional bus service and new light rail transit facilities. The RTP provides for a range of transit facilities and services throughout the region. In total, about 33 percent of regional funding is allocated to projects in the transit element.

Current Transit System

The transit system currently serving the MAG area is depicted in Figure 10-1 and consists of local bus service, express bus service, and circulator/shuttle services. These services operate primarily on arterial streets and serve a range of trip needs, including work, shopping, medical appointments and school trips. The service design emphasis is on area coverage, so that the maximum possible population can access the bus network. Service levels on particular routes are dictated by the demand for transit along those routes, as well as by availability of funding. Routes typically operate all day, seven days a week, in some cases with higher levels of service during peak travel hours. Express services are oriented around peak periods of demand.

Planned Bus Facilities and Service Improvements

As part of the RTP, a regional bus network is funded; including operating costs, to ensure that reliable service is available on a continuing basis. In addition to the regionally funded elements, local sales tax initiatives fund transit services in the cities of Avondale, Glendale, Mesa, Phoenix, Scottsdale, and Tempe. Currently, local agencies operate approximately 85 percent of the bus transit services provided in Maricopa County.

Fixed route bus service in the MAG Region represents an increasingly important component of the regional transportation network. Over time, new routes will be added to the existing transit system. Funding for the additional transit service will be provided by revenue from Proposition 400, existing local sales taxes, and anticipated future local sales tax initiatives. Based on the recent trend in the Valley for cities to implement local transit sales taxes, it is reasonable to assume that other cities will also fund transit service beyond what is identified in Proposition 400. Figure 10-2 depicts the 2028 fixed route bus network. This figure covers the regionally funded services that are described below, including bus rapid transit/express, regional grid system, and rural routes, as well as additional, locally funded service. The amount identified in the RTP for bus facilities and services (including vanpool, dial-a-ride and rideshare) from all funding sources totals over \$8.0 billion (2007 \$'s). Of this total, \$4.1 billion (2007 \$'s) will be regionally funded and \$3.9 billion (2007 \$'s) will be funded from local sources, which include farebox receipts.

2007 Update Regional Transportation Plan

Fig. 10-1

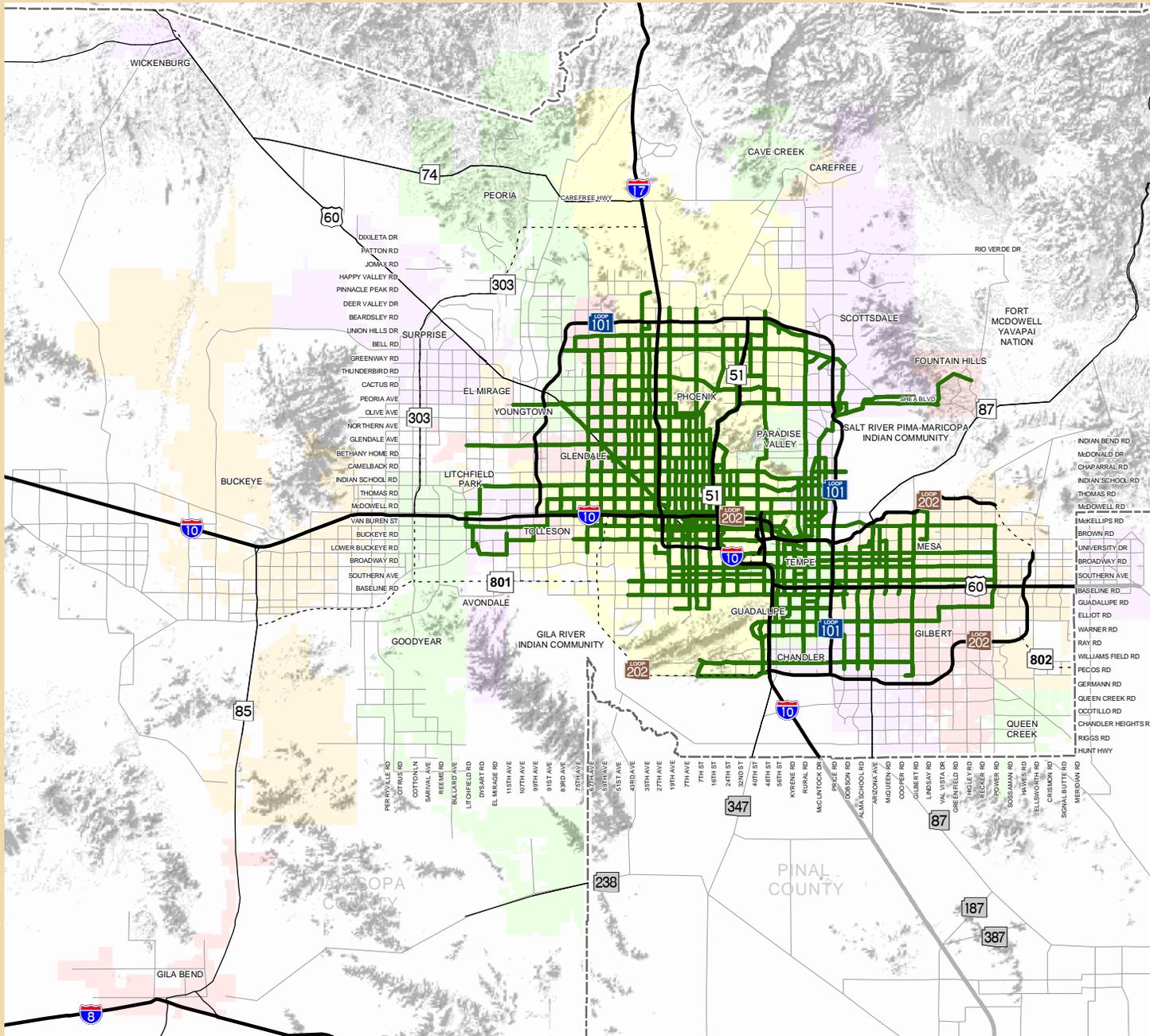


2006 Bus Service Network

- Bus Network
- County Boundary
- Existing Freeway
- Planned Freeway/Highway
- Highways
- Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

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Fig. 10-2



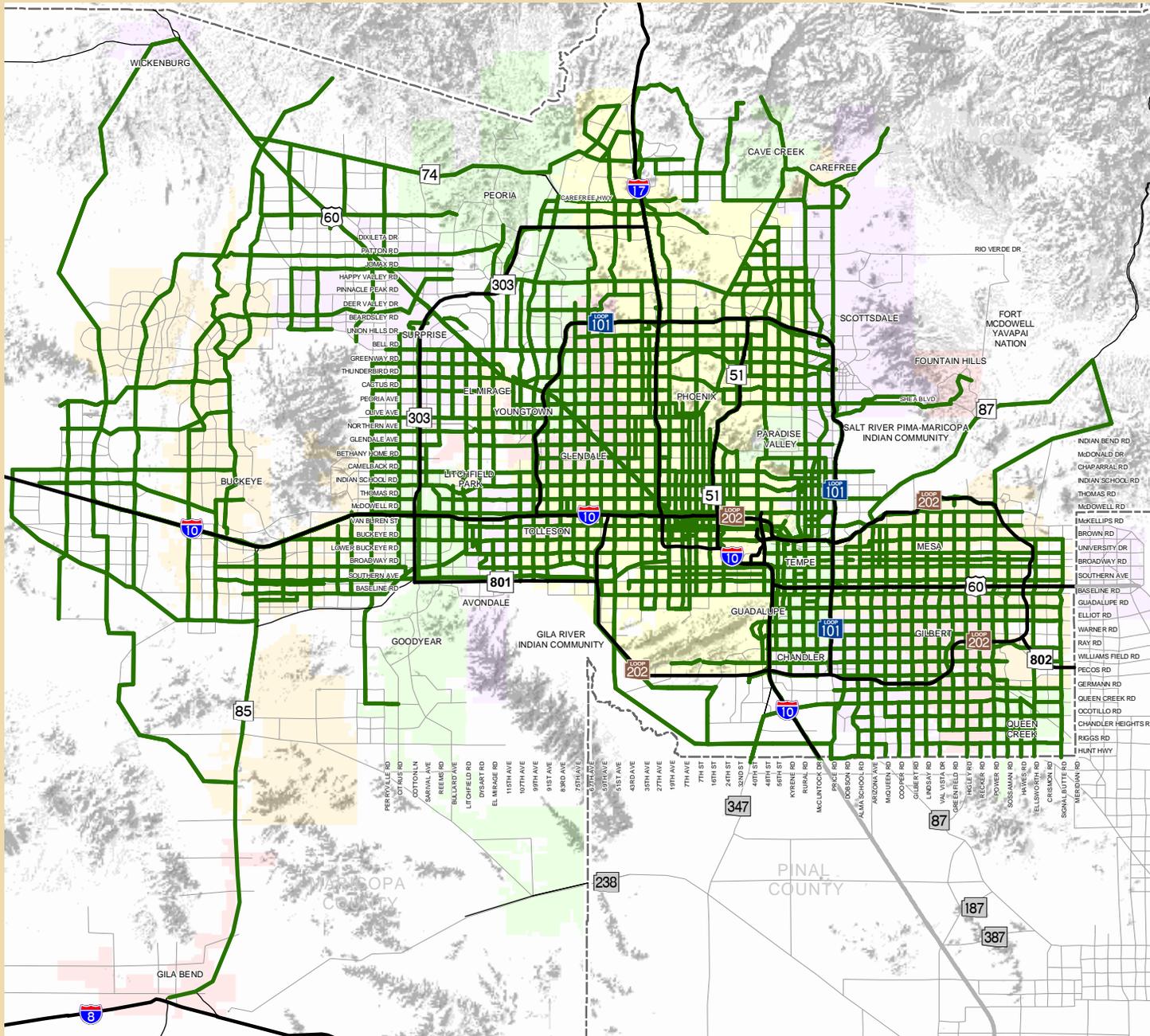
2028 Bus Service Network



-  Bus Network
-  County Boundary
-  2028 Freeways
-  Highways
-  Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

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Bus Operations: Bus Rapid Transit (BRT)/Express

Regional BRT/Express transit services are comprised of Arterial BRT and Freeway BRT/Express routes. Arterial BRT routes are intended to operate as overlays on corridors served by local fixed route service, but provide higher speed services by operating with limited stops and with other enhancements, such as bus only lanes, queue-jumpers or signal priority systems. The proposed Arterial BRT routes as identified in the RTP are intended to operate during peak and off-peak periods. In addition to Arterial BRT routes, the RTP also includes Freeway BRT/Express routes, which use existing and proposed high occupancy vehicle (HOV) facilities to connect park-and-ride lots with major activity centers, including core downtown areas. Freeway routes provide suburb-to-suburb, as well as suburb to central city connections using the regional freeway system and intermediate stops. Regional funding has been allocated for Bus Rapid Transit (BRT)/Express operations throughout the RTP planning period. This represents approximately three percent of the total regional funding budget allocated for transit. There are a total of 31 Bus Rapid Transit (BRT)/Express routes identified for funding. Figure 10-3 depicts the Regional BRT/Express transit services that will be regionally funded.

Bus Operations: Regional Grid

Regional Grid bus routes, which are also commonly referred to as “Supergrid Routes,” include bus routes that are situated along major roads on the regional arterial grid network. The supergrid addresses the need for a consistent level of service across all served jurisdictions. Regional funding of bus operations along the arterial grid network ensures a degree of consistency in service levels across jurisdictions, which may not otherwise be possible due to varying funding limitations at the local level. Regional funding has been allocated for bus operations on the Regional Grid throughout the RTP planning period. This represents approximately 17 percent of the total regional funding budget allocated for transit. There are a total of 32 Regional Grid routes identified for funding. It should be noted that regionally funded bus routes will be phased in over the 20 year program to allow for the acquisition of transit fleet and the construction of supporting infrastructure (i.e. operations and maintenance facilities, passenger facilities, road improvements, etc.) Figure 10-4 depicts the Regional Grid transit services that will be regionally funded.

Bus Operations: Other

In addition to the BRT/Express and Regional Grid services, regional funding for operating costs for the period FY 2007 through FY 2026 has been allocated to other bus services. These services include rural/flexible routes, commuter vanpools and paratransit services.

- **Rural/Flexible Routes** - This service type addresses the need to provide connections between the urban and rural communities of the county, serving a range of trip needs including work, shopping, education, and access to various community services. Figure 10-4 includes the rural services.
- **Commuter Vanpools** - Commuter vanpools allow groups of employees to self-organize and lease a vehicle from Valley Metro to use to operate a carpool service, providing a flexible transit solution for those trips not well served by more conventional fixed route service. The vanpool program is managed by RPTA through its complementary rideshare program.

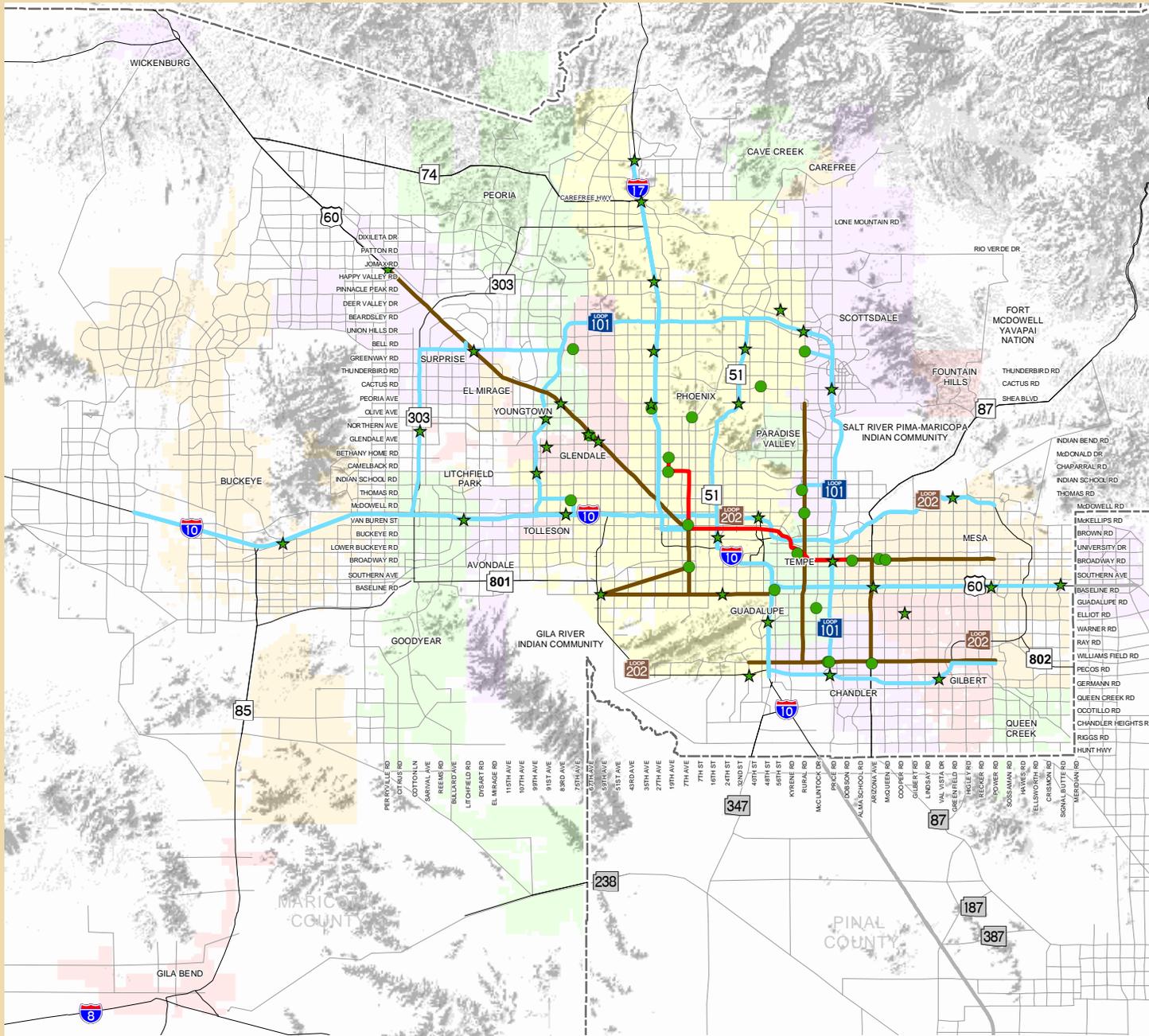
2007 Update Regional Transportation Plan

Fig. 10-3

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Planned Bus Rapid Transit (BRT) System



- Approved Minimum Operating Segment
- Arterial BRT Routes
- Freeway BRT Routes
- ★ Planned or Existing Park-and-Rides
- Planned or Existing Transit Centers
- - - County Boundary
- Freeways/Highways
- Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

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- **Paratransit Services** - Paratransit includes all modes of transit service generally intended to serve only seniors and persons with disabilities. Paratransit service is demand-response and provides curbside pick-ups and drop-offs. Paratransit consists of two types of service: (1) ADA-paratransit service, which is required by the Americans with Disabilities Act (ADA) for all areas within $\frac{3}{4}$ mile of a fixed route; and (2) senior paratransit service, which is an optional service provided for the senior population and disabled patrons who do not meet ADA eligibility criteria. Under the RTP, ADA paratransit service is regionally funded, while senior paratransit service (Dial-a-Ride) continues to be locally funded.

Bus Capital: Facilities

Associated with the expansion of transit service will be the need for additional maintenance and passenger facilities. The identification of specific locations that will host these facilities will occur as the result of ongoing capital planning efforts. These efforts will include the identification and evaluation of potential sites for transit passenger and maintenance facilities. This process will guide the selection of sites, and will be done in cooperation with the host communities, which will include public outreach efforts to identify and address the concerns of affected neighborhoods, institutions, and commercial users.

Bus Capital: Fleet

Over the duration of the planning horizon, the RTP calls for the purchase of 2,138 buses for fixed route networks; 36 buses for rural routes; 1,000 Dial-a-Ride (DAR) vans for paratransit purposes; and 1,404 vanpool vans. These procurements reflect both replacement and expansion vehicles.

Planned Light Rail Transit Facilities

The RTP includes a 57.7-mile Light Rail Transit (LRT) system, which incorporates the Minimum Operating Segment (MOS) currently under construction, a northwest extension, an extension to downtown Glendale, an extension west along I-10, an extension to Paradise Valley Mall, an extension south on Rural Road, and an extension east Mesa Drive. In addition, provisions are made to fund regional LRT support infrastructure. Figure 10-5 depicts the full LRT system envisioned for the region. The amount identified in the RTP from all funding sources for Light Rail Transit expenditures totals \$4.5 billion (2007 \$'s). Of this total, \$2.9 billion (2007 \$'s) will be regionally funded and \$1.6 billion (2007 \$'s) will be funded from local sources, which include farebox receipts.

Light Rail Transit: Minimum Operating Segment

The approved alignment for the Light Rail Transit (LRT) Minimum Operating Segment (MOS) starter segment extends from Bethany Home Road and 19th Avenue into downtown Phoenix; from downtown Phoenix to downtown Tempe and Arizona State University; and continuing to the intersection of Main Street and Sycamore in Mesa. The MOS will be completed by December 2008 and service will be initiated through a single opening of the entire system at that time. The MOS will operate primarily at-grade on city streets. The LRT system will have two tracks, with light rail vehicles running in trains from one to three cars. Important elements of the light rail plan include provisions for park-and-ride lots at the end of rail lines and signal priority strategies to improve speed. Stations are generally located about a mile apart, but closer ($\frac{1}{2}$ mile apart) in urban centers.

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Fig. 10-5

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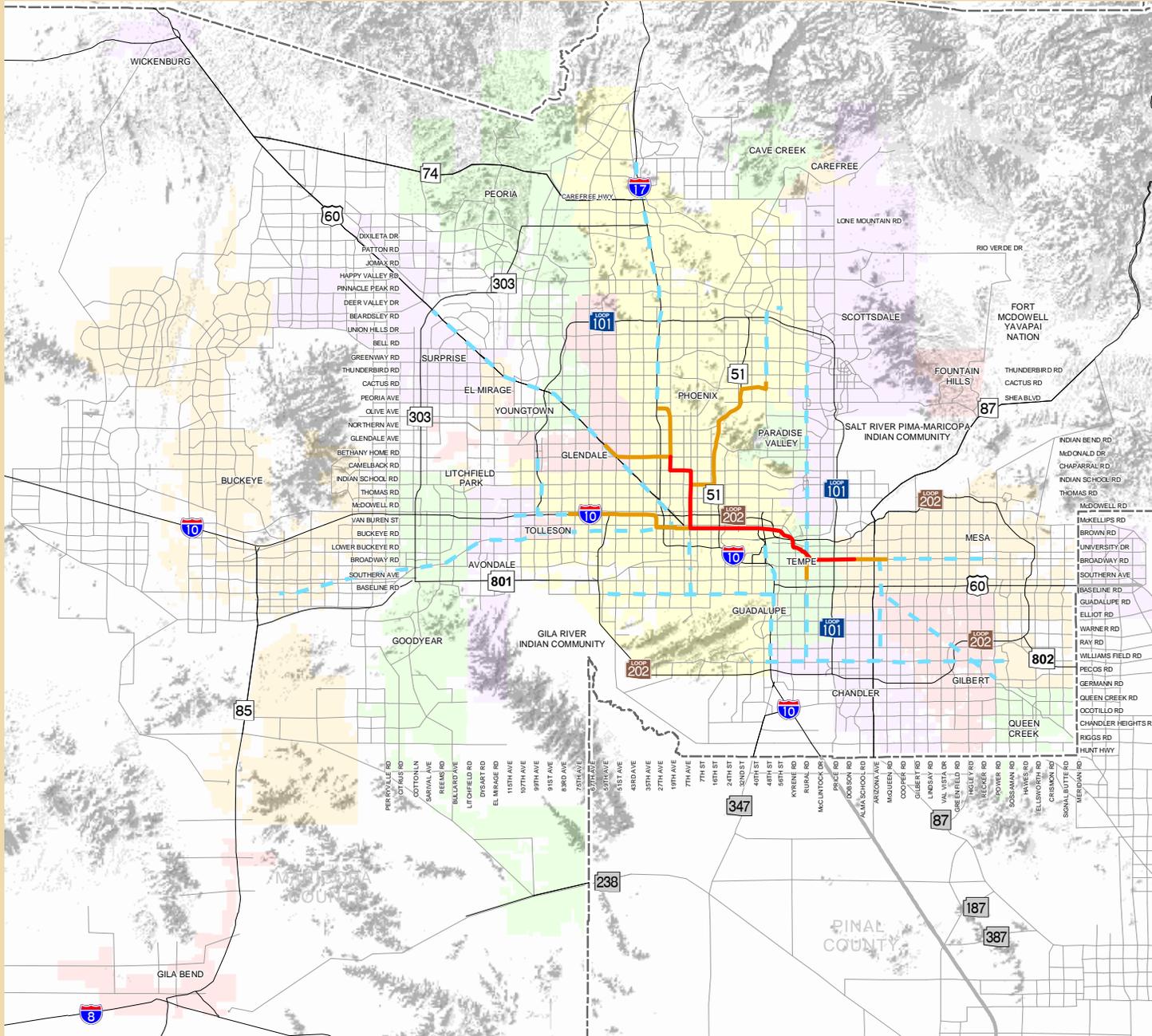


Planned Light Rail Transit (LRT)/ High Capacity Transit

- Approved Minimum Operating Segment
- Light Rail/High Capacity Corridor Extensions
- - - Eligible High Capacity Corridors
- County Boundary
- Freeways/Highways
- Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

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Shuttle buses and an improved fixed route network also play an important role in the light rail system. Half-cent sales tax money from Proposition 400 will not be utilized to pay for route construction of the MOS, but is rather allocated toward certain elements of the support infrastructure.

Light Rail Transit: Support Infrastructure

The RTP allocates funding toward the completion of support infrastructure affiliated with the LRT system. This includes infrastructure along the LRT MOS; infrastructure needs on the Northwest Extension, from 19th Avenue/Bethany Home Road to 25th Avenue/Mountain View Road; infrastructure needs on the Glendale Link from 19th Avenue/Bethany Home Road to Downtown Glendale; and other improvements throughout the future LRT system.

Light Rail Transit: Route Extensions

The RTP includes regional funding for the completion of six additional LRT segments on the system. These include a five-mile Northwest Extension to 25th Avenue/Mountain View Road; a five-mile extension to downtown Glendale; an 11-mile extension along I-10 west to 79th Avenue; a 12-mile extension to Paradise Valley Mall; a two-mile extension south of the MOS on Rural Road to Southern Avenue; and a 2.7-mile extension from the east terminus of the MOS to Mesa Drive. In total, the extensions account for a total of 37.7 miles of the 57.7-mile system.

It should also be noted that local sources will provide a significant share of the funding for the extension to downtown Glendale and the Northwest Extension. For these segments, regional funding in the form of Federal transit funds may provide a portion of the funding, with local sources providing the remaining funding. Other than the funding for support infrastructure as previously identified, it is not anticipated that half-cent funds will be applied to these segments.

Commuter Rail

The MAG High Capacity Transit Study identified over 129 miles of potential commuter rail corridors in the region. The RTP recognizes that these corridors may potentially serve a vital function in addressing future travel needs in the region, especially as continuing land development limits opportunities for developing entirely new high capacity corridors. Depending on future development patterns, population densities sufficient to warrant investment in commuter rail may not occur within the current planning horizon (FY 2028) of the RTP. However, since population expansion could occur at a higher rate than currently projected, it will be important to maintain all modal options in the region. A total of \$5.0 million has been allocated to corridor studies during the planning period for continuing development of commuter rail concepts for the region. In 2007, MAG will develop a Commuter Rail Strategic Plan for Maricopa County and Northern Pinal County. Conclusions from that study will guide future efforts regarding commuter rail service in the metropolitan area.

RPTA Transit Life Cycle Program

The Transit Life Cycle Program is maintained by RPTA/Valley Metro and implements regionally funded transit projects in the MAG RTP. The Program meets the requirements of State legislation, which calls on the RPTA to conduct a budget process ensuring that the estimated cost of the

Regional Public Transportation System does not exceed the total amount of revenues expected to be available. The RPTA Transit Life Cycle Program covers the period FY 2008 through FY 2026 and includes expenses such as bus purchases and operating costs, maintenance facilities, park-and-ride lot construction, light rail transit construction and other transit projects.

Although the RPTA maintains responsibility for the distribution of half-cent funds for light rail projects, Valley Metro Rail, Inc., a public nonprofit corporation, was created to form an alliance among the cities of Phoenix, Tempe, Mesa and Glendale to implement the Light Rail Transit (LRT) system. Valley Metro Rail Inc. is responsible for overseeing the design, construction and operation of the light rail starter segment, as well as future corridor extensions to the system. An agreement between RPTA and Valley Metro rail was executed in FY 2006 to define roles and responsibilities for implementing the light rail portion of the Transit Life Cycle Program. The agreement defines Valley Metro Rail as the responsible agency for designing, constructing, and operating the 57.7 mile light rail system contained in the Regional Transportation Plan.

The RPTA Transit Life Cycle Program is being included directly in the RTP and is provided in Appendix C in its entirety. The Life Cycle Program lists individual routes and projects by the fiscal year in which they are funded, as well as the amount of funding allocated for that year. In addition, funding allocations for system-wide functions are identified on an annual basis. Projects and services are further defined as to facility type, route and project limits. Inclusion of the Transit Life Cycle Program in the RTP will facilitate progress monitoring, as well as the decision-making process regarding priorities, service levels, and project scope adjustments.

It should be noted that half-cent sales tax funding from Proposition 400 will not be utilized to pay for route construction of the LRT/MOS, but rather is allocated toward certain elements of the support infrastructure (regional park-and-rides, bridges, vehicles, and for the cost to relocate utilities). In addition, the LRT extension to downtown Glendale and the LRT Northwest Extension will received only approximately half of their funding from regional sources in the form of Federal 5309 funds for construction. Local sources will provide the remaining half. It is anticipated that a small amount of half-cent funds will be applied to these two segments for certain support infrastructure elements. Proposition 400 half-cent sales tax funding will not be used for operating expenses on any part of the LRT system.

Funding and Expenditure Summary

Table 10-1 has been prepared to provide a summary of the funding picture for the transit element of the RTP. This table lists the reasonably available funding sources for the planning period and the uses of those funds. This includes farebox revenues, as well as operating and capital costs. The balance between funds available and expenditures indicates that the transit element can be accomplished with reasonably available funding sources over the planning period.

The 2007 Update to the Regional Transportation Plan has a horizon year of FY 2028, two years beyond the end of the Transit Life Cycle Program. Since the half-cent tax is considered to be a reasonably available regional funding source, it is assumed that the regionally funded bus service operating in the last year of the Transit Life Cycle Program (FY 2026) will be continued through the end of the RTP planning period (FY 2028). For the LRT system, this two-year period is being treated as a “contingency interval”, and no LRT projects are specifically programmed for the period

in the 2007 Update. Future updates of the RTP may identify a more specific allocation of the funding during the two-year period.

Funding Sources

Regional funding sources shown in Table 10-1 for the transit element include the half-cent sales tax (\$6.0 billion); Federal Transit Section 5307 funds (\$1.9 billion) and Section 5309 funds (\$1.7 billion); Federal Congestion and Air Quality Mitigation funds (\$465 million); bond proceeds (\$342 million); local/other funding sources (\$9.2 billion); and the estimated cash balance of \$39 million in regional funds at the beginning of FY 2008. Debt service and other expenses totaling \$475 million are deducted from these sources, along with an allowance for inflation (\$6.0 billion). This yields a net total of \$13.1 billion (2007 \$'s) for use on transit services and projects. These revenue sources have been major funding elements for transportation facilities in the MAG area for decades and are considered to be reasonably available to the region throughout the planning period.

Program Expenditures

Table 10-1 also lists estimated future costs for the transit element of the RTP, expressed in 2007 \$'s. Expected expenditures during the planning period total \$12.5 billion. This includes \$8.0 billion for bus capital and operating (including vanpool, dial-a-ride and rideshare); and \$4.5 billion for light rail transit capital and operating.

TABLE 10-1: TRANSIT FUNDING PLAN: FY 2008 through FY 2028

FUNDING (Year of Expenditure \$'s in Millions)		
FUNDING (Year of Expenditure \$'s)		Totals
Regional		
MAG Half-Cent Extension	5,957.9	
Federal Transit (Section 5307)	1,881.1	
Federal Transit (Section 5309)	1,715.7	
MAG Federal CMAQ	464.5	
Total Regional Funding		10,019.2
Beginning Balance (Regional Funds)		38.9
Local / Other		
Fixed Route Bus Fares	1,767.0	
BRT Freeway and Express Fares	168.4	
Rural Transit Fares	0.9	
Light Rail Transit Fares	519.4	
Paratransit Vehicle Fares	62.0	
Vanpool Fares	298.7	
Local General Funds	712.6	
Local Sales Tax	5,405.0	
Local Funds Provided for Rail Capital	241.4	
LTAF II	0.0	
Total Local / Other Funding		9,175.4
Bond Proceeds		341.7
Less Allowance for Debt Service and Inflation		
Debt Service	(475.2)	
Inflation	(6,006.8)	
Total Allowances		(6,482.0)
TOTAL FUNDING (2007 \$'s)		13,093.2
EXPENDITURES (2007 \$'s in Millions)		
Regionally Funded		
<i>Capital</i>		
Regional Bus Service	987.4	
Bus Maintenance and Passenger Facilities	620.1	
Light Rail Transit (LRT) Regional Infrastructure	284.7	
Light Rail Transit Extensions	2,615.5	
Paratransit (Americans with Disabilities Act, or ADA, compliant)	99.2	
Vanpool	43.7	
Rural/Non-Fixed Route Transit	3.1	
Total Capital	4,653.7	
<i>Operating</i>		
Regional Bus Service	2,049.0	
Light Rail Transit	0.0	
Paratransit (ADA-compliant)	277.3	
Rural/Non-Fixed Route Transit	15.8	
Total Operating	2,342.1	
Total Regionally Funded Expenditures		6,995.8
Locally / Other Funded		
<i>Capital</i>		
Light Rail	371.4	
Total Capital	371.4	
<i>Operating Costs</i>		
Supergrid	3,133.0	
Freeway Bus Rapid Transit (BRT) and Express Bus	164.9	
Arterial BRT	0.0	
Paratransit	250.6	
Rural Routes	0.0	
Vanpool	194.1	
Light Rail	1,269.0	
Local	0.0	
Planning	50.0	
Travel Demand Management and Vanpool Program	120.0	
Total Operating	5,181.6	
Total Locally/Other Funded Expenditures		5,553.0
TOTAL EXPENDITURES (2007 \$'s)		12,548.8

CHAPTER ELEVEN

AVIATION

The existing airport system consists of 16 airports, including one major commercial facility, Phoenix Sky Harbor International Airport, seven general aviation reliever airports and six additional general aviation airports. One of the airports – Williams Gateway—is currently classified as a general aviation reliever, but is being developed to serve as a commercial service airport to supplement Phoenix Sky Harbor International Airport. A map of the airports is shown in Figure 11-1.

In 2006 the MAG Regional Aviation System Plan (RASP) Update and the aviation planning program were completed. The aviation program examined the future air transportation needs of the region with the aim of maximizing the transportation and economic benefits of airports, while minimizing any adverse impacts related to congestion, the environment and airspace. The Federal Aviation Administration (FAA) is the agency responsible for the planning and management of airspace. Because the work on program was completed, the MAG RASP Policy Committee and the MAG RASP Technical Advisory Committees, which oversaw and guided the preparation of the plan, were eliminated.

An important element of the planning program has been the overall support for Sky Harbor International Airport and Luke Air Force Base. Sky Harbor International Airport served more than 41 million passengers in 2006 and Luke Air Force Base is the largest F-16 training base in the world. These vital facilities not only fulfill air transportation and national defense needs, but they also contribute billions of dollars annually to the regional economy. Future planning efforts will focus upon ground access needs to airports in terms of both highway and transit facilities.

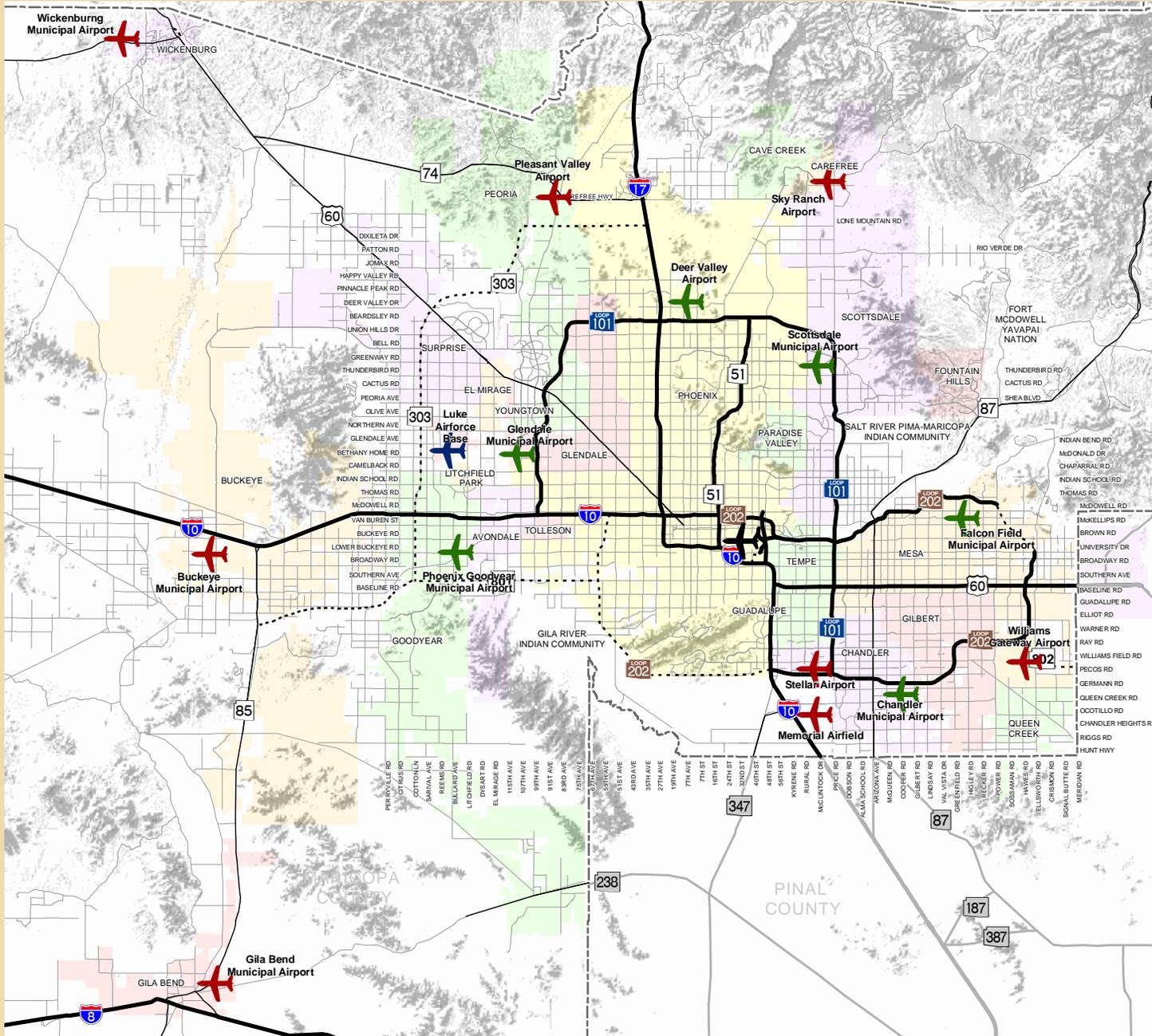
2007 Update Regional Transportation Plan

Fig. 11-1



Regional Aviation System Plan

-  Commercial Service
-  Military
-  General Aviation Reliever
-  General Aviation
-  County Boundary
-  Existing Freeway
-  Planned Freeway/Highway
-  Highways
-  Other Roads



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CHAPTER TWELVE

BICYCLES AND PEDESTRIANS

Maricopa Association of Governments (MAG) has maintained an active role in promoting the establishment of improved travel opportunities for bicyclists and pedestrians for many years. The MAG Regional Bicycle Task Force, which was responsible for assisting in the development of the original MAG Bicycle Plan in 1992, has maintained an active role in promoting improved travel opportunities for bicyclists. The MAG Regional Bicycle Task Force continues to provide key input into bicycle planning and decision making activities. MAG is also a leader in promoting improvement in the Valley's streetside environments to better accommodate pedestrian travel. Past pedestrian planning efforts conducted by MAG and its member agencies have led to a variety of pedestrian-oriented policies, programs and roadway improvements. In 1994, MAG formed the Pedestrian Working Group to promote increased awareness of walking as an alternative mode of travel and to improve facilities for people who walk.

Regional Bicycle and Pedestrian Plans

In February 1992, the MAG Regional Council adopted the MAG Regional Bicycle Plan to address the needs and concerns of bicyclists in the region, and to encourage bicycling as a way to alleviate congestion and air pollution. The MAG Regional Council adopted a Bicycle Plan Update in March of 1999. MAG followed the 1999 Bicycle Plan Update with the Regional Off-Street System (ROSS) Plan, which was adopted by the MAG Regional Council in February 2001. Following these efforts, the MAG West Valley Multi-Modal Transportation Corridor Plan (Plan) and accompanying action plan were adopted by the MAG Regional Council on October 3, 2001. In 1993, MAG developed a plan that identified policies to encourage walking, and suggested areas where these policies might be best implemented.

MAG Regional Bikeway Master Plan

As of 2006, MAG is currently in the process of developing a MAG Regional Bikeway Master Plan, which will incorporate the 1999 MAG Regional Bicycle Plan, the Alternative Solutions to Pedestrian Mid-block Crossings at Canals, and the 2001 Regional Off-Street System (ROSS) Plan. The goal of the MAG Regional Bikeway Master Plan is to update and integrate all three documents into one master plan, in order to develop an inter-connected bikeway system of on-street and off-street facilities. The MAG Regional Bikeway Master Plan will provide a guide for the development of a convenient, and efficient transportation system where people can bike safely to all destinations. This plan recognizes the growing needs of the bicycling public and seeks to encourage more bicycling for transportation and health reasons. Bicycling, as a transportation mode, improves air quality and reduces traffic congestion and is less costly than operating a motorized vehicle. In addition, bicyclists benefit from improved health and fitness.

West Valley Multi-Modal Transportation Corridor Plan

The MAG West Valley Multi-Modal Transportation Corridor Plan and accompanying action plan were adopted by the MAG Regional Council on October 3, 2001. The MAG West Valley Multi-Modal Transportation Corridor Plan creates a master plan and action plan to implement a 42-mile

trail network for pedestrians, equestrians, bicyclists and other non-motorized trail users for the New River and lower Agua Fria River areas. It provides for regional consistency in the development of non-motorized transportation facilities along the corridor by establishing consistent and uniform design for the development of a safe and comfortable multi-modal trail system. MAG continues to serve on the oversight committee of the West Valley Recreation Corridor Board of Directors.

Regional Pedestrian Plan

The purpose of the *Pedestrian Plan 2000* is to identify and recommend programs and actions that guide and encourage the development of pedestrian areas, pedestrian facilities, and create increased willing opportunities as viable mode of transportation and as viable mode of transportation throughout the region. The update incorporates flexible design tools (Roadside Performance Guidelines) to assist MAG member agencies in creating better walking environments within the existing or new roadway network. A stakeholders group was directly involved in the development of the plan update, which was overseen by the Pedestrian Working Group, and adopted by the MAG Regional Council on December 8, 1999.

The plan contains five goals that are vital to creating a mode shift away from driving and towards pedestrian mobility. The five goals are: land use compatibility, public awareness, funding, design for people, and intermodal linkages. One of the major regional initiatives reflected throughout the goals and objectives of the *Pedestrian Plan 2000* is to establish performance guidelines for pedestrian facilities within road right-of-ways. Establishing regionwide performance guidelines, as opposed to rigid roadway cross-sections, provides design flexibility to MAG member agencies. Providing this flexibility within performance guidelines, as opposed to prescriptive cross-sectional standards, will ensure that roadways meet the needs of other travel modes while simultaneously encouraging pedestrian travel throughout the MAG Region.

MAG Pedestrian Policies and Design Guidelines

In 2005, MAG updated the MAG Pedestrian Policies and Design Guidelines, which were originally written in 1995. The Guidelines are intended to provide a source of information and design assistance to support walking as an alternative transportation mode. Through application of the policies and design guidance offered in the document, jurisdictions, neighborhoods, land planners, and other entities will be able to: 1) better recognize opportunities to enhance the built environment for pedestrians; 2) better create and redevelop pedestrian areas throughout the region that integrate facilities for walking with other transportation modes; 3) support the development of areas where walking is the preferred transportation mode; and 4) encourage the development of other independent pedestrian focused transportation facilities. The updated document includes information on elder mobility, Safe Routes to School, and discusses changes in the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

MAG Pedestrian Policies and Design Guidelines Workshops

In order to promote the recently completed MAG Pedestrian Policies and Design Guidelines, MAG sponsored a series of training workshops throughout the MAG Region. A total of six workshops were conducted with 152 representatives from transportation, parks and recreation, development services, economic development and arts in attendance. The presentation consisted of a PowerPoint presentation, handouts and a CD of the actual Guidelines.

Bicycle and Pedestrian Design Assistance Program

The FY 2007 MAG Unified Planning Work Program and Annual Budget, approved by the MAG Regional Council in May 2006, included \$200,000 for the Pedestrian Design Assistance Program and \$300,000 for the Bicycle/Shared-Use Design Assistance Program. The Design programs allow MAG member agencies to apply for funding for the design portion of a bicycle or pedestrian project. The MAG Pedestrian Design Assistance Program was initiated in 1996 to encourage the development of designs for pedestrian facilities according to the MAG *Pedestrian Policies and Design Guidelines*. The intent of the program is to stimulate integration of pedestrian facilities into the planning and design of all types of infrastructure and development. Through the program, the design of pedestrian facilities that are compatible with existing land use and transportation practices is promoted. MAG anticipates that through this program, MAG members and private sector professionals involved in transportation and land use design will become familiar with the MAG *Pedestrian Policies and Design Guidelines* and the opportunities for integrating facilities that support walking into land use and transportation planning. Creating areas where people choose to walk instead of using a private vehicle assists in managing congestion and improving air quality.

The MAG Bicycle Design Assistance Program is new for 2006. The Bicycle/Shared-Use Design program assists jurisdictions by providing design assistance for bicycle and shared-use projects.

Funding Summary

The bicycle and pedestrian element should be viewed as an illustrative plan rather than a fully funded part of the RTP. The cost to reconstruct existing roadways to accommodate the above plan is beyond the reasonable available revenues at this time. The bicycle element can serve as a guide to coordinate street and bicycle investments within cities and between jurisdictions. In addition, the MAG Regional Transportation Plan and MAG Transportation Improvement Program include a strong commitment to implement bicycle facility improvements. It should be noted that many street projects in the TIP that add new through lane capacity include improvements to accommodate bicycle usage. The funding for these projects is accounted for in Chapter Nine - Arterial Streets, as it is not possible to separate out the combined cost of adding new through lanes and bicycle improvements in the same project.

The RTP has identified a share of the regional funding available for bicycle and pedestrian projects. This funding consists primarily of Congestion Mitigation and Air Quality (CMAQ) funds. Table 12-1 summarizes these figures for the planning period.

**TABLE 12-1
BICYCLE/PEDESTRIAN FUNDING PLAN: FY 2008 - 2028**

FUNDING (Year of Expenditure \$'s in Millions)	
	Totals
Regional Funds	
MAG Federal CMAQ	220.1
Total Regional Funds	220.1
Local/Other Funds	
Local Sources (HURF, General Funds, Local Sales Taxes, etc.)	94.3
Total Local/Other Funds	94.3
Allowance for Inflation	(93.7)
Total Funding (2007 \$'s)	220.7
EXPENDITURES (2007 \$'s in Millions)	
	Totals
Bicycle and Pedestrian Projects	
Total New Facilities and Improvements	220.7
Total Expenditures (2007 \$'s)	220.7

CHAPTER THIRTEEN

FREIGHT

The movement of goods into, within, and out of the region is vital to the local economy. The movement of goods is conducted through the utilization of multiple modes of transport, such as air, pipeline, water, truck, rail, or other non-traditional means. Freight transport involves a complexity of networks and players who use a variety of methods, modes, available information technologies, and equipment to move raw materials, semi-processed and processed goods through regional, national and international markets for the purpose of commerce.

In the United States, the freight industry is essentially dominated by the private sector, and includes trucking companies, railroads, air carriers, pipeline industries, couriers, freight brokers, terminal operators, freight intermediaries, freight forwarders, package express carriers, and all other shippers and receivers of freight, as well as all freight industry customers.

Regional Freight Infrastructure

Within the MAG Region, the regional highway network, the regional arterial network, railroads, airports, pipelines, freight terminals, warehouses, and intermodal facilities comprise the region's overall "freight infrastructure." Figure 13-1 displays the current freight infrastructure system that handles the movement goods to, from and within the MAG Region.

Warehouses, trucking companies, freight terminals, manufacturers, wholesale facilities, air couriers, and the local postal system represent some of the primary freight generators located throughout the MAG Region. Other freight generators of significance are the region's intermodal facilities and the primary air cargo airports, which are Sky Harbor International Airport and Williams Gateway Airport.

Freight Modes in the MAG Region

In 2001, 48.9 percent of all aggregate freight that was hauled by truck, rail, or air was received into the region from other destinations outside of Maricopa County. A total of 43.0 percent of all transported freight in the region was shipped out to other destinations throughout Arizona and to other areas of the country. Also, as displayed by Figure 13-2, when considering all aggregate inbound and outbound freight flows for the MAG Region, 86.1 percent of all movements take place by truck, 13.3 percent occurred by rail, and the remaining 0.6 percent was generated by air.

When considering incoming goods, in 2001, 79.3 percent of all freight came from the western region of the United States. The major trading area for incoming goods into the MAG Region consisted of the remaining 14 counties within Arizona. Approximately 35 percent of all incoming freight was generated from areas within the State. When assessing trading areas throughout the United States in 2001, the primary trade area for the MAG Region for all incoming and outgoing freight was the State of Arizona.

2007 Update Regional Transportation Plan

Fig. 13-1

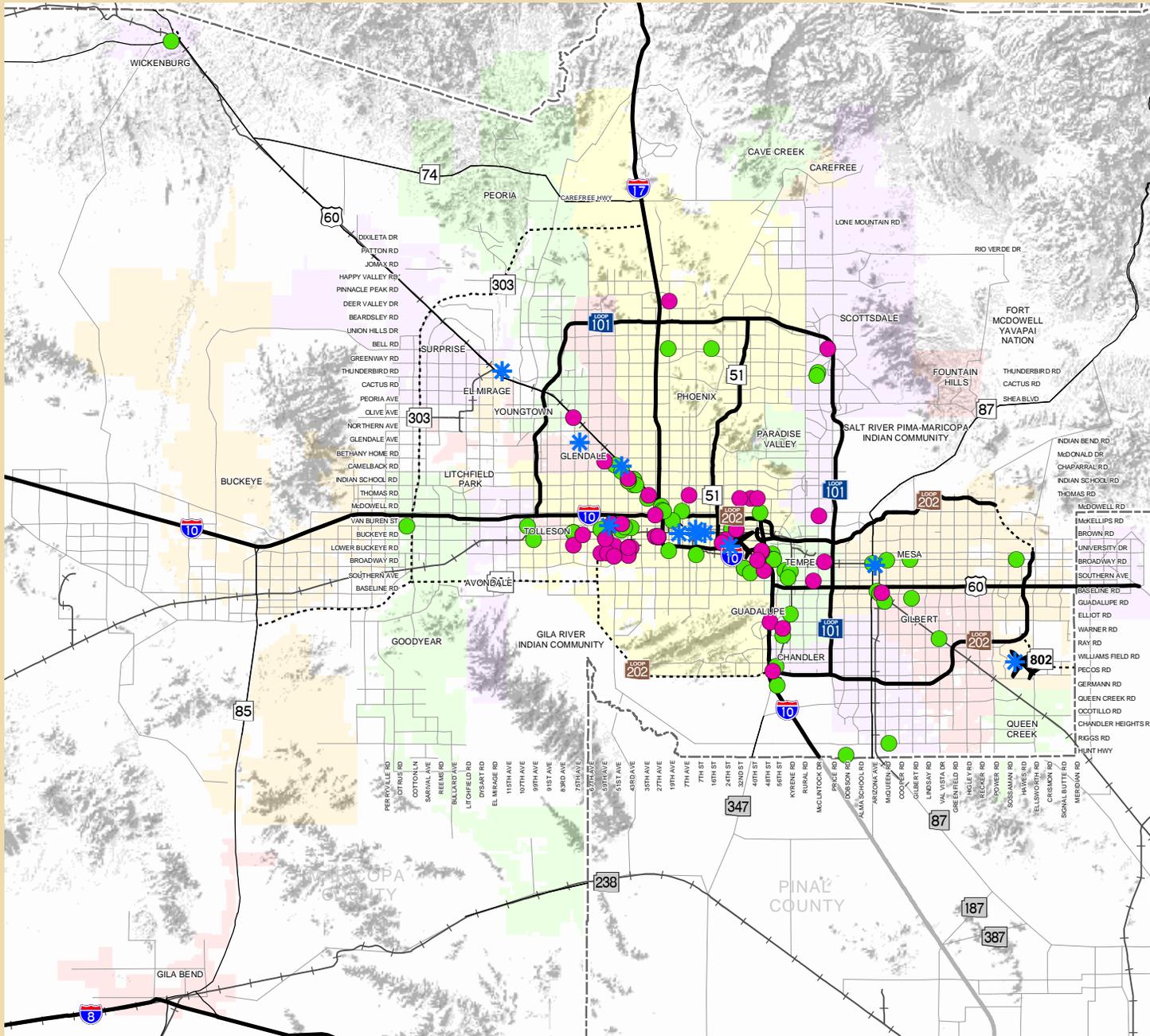


Regional Freight Infrastructure

- Intermodal Facilities
- Freight Terminals
- Warehouses
- Cargo Airports

- County Boundary
- Existing Freeway
- Planned Freeway/Highway
- Highways
- Railroads

Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).



Source: MAG Regional Freight Assessment

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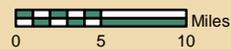
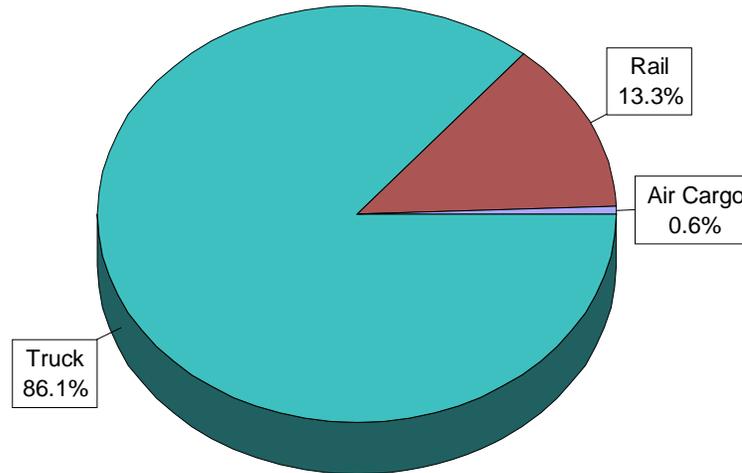


FIGURE 13-2

**TOTAL INBOUND AND OUTBOUND FREIGHT FLOWS
IN THE MAG REGION BY MODE
(by Total Tons)**



Source: Reebie Associates, Maricopa Association of Governments

Overall, the MAG Region receives more freight than it exports to other areas, and the trucking industry maintains a key role in the transporting of goods into, within, and out of the region.

Trucking

Trucks are responsible for moving the bulk share of freight within our region's cities and towns, and their ability to operate in an efficient environment is crucial to maintaining the regional economy. Trucking companies maintain an important role in local economies by providing for the necessary ground-based transportation of goods, and in many cases, needed services or ancillary uses such as the movement of waste products. From a freight perspective, the trucking industry is responsible for bringing in raw materials and processed goods for manufacturing; transporting freight to and from intermodal facilities; distributing goods to warehouses and retail locations; and delivering goods to businesses and consumers.

In 2001, a total of 80.2 percent of all inbound freight was received through truck transport. Also, 95.5 percent of all goods that were sent out of the region were shipped through the use of a truck. As displayed by Table 13-1, in 2001 the majority (59.2 percent) of all outbound truck freight was shipped to other destinations through for-hire Truckload (TL) movements; whereas 38.8 percent of all truck freight consisted of private truck movements, and only 2.0 percent consisted of for-hire Less Than Truckload (LTL) movements. Reported LTL movements as displayed by Table 13-1 consist of individual loads that are less than 10,000 pounds.

TABLE 13-1
INBOUND/OUTBOUND TRUCK FREIGHT MOVEMENTS
(By Type of Carrier – 2001)

OUTBOUND TRUCK FREIGHT		
Type of Movement	Total Tons	Percent
For-Hire Truckload (TL)	13,236,146	59.2
For-Hire Less Than Truckload (LTL)	447,167	2.0
Private Truck	8,675,041	38.8
Total	22,358,354	100.0
INBOUND TRUCK FREIGHT		
Type of Movement	Total Tons	Percent
For-Hire Truckload (TL)	19,056,247	63.9
For-Hire Less Than Truckload (LTL)	1,192,879	4.0
Private Truck	9,572,856	32.1
Total	29,821,982	100.0

Rail

The railroad industry plays a major part in the national and regional economy, and transports certain types of goods throughout the country that would not be cost-effective or feasible to be hauled by other types of freight modes, such as truck, air or pipeline. Railroads in the United States are essentially transporters of bulk quantity goods, which are usually hauled by multiple train carloads over long distances. Trains are often the mode of choice for low value, bulk commodities that are not extremely time sensitive.

At present, there are a total of three operational railroads in the MAG Region. These railroads include the Burlington Northern and Santa Fe Railway (BNSF), the Union Pacific Railroad (UP), and the Arizona and California Railroad (ARZC). The BNSF and the UP are classified as Class I carriers, whereas the ARZC is considered to be an active Short Line, or Line Haul railroad. As of 2003, the BNSF maintained approximately 70 miles of active track in the MAG Region, the UP maintained a total of approximately 180 miles of active track, and the ARZC maintained a total of about 27 miles of active track.

From a broader, regional and national perspective, the BNSF and the UP railroads maintain lines that are part of an integrated, transcontinental system. The BNSF line that maintains operations in the City of Phoenix travels northwest through the Town of Wickenburg, across Yavapai and Coconino Counties, to a junction near Flagstaff, Arizona. The northern BNSF line serves as an important link between the ports of California, the Chicago metropolitan area, and a number of East Coast markets. The ARZC is located in the far northwest region of MAG. The ARZC line branches off from the BNSF line near the Town of Wickenburg, and exits the region at the La Paz County border, located on the western boundary of the MAG Region.

The current UP rails located in the Phoenix metropolitan area are essentially a northern track

network that extend from the southern UP main line, which is located in the southern MAG Region. The southern MAG UP line travels east and west throughout the region and the State of Arizona, and serves as a viable east-west transcontinental connection between southern California; the City of Chicago; the ports of the Gulf Coast; markets in the eastern U.S.; and a number of cities throughout the south. Within the MAG Region, the northern UP branch extends from its origin in central Pinal County, and enters into the metropolitan Phoenix area from the southeast valley. The northern UP line travels west into downtown and terminates near the Palo Verde nuclear facility in the West Valley. Today, all northbound and southbound freight to Phoenix that travels along the existing UP lines originates near Picacho Junction, which is located near the City of Eloy in central Pinal County.

Within the MAG Region, each of the existing railroad companies that are presently conducting operations are primarily involved in the movement of freight. The only section of rail that presently contains Amtrak passenger service is located in southern Maricopa County along the UP mainline. The Phoenix metropolitan area presently lacks any viable form of commuter or passenger rail service.

The BNSF Railway currently maintains four active intermodal facilities within the MAG Region. The UP also maintains four active intermodal facilities. All BNSF and UP freight operations utilize numerous rails, and each company also maintains their respective areas of right-of-way within their designated track areas, transfer areas, and switching facilities. The primary modes of access for all eight of the identified BNSF and UP intermodal facilities include rail and truck.

As indicated in Table 13-2, 88.2 percent (7,117,336 tons) of rail cargo was inbound, and 11.8 percent (954,067) was outbound from the region in 2001. When assessing the types of movements that occur in the rail industry, most goods are either categorized as being transported by carload or intermodal rail. Unlike other areas of the country where intermodal rail freight can be transferred by truck, pipeline, air or water, within the MAG Region, the only connecting mode with intermodal rail freight is through truck.

TABLE 13-2
INBOUND/OUTBOUND RAIL MOVEMENTS
(By Type – 2001)

OUTBOUND RAIL FREIGHT		
Type of Movement	Total Tons	Percent
Carload	606,301	63.6
Intermodal	347,766	36.4
Total	954,067	100.0
INBOUND RAIL FREIGHT		
Type of Movement	Total Tons	Percent
Carload	6,261,089	88.0
Intermodal	856,247	12.0
Total	7,117,336	100.0

By definition, intermodal rail is considered freight that utilizes various combinations, such as highway and rail. This is common for Container-on-Flatcar (COFC) and Trailer-on-Flatcar (TOFC) movements, where the long haul portion of the trip is conducted by flat car, and the pickup or delivery of the container or trailer is conducted by truck. By contrast, carload rail freight is non-intermodal, and is conducted through the transport of other means.

Air Cargo

The Air Cargo, or “air freight” industry in the United States maintains a very important role in the overall freight transportation industry, and generates billions of dollars on an annual basis. Although the bulk share of goods that are transported in the U.S. by plane are relatively low in comparison to the truck and rail freight modes, the air cargo industry continues to play an important role in specific segments of the overall goods movement process. The industry serves a number of particular markets, which are primarily focused on time-sensitivity issues, accommodating high-value commodities, and goods that solely rely on air transport for a variety of reasons.

Any form of freight that is transported by plane is considered air cargo. According to the U.S. Department of Transportation, for identification purposes, air freight services are categorized into whether goods are time sensitive, or less time sensitive; whether they are sent by integrated or non-integrated providers; or by the major type of cargo carrier, which are identified as being one of the following: express carrier, scheduled, mail or chartered air service providers.

There are presently a total of 12 airports located throughout the Greater Phoenix Metropolitan Area of MAG. Of these airports, Phoenix Sky Harbor International and Williams Gateway are the primary airports that maintain functional air cargo operations that significantly contribute to the regional economy. Sky Harbor International and Williams Gateway are the largest airports in the MAG Region, and maintain considerably active schedules for inbound and outbound air freight.

At present, Sky Harbor International Airport maintains four active air cargo facilities on the west side of the airport, which provide non-integrated and integrated air cargo services. Cargo Buildings A, B and C contain a total of 197,760 square feet of space, and collectively have a total of 103 air cargo bays to facilitate planes and air cargo.

At present, air cargo operations at Williams Gateway are comprised of specialized services, and are essentially comprised of unscheduled charter flights. However, according to the *Williams Gateway Airport Master Plan*, there are specific plans to increase air cargo services to serve the growing demands of the East Valley of metropolitan Phoenix, and to alleviate cargo volume at the Phoenix Sky Harbor International Airport.

Future dedicated air cargo facilities have been planned for the east and west sides of the airport, and there is a planned expansion of one of the airport’s runways to effectively accommodate air cargo aircraft. At present, Williams Gateway is actively working on the development of new cargo facilities, which includes an \$11 million cargo ramp that is currently under construction. They are also leasing land adjacent to the ramps for new cargo related buildings.

In 2001, there was a total of 342,674 tons of inbound and outbound air cargo moving in and out of the MAG Region. Of this amount, 72.1 percent (247,172 tons) was inbound, and 27.9 percent (95,502) was outbound from the region. Approximately 0.3 percent of all inbound and outbound

freight movements within the MAG Region were conducted by air.

Pipelines

At present, the El Paso Corporation and the Southwest Gas Corporation are the only companies that are actively involved in the regional distribution of natural gas products for residential and commercial use. In addition to these companies, there is a primary metropolitan pipeline terminal facility located on the west side of the City of Phoenix. This facility is located near I-10 and provides refined oil and gasoline products that are transferred to trucks. It also contains main pipelines that connect with the States of California and New Mexico, and a series of smaller pipelines that connect to Phoenix Sky Harbor International Airport and Luke Air Force Base. The facility also contains a smaller line that extends south to the Tucson area.

Future Regional Freight Planning

In 2004, MAG completed a comprehensive *Regional Freight Assessment* of the region. The *Regional Freight Assessment* represented an in-depth inventory and analysis process that addressed various aspects of the freight transportation industry; provided an analysis of freight flows, the total amount of transported tons, and the types of commodities that were moved; and also provided an overview of the modes of transport that are responsible for moving goods to, from, within and throughout the MAG Region. In addition to this assessment, past regional freight planning activities have included: 1) developing an Intermodal Management Systems report, which is considered in the preparation of the MAG Transportation Improvement Program, 2) conducting freight forums, which provided goods movement providers and users an opportunity to give input on transportation needs and investments, and 3) considering freight movement factors as a part of modal plan development, which has been specifically addressed in the airport planning process.

Future steps in freight planning include: 1) continuing to monitor the impact and role of freight in the regional transportation system, 2) projecting future overall goods movement demand, within, into and out of the region, 3) expanding the freight element of the regional transportation network modeling process, 4) enhancing coordination and involvement of the “freight community” in the regional transportation planning process, and 5) investigating the potential for developing a separate regional freight plan, including the organization and structure of freight planning and infrastructure needs to facilitate freight movement across the region.

CHAPTER FOURTEEN

SPECIAL NEEDS TRANSPORTATION

The transportation needs of special populations are a regional concern. Limitations caused by age or disability often complicate the process of securing transportation for a portion of the population. In addition, those who are seeking employment or training, and those who lack financial resources find limited transportation options available to reach second shift and weekend employment. Changes in Federal welfare laws now limit cash assistance to a five-year job lifetime limit, and require recipients to enroll in education and training, and to seek employment within a two-year time frame. There are thousands of people receiving this assistance in the region, and they must transport their children to child care in addition to meeting employment and training requirements.

Special Transportation Services

The Maricopa County Special Transportation Services (STS) provide transportation assistance to the most transit dependant populations in the MAG Region, which include the elderly, disabled, and low-income individuals. Assistance is provided through the following programs as identified below. STS owns and operates a 70-van fleet with a trained and paid driver staff serving primarily the urban and suburban areas of Maricopa County.

Work Links

Work Links is a service for low-income workers. The program is designed to assist low-income persons with transportation to work, and transportation to work-related activities. For qualified clients, taking and picking up dependants from daycare is also included. Transportation Mobility Specialists work with participants to assess transportation needs, and match them with a transportation option that accommodates their specific needs. In addition to providing connectivity to a variety of public transportation options, including carpools/vanpools, Work Links also provides van transportation, bicycles, vehicle repair and emissions retrofitting, and gas stipends when the budget allows for such services. STS operates this program countywide in partnership with a number of transportation and human services providers and employment centers. The primary funding sources for this program are the Federal Transit Administration's Job Access and Reverse Commute funds, Maricopa County Workforce Connections, the International Rescue Committee, and MAG's Federal transportation funds. From July 1, 2005, to June 30, 2006, the Work Links program provided more than 68,000 trips serving more than 1,230 people.

Special Needs

Special Needs is an advanced reservation transportation assistance program that provides almost 30,000 local trips to elderly, disabled, and low-income individuals on an annual basis. Due to the high cost of private transportation services, many seniors would be unable to address ongoing health issues that result from the aging process. In addition, Maricopa STS drivers are trained to directly assist clients to and from the vehicle. This service is not available from cab companies or most public or private transportation resources.

Transportation is cost-free to the participant and is provided Monday through Friday, between the hours of 8:00 a.m. and 4:00 p.m. Trips may be scheduled for medical, dialysis, recreational, shopping, social service, adult-day care, and/or employment. Because special needs trips are assessed a fee for service, the allowable trip purpose is at the discretion of the jurisdiction.

Senior Transportation

With subsidies from the Area Agency on Aging, Maricopa County transports senior citizens to and from senior centers totaling almost 60,000 trips annually. Service is available Monday through Friday, excluding holidays, and is often the primary source for socialization for participating seniors. Clients are approved for service on a “first come, first serve” basis, and must be at least 60 years of age to participate. Transportation is cost-free to the participant and is provided between the hours of 8:00 a.m. and 4:00 p.m.

Home Delivered Meals

The Maricopa County STS provides critical services that address the health and safety needs of vulnerable individuals and are often the only meal of the day for a senior or disabled person. In addition, drivers for Home Delivered Meals (HDM) drivers perform a site visit, or *welfare check* for the clients to see if they are safe. There have been instances where these “welfare checks” have saved the life of a senior who has fallen, or has been the victim of a stroke and unable to contact emergency services. STS delivers more than 120,000 nutritious noon meals to homebound elderly and/or disabled persons on an annual basis.

Southwest Inter-City Transit System (Route 13)

Using Job Access Reverse Commute funds, Maricopa County STS has helped to support the establishment of Route 131 in the southwest valley. The Route 131 serves five major communities as a circulator route and connects to the regional system. The Routes Ridership has significantly increased since the services began.

Ajo and Gila Bend Regional Connector Bus Service (Route 685)

Since March 2005, weekday bus service between Ajo and Gila Bend to Phoenix has been operating as Route 685. This Regional Connector service is sponsored by the Arizona Department of Transportation, Valley Metro, Maricopa County, and Pima County in an effort to provide citizens additional transportation options for employment, medical, and social needs, and shopping trips.

Elder Mobility Concerns

By the year 2021, approximately 22 percent of the residents of Maricopa County will be age 60 or older. Of this number, approximately one third will be 75 or older. Although the seniors of the future will be healthier, better educated, and more financially secure than comparable elders of a few years ago, many will experience physical, financial, emotional and mental barriers in using various modes of transport. Elders who live alone; have disabilities that prevent them from driving; lack the availability of close-by family members; and/or have limited financial means, will face even more difficult and life-threatening transportation challenges.

Regional Action Plan on Aging and Mobility

In response to such needs as provided above, MAG began an intensive process to develop a *Regional Action Plan on Aging and Mobility*. MAG brought together experts and concerned citizens to form the Elderly Mobility Stakeholder Working Group. The group divided into subcommittees, who studied and then developed 25 recommendations for an action plan based on Infrastructure and Land Use, Alternative Transportation Modes, Driver Competency, and Education and Training needs. The plan provided a comprehensive overview of senior mobility issues and was adopted by the MAG Regional Council on October 3, 2001.

Human Services and Senior Transportation Assessment and Coordination Project

As of 2006, MAG is working in conjunction with the Arizona Department of Transportation (ADOT), the Governor's Office, the Arizona Department of Economic Security, and Maricopa County on the *Arizona Rides* initiative. The initiative is part of the State's response to the Federal Transit Administration's *United We Ride* program. The program ensures better cooperation and collaboration between transportation providers that serve human services and other special needs populations.

The purpose of the MAG Human Services and Senior Transportation Assessment and Coordination project is to develop an implementation plan that is responsive to the *Arizona Rides* initiative. The project will ensure maximum feasible coordination between human services agencies that are receiving Federal financial assistance, in order to increase the efficiency of funds that are currently used for client transportation. The project will also work toward the reduction of redundant or overlapping duplicative services.

Coordinated Public Transit/Human Services Transportation Plan

As a condition for receiving formula funding under certain Federal Transit Administration programs, proposed projects must be derived from a locally developed Public Transit/Human Services Transportation Plan. The Plan must have been developed through a process that included representatives of the public and private sectors, non-profit transportation and human services providers, and members of the general public. MAG is in the process of preparing this plan and will meet the Federal Transit Administrations requirements for its completion and adoption.

The development of the plan is being accomplished through the Human Service and Senior Transportation Assessment and Coordination Project. This project is aimed at ensuring maximum feasible coordination between and among human services agencies receiving Federal transportation dollars, increasing the efficiency and effectiveness of funds utilized for transportation, and reducing redundancy/overlap of service. Key steps in the project include:

- **Inventory and analysis** - Compile data on current human service and senior transportation providers. Analyze programs in terms of costs, ridership demand, vehicle investment, vehicle utilization, duplication of services, and service gaps.
- **Best practices review** - Search for potential "best practice" models from areas similar to the MAG Region in terms of geographic size, population, and existing scope of senior and

human services transportation. Identify an extensive roster of “best practices” along with current research and reports, and other current media stories to identify best practices.

- **Transportation Coordination Stakeholder Group** - Establish a Transportation Coordination Stakeholder Group, representing human service agencies, elderly mobility stakeholders, service providers in the region, individuals who support *United We Ride* objectives, key decision-makers, and people willing to assume leadership positions on coordination issues. The group will review and recommend strategies and models that are acceptable within the goals of the major funding programs.
- **Transportation coordination approaches** - Identify and describe potential approaches, including networking, cooperation, coordination, collaboration, and consolidation. Additional features covered include pooled acquisition, insurance, maintenance, and brokerage.
- **Alternatives evaluation** - Prepare an evaluation of the various alternatives based on local objectives and the extent to which each option achieves program goals, ease/difficulty of implementation, adaptability to current and changing technology, cost, and other factors.
- **Potential funding sources** -Once the Stakeholder Group has agreed to a preferred strategy(ies), identify the financial costs of the proposed strategies to be implemented over the planning horizon, depending on the difficulty of the preferred alternative. Identify all existing funding used to support senior and human services transportation and any new or potential funding.
- **Strategic plan for the region** - Develop an overall public transit/human services strategic coordination plan, which addresses governance and organizational structure; program management; operations methods; roles and responsibilities of agencies; staffing requirements; facility requirements; projections of annual passenger trips; cost estimates and financing plan; estimates of revenues; and potential obstacles to the successful implementation of the plan.

CHAPTER FIFTEEN

TRANSPORTATION ENHANCEMENT ACTIVITIES

The purpose of this chapter is to provide an overview of the Transportation Enhancement Program in the MAG Region, and to address the role of transportation enhancements and their function in the regional intermodal transportation system. This chapter will address items pertaining to transportation enhancement concepts, and review the planning and programming process that is followed prior to constructing transportation enhancement projects throughout the MAG Region. The chapter will address information on the types of projects that have been constructed between the years of 1993 and 2006, and will also provide an overview of funding.

Transportation Enhancement Concepts

Transportation Enhancements are a category of Federal funding that comes directly to the State of Arizona through Federal transportation legislation known as the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The Transportation Enhancement Program was originally enacted by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, and was created to improve surface transportation activities by developing projects that go “above and beyond” normal, or routine transportation activities and funding. Enhancement projects are required to have a direct relationship to all elements of the intermodal surface transportation system, with the exception of aviation activities.

As part of an annual appropriations process at the Federal level, funds for transportation enhancement projects are allocated to Arizona through the U.S. Department of Transportation, Federal Highway Administration (FHWA). Although FHWA has issued guidance on how states may implement transportation enhancement funding, individual rules about the program are determined and administered by each state. In Arizona, transportation enhancements are administered by the Arizona Department of Transportation (ADOT), Transportation Enhancement and Scenic Roads Section. ADOT determines how much money will be available throughout the State on an annual basis, and also sets application deadlines for eligible applicants applying for transportation enhancement funding.

In Arizona, projects in the Transportation Enhancement Program can be developed within one of 11 eligible activity categories, which include:

- Provision of Facilities for Pedestrians and Bicycles.
- Provision of Safety and Educational Activities for Pedestrians and Bicyclists.
- Scenic or Historic Highway Programs.
- Landscaping and Other Scenic Beautification.
- Historic Preservation.
- Rehabilitation of Historic Transportation Buildings, Structures, or Facilities.

- Preservation of Abandoned Railway Corridors.
- Control and Removal of Outdoor Advertising.
- Archaeological Planning and Research.
- Environmental Mitigation.
- Establishment of Transportation Museums.

Planning and Programming Process

ADOT determines the annual schedule for receiving transportation enhancement applications from eligible applicants throughout the State. ADOT also sets funding levels and announces how much money will be available within the State's Transportation Enhancement (TE) Program. The availability of transportation enhancement funding for Arizona is typically announced by ADOT during April of each year, and applications are due during the month of September. The ADOT Transportation Enhancement (TE) Program is not a grant program, and functions entirely as a reimbursement program. Awarded applicants must be prepared to pay for all incurred costs, and then request reimbursement for expenditures as specified in a required Joint Project Agreement between their respective agency and ADOT, once a project is awarded. Applicants are also responsible for any costs that go beyond any amount as originally approved in the application.

As part of the annual application process, all projects that are considered for funding are divided into "Local" and "State" categories. Projects located on local roadways are referred to as "Local projects," and projects located on State highways are referred to as "State projects." As specified within ADOT program guidelines, State project funding is intended for those applicants containing projects with a minimum of 75 percent of the proposed project site located within ADOT right-of-way on a State highway; whereas Local project funding is intended for projects situated on local roadways. The total amount of funding that an applicant can request from the Local category may not exceed \$500,000, and the total amount of funding that an applicant can request from the State category may not exceed \$1.0 million.

In 2005, ADOT determined that there was a total of \$9.4 million in available TE Program funding for Arizona. Of this amount, \$6.4 million was available from the Local category, and the remaining \$3.1 million was available from the State category. In 2006 the total allocation was increased to \$12.0 million, of which, \$8.0 million is available through the Local category, and \$4.0 million is available from the State category. ADOT typically receives anywhere from \$12.0 million to \$15.0 million in annual funds from FHWA, with non-awarded funding being reserved for overhead and program implementation.

Unlike a process whereby MAG automatically receives Federal Congestion Management and Air Quality (CMAQ) funds, or a sub-allocation of MAG Surface Transportation Program (STP) Funds, TE Program funds are actually a State "set aside" of STP funds that are open to a competitive process from multiple agencies throughout Arizona. The State Councils of Governments, which consist of the Central Arizona Association of Governments (CAAG), the Northern Arizona Council of Governments (NACOG), the Pima Association of Governments (PAG), the Southeastern

Arizona Governments Organization (SEAGO), and the Western Arizona Council of Governments (WACOG); and the State's Metropolitan Planning Organizations (MPOs), which consist of the Central Yavapai MPO, the Flagstaff MPO, and the Yuma MPO, all compete with MAG for limited project funding.

The application review process for applicants within the MAG Region occurs at two different levels. One review process occurs at MAG internally during the month of June, and the other occurs at the state level, typically during the month of October. On April 28, 1993, the MAG Regional Council approved the formation of the MAG Enhancement Funds Working Group (EFWG) to evaluate and make recommendations to the MAG Regional Council on transportation enhancement applications that would be submitted to ADOT. In establishing the Working Group, it was envisioned that committee members would represent the eligible areas of transportation enhancement activities as defined in Federal legislation. According to guidance given by the MAG Regional Council, the MAG EFWG consists of seven members representing the arts, landscape architecture, historic preservation and archaeology interests, and representatives from the MAG Regional Bicycle Task Force, MAG Pedestrian Working Group and MAG Street Committee. The group is also co-chaired by a member of the MAG Regional Council, and a member of the MAG Management Committee, for a total of nine members.

Each year, the EFWG reviews and ranks all projects submitted for transportation enhancement funding in the MAG Region. After the projects are ranked, the top ranked applications are then forwarded to the Management Committee for recommendation, and then to the Regional Council for approval. After review, the Regional Council usually forwards the list to ADOT during the month of September for further project review and selection at the state level.

After project applications are received from ADOT during September of each year, the applications are then subject to a State review process. During October of each year, ADOT conducts a meeting of the State Transportation Review Committee (TERC), which is comprised of 16 voting members representing the State Transportation Board, ADOT, the State's MPOs and Council of Governments, the Arizona Historic Advisory Commission, the Arizona Commission on the Arts, the Arizona Office of Tourism, Arizona State Parks, and a statewide bicycle representative. The State TERC meets for a period of three days during October to hear project presentations from representatives of each Council of Government and MPO in Arizona, and to review applications for compliance with published selection criteria. The TERC then ranks, selects, and recommends projects for funding to the ADOT State Transportation Board, which usually considers and approves the TERC rankings during the month of November. After a project has been awarded funding, the applicant is invited to an ADOT project scoping meeting to initiate the project development process, resulting in actual construction of the project. This meeting typically occurs within six months from the date of receiving written notification from the State Transportation Board that the applicant's project has been officially awarded.

Transportation Enhancement Projects

Within the MAG Region, the majority of projects have focused on traditional uses of enhancement fund categories, which include items that are focused on the provision of facilities for pedestrians and bicycles, and landscaping. Since 1993, the majority of projects in the MAG Region have received funding to complete multi-use pathways, sidewalks, and support facilities for pedestrians and bicyclists. Since the inception of the Transportation Enhancement Program in Arizona, the

MAG Region has been awarded funding for a total of approximately 30 multi-use or shared use pathways along existing routes and canals, including projects for sidewalks and pedestrian crossings; 18 projects directly related to bike routes and bike facilities; and a number of projects pertaining to streetscapes and pedestrian alleyways, historic preservation and lighting, transportation-related museums, archaeological projects and street signs. Many of these awarded projects have included a secondary component that included landscaping.

Although there are 11 total eligible categories of Transportation Enhancement funding available, approximately 85 percent of all MAG projects through the years have included items directly pertaining to the provision of facilities for pedestrians and bicycles, and landscaping. Appendix E provides an overview of all projects that have received funding between the years of 1993 and 2006 within the MAG Region. These projects are listed in chronological order, and include a brief project description; information pertaining to the total amount of Federal funds awarded for the project; the awarded project's sponsor; and information related to which round and year the project received funding.

Transit - Related Enhancements

The Transportation Enhancement Program is designed to strengthen the aesthetic, cultural and environmental aspects of the region's intermodal transportation system. Although the majority of enhancement projects within the MAG Region have focused on the provision of facilities for pedestrians and bicycles, many of these projects have strong intermodal ties to regional transit activities. Often, many of the constructed pedestrian and bicycle enhancements terminate at major intersections, or along routes containing connections to buses, thus allowing for another choice in transportation for pedestrians and cyclists. Many enhancement projects occur near bus stops and bus shelters, and provide safer pedestrian access through the construction of new paths and sidewalks; ADA-compliant curb cuts; marked pedestrian walkways; and in many cases, also provide an aesthetic upgrade to adjacent transit facilities by providing landscaping and shading, artwork, signs, lighting, benches and trash receptacles.

One example of a transit-related enhancement project is a recently funded project in the City of Tempe. The Tempe Bike Station at the Downtown Transit Center is a facility that allows for a secure, indoor parking facility, which is an integral part of the Transit Center. The Bike Station is actually located within the Downtown Transit Center, which will function as an Intermodal Passenger Terminal by accommodating several modes of transportation. The center will provide pedestrians and bicyclists with choices to buses, and a future light rail station that provides access to other communities in the region.

Since the beginning of the program, the MAG Enhancement Funds Working Group has reviewed a number of transit-related projects for the consideration of funding. Such items have included shading for bus stops, and a number of requests to provide enhancements to areas containing existing transit stops along bus routes connecting to the regional bus system. Although several of these projects have been advanced to the ADOT Transportation Enhancement Review Committee for the consideration of funding, few have been funded. However, MAG acknowledges the need for the interaction of such modes and will continue to pursue transit-related enhancements in the future as part of the program.

Transportation Enhancement Funding Summary

Transportation Enhancements in Arizona were first allocated to communities in 1993. Between the years of 1993 (Round I) and 2006 (Round XIV), there have been a total of 14 rounds of funding. During this period, ADOT has distributed a total of approximately \$126 million in project money to applicants located throughout Arizona. Of this amount, applicants from the MAG Region have received approximately \$25.5 million, or 20.2 percent of all available funding since 1993. Of the \$126 million in ADOT funding, a total of \$83 million has been awarded from the Local Projects funding category; whereas the remaining \$43 million has been awarded from the State Projects category. MAG competes with the other Councils of Governments and Metropolitan Planning Organizations throughout the State of Arizona for available funding, and has received approximately 25 percent of all available local category funding, and 11.5 percent of all available State category funding.

When considering the number of projects awarded, since 1993 ADOT has awarded a total of 340 projects to governmental entities throughout Arizona. Of the 340 projects awarded through the end of 2006, a total of 226 projects have been awarded from the Local Projects funding category; whereas the remaining 114 have been awarded from the State Projects category. Between the years of 1993 and 2006, the MAG Region has been awarded a total of 69 projects, or approximately 20 percent of all projects that were awarded to recipients throughout Arizona. Of these MAG projects, 57 were awarded from the Local Projects category, and 12 were awarded from the State Projects category. Since 1993, MAG has received a total of 25.2 percent of all projects awarded from the Local Projects category, and 10.5 percent of all projects awarded from the Local Projects category.

Table 15-1 provides an overview of the regional transportation enhancement funding recipients between the years of 1993 and 2006 in the MAG Region. The table provides an overview of the total number of projects that have been awarded by applicant, and also displays the total amount of funding received. Within the region, aside from MAG member jurisdictions, funding over the years has also been received by Arizona State University, MAG; the State of Arizona; and the Bureau of Land Management.

**TABLE 15-1
MAG REGIONAL TRANSPORTATION ENHANCEMENT FUNDING: 1993 to 2006**

Agency	Total Number of Projects	Total Amount of Funding	Percentage of Total Funding
City of Phoenix	19	7,209,521	28.26%
City of Glendale	7	2,182,440	8.55%
City of Tempe	6	3,000,000	11.76%
Town of Gilbert	5	2,180,000	8.54%
Maricopa County	4	1,847,080	7.24%
City of Chandler	4	1,456,803	5.71%
City of Mesa	3	1,077,662	4.22%
City of Peoria	3	915,893	3.59%
Town of Wickenburg	2	1,363,334	5.34%
City of Scottsdale	2	864,000	3.39%
State of Arizona	2	723,721	2.84%
Town of Guadalupe	2	651,500	2.55%
City of Avondale	2	445,102	1.74%
Arizona State University	2	268,788	1.05%
Maricopa Association of Governments	1	450,000	1.76%
Town of Cave Creek	1	274,625	1.08%
City of El Mirage	1	268,788	1.05%
City of Litchfield Park	1	140,000	0.55%
City of Goodyear	1	125,000	0.49%
Bureau of Land Management	1	70,800	0.29%
Totals: 1993- 2006	69	25,515,057	100.00%

CHAPTER SIXTEEN

EXTENDED REGIONAL TRANSPORTATION PLANNING OUTLOOK

In 2003, the MAG Regional Transportation Plan (RTP) was updated through a comprehensive review, which resulted in the adoption of a major revision of the RTP by the MAG Regional Council. Since 2003, the RTP has been updated annually to reflect new information and changing conditions in the region. Because the Plan underwent a major revision in 2003, these updates have not included additional new transportation corridors or significant new service additions beyond those already identified in the 2003 version of the Plan. Although there have not been significant additions to the RTP since 2003, MAG has continued to look to the future in an effort to assess regional trends that affect transportation demand, and continues to assess the need for additional new facilities and services. Two important aspects of this ongoing effort are inter-regional cooperation and coordination, and modal and area transportation studies.

Inter-Regional Cooperation and Coordination

One of the key factors affecting future transportation needs in the MAG Region has been the emergence of individual regional growth patterns in Central Arizona into a multi-county matrix of development. This pattern has made inter-regional coordination among planning agencies increasingly important. MAG has pursued inter-regional coordination of its planning programs for many years and will continue to place an emphasis on this effort in the future.

Regional and Statewide Growth Patterns

The MAG Region has been one of the fastest growing metropolitan areas in the United States for the last several decades. Between 1990 and 2000, the region grew from 2.1 million to 3 million people, which represents a 43 percent increase in population growth. According to the mid-decade special Census Survey of Maricopa County, in 2005 the County reached a population of 3.7 million people. This represented a 23 percent increase during the five year period since 2000, maintaining a high level of growth in the region. According to recent population projections, the MAG Region is expected to increase to a total population of 6.1 million people by 2040.

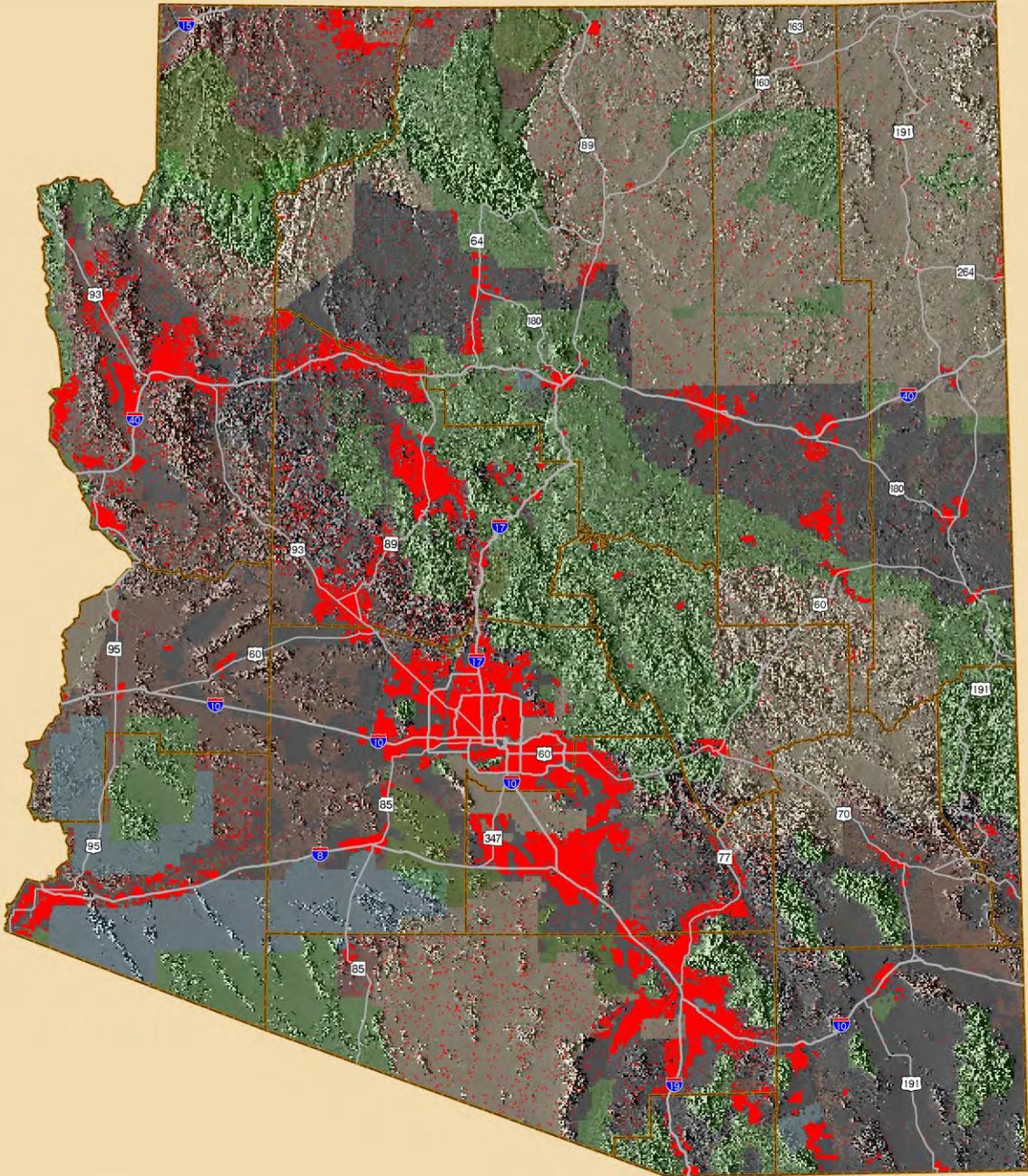
Since 1990, much of the growth in the MAG Region has moved away from the central region of Maricopa County, toward areas of very extensive, vacant parcels of land on the urban periphery. Many developers are now constructing large-scale communities on the existing urban fringe, and offering new, lower-cost residential housing. This trend in development has created significant growth in formerly rural areas of Maricopa County and adjacent Pinal County. Such development places increasing demands on existing transportation routes, and creates the need for new transportation corridors that provide regional connectivity between metropolitan Phoenix and the outer peripheral areas. Aside from the immediate MAG Region, and Pinal County, significant increases in population are also anticipated in adjacent Yavapai County over the next several decades. As displayed by Figure 16-1, the growth of population of Arizona in may require a network of additional and enhanced transportation corridors and transit options to ensure mobility and connectivity from one region of the State to another. A total population of approximately 16

2007 Update
Regional Transportation Plan

Fig. 16-1



Arizona's Future
2050: 16 Million People



- POPULATION
 - FREEWAY
 - MAJOR ROAD
 - COUNTY
- OWNERSHIP
- PRIVATE AND STATE TRUST
 - BLM
 - INDIAN COMMUNITY
 - FOREST, PARK, MONUMENT
 - MILITARY



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

million is projected for Arizona by 2050, which will require creative financing options and engineering solutions for additional transportation infrastructure and services.

Interagency Coordination

The recent and projected population growth throughout the Maricopa County, Central Arizona and other areas of the State is fostering the need for effective, ongoing cooperation and coordination among Councils of Government and Arizona counties. Since the formation of the Maricopa Association of Governments (MAG) in 1967, the agency has continually reached out maintain a dialogue with other agencies, counties and communities throughout Arizona on a variety of issues and common interests. Beginning in the early 1980s, the MAG Executive Director has served as an active member of the Arizona COG Directors Association, which was established for the purpose of fostering communication and ensuring coordinated planning efforts among Arizona's Councils of Governments. MAG has used this association, as well as individual one-on-one sessions, to coordinate with other regions on a variety of regional, State and Federal programs, including human service, land use, environmental, and transportation planning issues of concern. MAG also maintains discussions with other Councils of Governments and similar organizations throughout the United States concerning common transportation issues and Federal policies.

This interagency dialogue has been crucial in order to effectively assess congestion issues, evaluate key transportation needs, and identify funding options for the construction of future transportation corridors to address regional and statewide connectivity. As part of this effort, MAG has developed study partnerships with the Central Arizona Association of Governments (CAAG), the Pima Association of Governments (PAG), and their member agencies. These studies are assessing transportation needs in southeastern and southwestern Maricopa County and northern Pinal County. Another example has been coordination on data collection and population forecasting covering Maricopa, Pinal and Pima Counties. MAG has also initiated discussions with Yavapai County, which is a member of the Northern Arizona Council of Governments. MAG and Yavapai County will discuss a framework study to address transportation needs and connectivity issues between Maricopa and Yavapai counties. These cooperative efforts have also involved the Arizona Department of Transportation (ADOT) and the Federal Highway Administration (FHWA).

Modal and Area Transportation Studies

Modal and area transportation planning studies play a key part in the overall MAG transportation planning process. These studies provide the opportunity to assess growth and resulting transportation needs that are not identified in the current RTP. The study findings provide detailed information for a specified geographic area or modal facility system, and identify potential new RTP elements for consideration in the decision-making process. As noted above, these studies often cover multi-county areas and include the participation of other COGs and agencies outside of Maricopa County, as well as State and Federal agencies.

Southeast Maricopa/Northern Pinal County Area Transportation Study

Completed during 2002, the Southeast Maricopa/Northern Pinal County Area Transportation Study (SEMNPTS) was initiated in an effort to develop inter-county planning; document the transportation relationships between Maricopa and Pinal Counties; examine the long-range

transportation needs of the study area between the two counties; and identify projects to address the area's primary transportation needs. The study represented an opportunity for joint cooperation between Maricopa and Pinal Counties, and reinforce the dialogue between both areas to identify shared, regional transportation issues and concerns. The findings and recommendations of the SEMPTS were considered in the development of the MAG RTP, provided input for the Pinal County Transportation Plan, and identified the major corridors for the ADOT Pinal County Corridor Definition Studies.

The study area for the project was generally located from US 60/SR 79 on the east, Loop 101 and the Gila River Indian Community boundary on the west, US 60 on the north and Coolidge and Florence on the south. In addition to the primary focus area, a larger area was defined for travel demand modeling purposes. The jurisdictions that were included as part of the study included Apache Junction, Chandler, Coolidge, Florence, Gilbert, Mesa, Queen Creek, Maricopa County, and Pinal County.

As part of the study process, the inclusion of additional Traffic Analysis Zones (TAZs) in northern and central Pinal County in the MAG traffic model was necessary in order to accurately portray the travel patterns in the study area. This information was subsequently used in the traffic modeling for the 2003 MAG RTP. MAG worked with representatives and officials from Pinal County, the Central Arizona Association of Governments, and local governments to expand the transportation modeling area, obtaining land use, transportation facility, socioeconomic, and demographic data. This process helped to define a total of 136 new Traffic Analysis Zones in northern and central Pinal County.

ADOT Pinal Corridors Studies

As an outgrowth of the SEMPTS, during September of 2004 the Arizona Department of Transportation (ADOT) initiated a total of three corridor studies within Pinal County, in areas located adjacent to the MAG Region. These studies involved the US 60 Corridor Definition Study, the Williams Gateway Corridor Definition Study, and the Pinal County Corridors Definition Study. The ADOT corridor studies assessed overall need and feasibility, and identified general locations for the development of high-capacity roadways within the study area. The precise location of any potential new roadways would be determined by future studies.

At its February 2006 meeting, the State Transportation Board approved the adoption of the recommendations of the three Corridor Definition Studies into the MoveAZ (Move Arizona) long-range statewide plan. These recommendations included a north-south freeway between Apache Junction and the Florence-Coolidge area; the rerouting of US 60 near Gold Canyon; the extension of the Williams Gateway Freeway between Maricopa County and the US 60 to the east; a State highway across northern Pinal County between Maricopa County and the vicinity of Florence Junction to the east, and a State highway between the Florence-Coolidge area and Eloy. While no funding was identified for the purchase of right-of-way or for the construction of the recommended corridors, inclusion in MoveAZ allowed for the funding of further studies that would identify the actual alignments of the potential new roadways. Other approved recommendations included the widening of existing State Routes 79, 84, 87, 187, 287, 387, 587 and US 60, when and where warranted, as determined by future studies.

Interstate 10-Hassayampa Valley Roadway Framework Study

In 2006, MAG initiated a sub-regional study for the Hassayampa Valley area, which is located in western Maricopa County, on the periphery of the Phoenix metropolitan region. The study is designed to establish a framework for a future transportation system in the Hassayampa Valley Region, and to assess possible corridors for regional connectivity. The need for the study was, in part, connected with concerns by ADOT and FHWA regarding impending development and the number of requests for new interchanges along the I-10 corridor. Among other goals, the study will identify and recommend the reservation of right-of-way for future travel corridors, taking into account local transportation and land use planning. It will also consider the future demands for Interstate I-10 in western Maricopa County, and connections with other regional roadways, including US-60/Grand Avenue, SR-85, Bell Road, and the Loop 303 Estrella Freeway.

The I-10 Hassayampa Valley Roadway Framework comprises the areas between the Gila River, located to the south; State Route 74, located to the North; the 459th Avenue alignment, located to the west; and the Loop 303, located to the East. MAG is serving as the lead agency for the study, with partners and financial participation from ADOT, the Maricopa Department of Transportation (MCDOT), and the Town of Buckeye. The project will receive oversight from an Agency Supervisory Group (ASG) consisting of representatives from MAG, ADOT, MCDOT, the Town of Buckeye, the City of Goodyear, the City of Surprise, and the FHWA.

This project is vital for the MAG Region, because roadway linkages will be identified in areas where limited transportation infrastructure is currently available in western Maricopa County. The recommendations from this collaborative effort will guide development of the transportation infrastructure and help protect investments in the existing transportation system. Recommendations from this study will be considered in future updates of the MAG RTP.

I-8/I-10 Hidden Valley Roadway Framework Study

In 2006, MAG initiated a sub-regional study, the I-8/I-10 Hidden Valley Roadway Framework Study, which will cover southwest Maricopa County and western and central Pinal County. This will be a joint study including MAG, the Central Arizona Association of Governments, county and local jurisdictions in Maricopa and Pinal Counties, ADOT and FHWA. Similar to the Hassayampa Study, this effort is designed to establish a framework for a future transportation system in the study area, and to assess the possible corridors for regional connectivity. It will also address concerns regarding the number of requests for new interchanges along the region's primary transportation and commercial linkages to (I-10 and I-8), and the lack of connections between the study area and metropolitan Phoenix.

The I-8/I-10 Hidden Valley Roadway Framework Study Area comprises the areas between the Gila River and the northern boundary of the Gila River Native American Indian Community to the north; I-8 to the south; Overfield Road to the east (east of I-10 in Pinal County); and 459th Avenue to the west. The entire study area encompasses approximately 3,016 square miles of land. The study will result in the recommendations for establishing a regional roadway framework with Interstates 8 and 10, and other regional roadways, including the Loop 303 Estrella Freeway extension, State Routes 84, 85, 87, 238, 347 and 587. Recommendations from this project will provide transportation planning guidance to MAG, ADOT, CAAG, Maricopa County, Pinal County

Department of Public Works, the Town of Buckeye, the Cities of Goodyear, Maricopa, and Casa Grande, and the Federal Highway Administration. The project will recommend regional connections and roadways to be considered in future updates of the Regional Transportation Plan.

MAG Commuter Rail Strategic Plan

MAG is currently working in coordination with the Arizona Department of Transportation (ADOT) to develop a strategic planning process for commuter rail. The Commuter Rail Strategic Plan would recommend an implementation strategy for commuter rail service in the MAG Region and portions of northern Pinal County.

As part of the development of the Strategic Plan, the planning process would consider the following items:

- Public input to identify the level of support for commuter rail among citizens and elected officials.
- Establish ongoing coordination with private railroad companies.
- Identify opportunities for commuter rail to serve high growth areas and to integrate with other travel modes (e.g., freeways, airports, bus, and light rail).
- Potential environmental risk exposure.
- Right-of-way needs as part of an overall corridor preservation strategy.
- Potential funding options and legislative measures to implement commuter rail.
- The need to provide decision-makers with a comprehensive perspective on the costs, schedules, trade-offs, impacts, and policy implications of alternative implementation approaches.

In addition to this information, the study will also include a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis related to implementing commuter rail service in Maricopa County and northern Pinal County. The plan will identify, categorize and rank issues from the SWOT analysis, evaluate funding options, and prepare a phased implementation strategy for future rail service options. The plan will be completed in 2007.

Valley Metro/Regional Public Transportation Authority (RPTA) Regional Studies

As of 2006, Valley Metro/RPTA has contracted with several consulting firms to complete a number of studies that are designed to assist in the implementation of the agency's 20-year transit program. Valley Metro/RPTA has chosen to implement studies chosen under the associated work categories of Architecture and Engineering, Program Management, and Safety and Security. Work to be completed on the planning studies will define the operational and capital requirements of transit

investments that were originally identified and approved by Maricopa County voters during 2004, as part of Proposition 400. The studies identified below indicate the types of projects that Valley Metro/RPTA has identified as part of the FY 2005-2006 planning assessment process that may possibly include recommendations or projects lead to incorporation into a future update of the MAG RTP.

- **Peoria Transit Planning Study** - This project involves the development of a transit plan for the city, which will provide recommendations for transit routes and associated infrastructure. The plan will include an action plan that is designed to guide the implementation of the plan's recommendations.
- **Surprise Short Range Transit Study** - This project will review existing Park & Ride facilities to ensure that they conform to the transit phasing identified in the 2003 MAG RTP. The Study develops recommendations for new Park & Ride facilities to coincide with the proposed transit routes and associated infrastructure with an action plan that will guide implementation of the plan's recommendations.
- **Phoenix and Peoria Park & Ride Studies** - These projects involve site selection for Phoenix Park-and-Ride locations.
- **Regional Dial-A-Ride** - The purpose of the project is to develop a detailed dial-a-ride plan for the region. The plan will identify demand for the dial-a-ride service; specify routes that are needed to support the dial-a-ride bus system; to identify routes that are included in the RTP, and to coordinate dial-a-ride services with overall demand.
- **Regional Fare Policy Study** - This is a five year study that ensures Rail and Bus fares are fairly priced and integrated. The study will review target fare box recovery ratios, and ensure that revenue impacts are adequately addressed in light of changing economic conditions.

Future Plan Revisions and Illustrative Projects

The transportation studies discussed in the previous section represent collaborative efforts between MAG and other agencies, communities, counties and regions, and have implications for the extended planning effort beyond the currently adopted MAG RTP. Given the current and expected continuing population growth in the MAG Region, these studies provide a perspective on future transportation needs that is essential for effective long range planning. Their findings and recommendations identify potential new corridors or other transportation improvements that can be considered in future updates of the RTP. One approach to inclusion of new corridors or other transportation improvements in future updates is the concept of illustrative projects.

Federal regulations for metropolitan transportation planning identify the concept of "illustrative projects" as an element of the planning process. These are projects discussed in a metropolitan transportation plan for illustrative purposes, that would be included in the adopted transportation plan, if additional resources beyond the reasonable financial resources identified in the plan were available. Illustrative projects can be helpful in guiding transportation and land use planning efforts at both the regional and local level, even though funding for the projects has not yet been identified. This would be especially applicable to making provisions for the development of future

transportation facilities in municipal general plans. There is no requirement to select any project from an illustrative list of projects in a metropolitan transportation plan at some future date, when funding might become available.

SECTION THREE

**SYSTEM OPERATIONS AND
MANAGEMENT**

CHAPTER SEVENTEEN

SYSTEM MANAGEMENT/ITS PLANNING

Transportation System Management (TSM) programs help to accommodate the safe and efficient movement of people and vehicles within the transportation system. The full spectrum of transportation technology applications, known as Intelligent Transportation Systems (ITS), now forms the basis for all of these programs. The products and services resulting from ITS help improve safety and efficiency by:

- Collecting and transmitting information on traffic conditions and transit schedules to aid travelers before and during their trips.
- Relieving congestion by reducing the number of traffic incidents through better traffic flow coordination, detecting and clearing incidents quickly when they occur, and rerouting traffic flow.
- Helping drivers reach desired destinations with navigational aid systems.
- Raising the productivity of vehicle fleets through automated tracking, dispatch and weigh-in-motion systems.
- Benefiting public and governmental agencies through lower costs, enhanced services and a healthier environment for all.
- Helping people and goods move more safely and efficiently by providing information links between travelers, vehicles and infrastructure.

Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems, or ITS, involve the application of advanced sensors, computers, electronics and communication technologies in an integrated manner, along with management strategies, to increase the safety and efficiency of the surface transportation system.

Intelligent Transportation Systems Plan

Since 1996, MAG has taken progressive steps toward mainstreaming the development of regional ITS within the transportation planning process. All planning activities for public sector owned regional ITS infrastructure are currently coordinated and led by MAG. In April 2001 MAG approved a comprehensive ITS Strategic Plan and ITS Architecture for the region. Oversight for this Plan was provided by a group of Regional ITS Stakeholders consisting of the MAG ITS Committee and other regional ITS stakeholders. This Plan currently provides direction to ITS implementation within the region. A project to update both the ITS Strategy Plan and Regional Architecture is expected to begin in FY 2007. It is a Federal requirement that all ITS projects in the region must be consistent with the regional ITS architecture and also include a Systems Engineering Analysis. In August 2006, FHWA and MAG jointly developed an Interim Guidance on Systems

Engineering Analysis Required for ITS Projects. Local agencies are being encouraged to follow this guidance. It is anticipated that all future Federally funded ITS projects will include this analysis as a component in project Design Concept Reports.

Freeway Management System

The Arizona Department of Transportation (ADOT) is utilizing an integrated package of ITS strategies commonly referred to as a Freeway Management System (FMS). The regional FMS first became operational in 1996 and provides surveillance, incident management and traveler advisory functions. As part of this program, a real-time freeway speed map is available on the internet at www.az511.com. This website is heavily utilized by local television and radio traffic reporters as well as members of the public to obtain freeway condition information. Freeway condition information is also available via the telephone based 5-1-1 traveler information system.

The coverage of the regional FMS, as of late 2006, is approximately 100 miles. Completion of the FMS is an important priority for the region. To facilitate rapid FMS expansion, the installation of communication conduits and other basic infrastructure is included as part of all new regional freeway construction, through MAG action that predates the 2003 RTP.

A review of the FMS carried out in 2006 identified the need for increased maintenance of field devices, and the need to replace aging FMS devices, as essential for improving the reliability of the system. This review also identified some measures for reducing FMS costs. The new funding strategy for the allocation of RTP resources for FMS expansion is expected to significantly improve the overall performance, reliability and usefulness of the FMS. It is estimated that by 2023 the total FMS coverage of regional freeways will be approximately 225 miles. This will exclude coverage on Loop 303 and the I-10 Reliever. This total is slightly less than the 275 miles originally identified, due to increased funding for maintenance and instrumentation. Figure 17-1 shows the existing and projected expansion of the regional FMS based on resources allocated towards this in the RTP.

Freeway Service Patrol Program

The Freeway Service Patrol (FSP) program contributes to the safe and efficient operation of the urban freeway system. The patrol vehicles are operated by DPS civilian employees that provide services as Roadside Motorist Assistants on the urban freeway system during peak traffic periods. The many services provided by the FSP include helping stranded motorists to change tires; removing road debris; providing emergency gasoline; and removing abandoned vehicles. The program is extremely popular with the traveling public, with over 10,000 stranded motorists helped annually by the program. Table 17-1 provides a summary of assistance provided to motorists by the Freeway Service Patrol program in 2005 and the first two quarters of 2006.

A joint review of the program, carried out by MAG, ADOT and DPS in 2006, identified increased resource needs for the program. These increases were due to factors such as increasing urban freeway mileage that needs to be patrolled by the FSP, and the need to replace aging vehicles. The current fleet of eight FSP vehicles patrol nearly 260 miles of freeway within Maricopa County. The FSP fleet will approximately double during the planning period and cover nearly 360 miles of freeway.

2007 Update Regional Transportation Plan

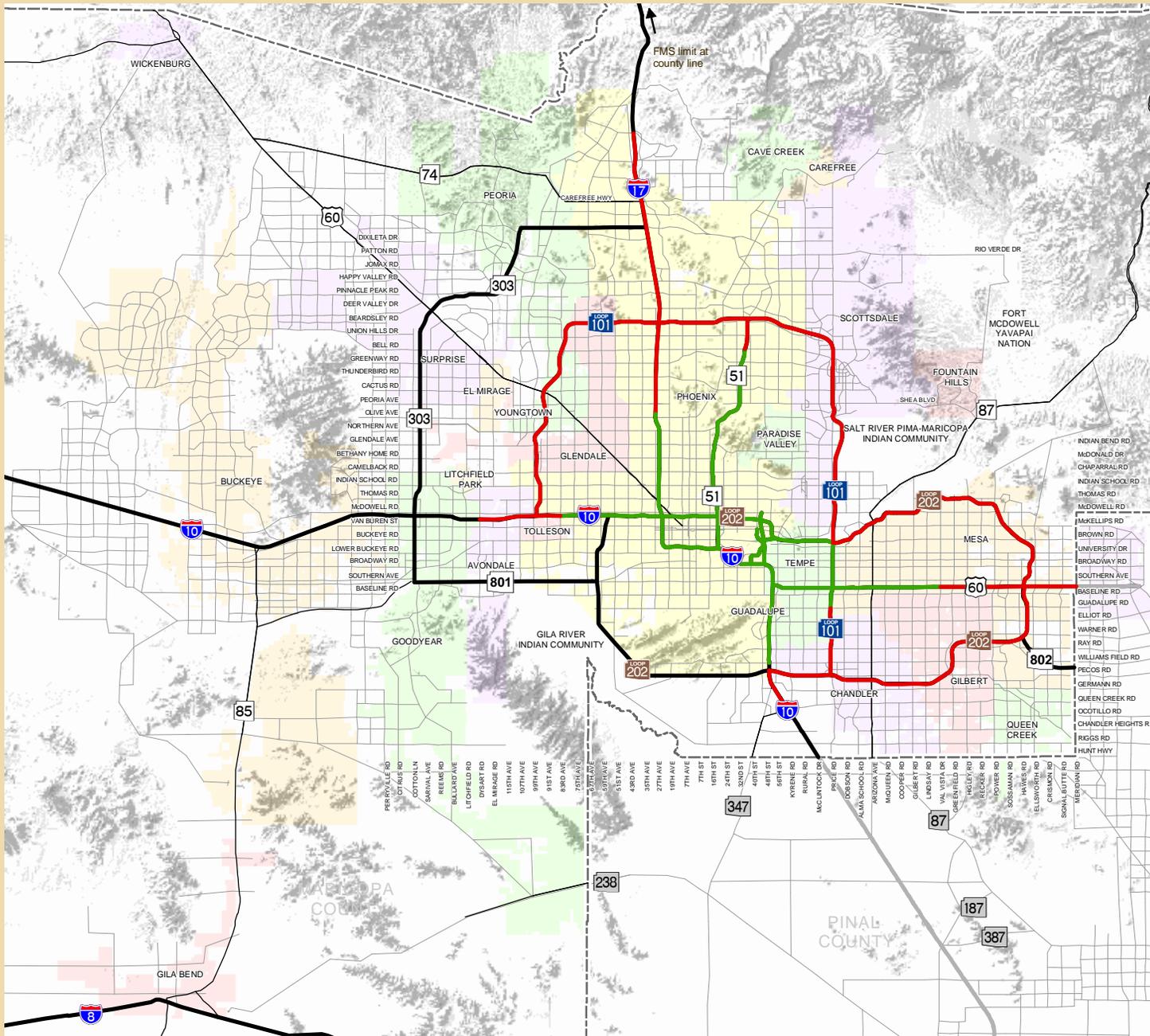
Fig. 17-1



Planned Regional Freeway Management System (FMS)

- Planned FMS Expansion
- Existing and Programmed FMS
- - - County Boundary
- Freeways Without FMS
- Highways
- Other Roads

Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.



TABLE 17-1**SUMMARY OF FREEWAY SERVICE PATROL ASSISTANCE**

Quarter	2005					2006		
	1 st	2nd	3rd	4th	Total	1st	2nd	Total
Miles Driven	68144	78606	53731	77118	277599	79532	93924	173456
Assistance at Crash Scenes	149	187	130	171	637	182	177	359
Removal of Abandoned Vehicles	221	289	300	206	1016	884	1037	1921
Motorists Assisted	2168	2886	2523	2308	9885	2365	2836	5201

Arterial Traffic Management

Traffic management on municipal arterial streets is the responsibility of individual jurisdictions. The larger cities and towns in the region have computerized traffic management systems linked to Traffic Management Centers. Jurisdictions carry out their arterial operations to maximize the safety and efficiency of the entire arterial grid system. This has led to revisions in the approach to future arterial ITS applications in the MAG Region, which, in the past, had emphasized certain high-priority arterial corridors. A preliminary Draft Arterial ITS Plan was developed in 2006. It is anticipated that this will be completed in 2007 as part of an update of the ITS Strategic Plan.

In 2006, a decision was made by MAG to accelerate this funding to the first ten years of the Plan. The annual programming of arterial ITS projects in the MAG Transportation Improvement Program (TIP) have also accelerated. They continue to be programmed based on the principles included in the Draft Arterial ITS Plan. A total of 71 arterial ITS projects have been programmed for FY 2007 through FY 2012.

Regional Concept of Transportation Operations

In 2003, MAG developed the Regional Concept of Transportation Operations, a high-level plan for the coordination of transportation operations in the region. This plan resulted in eleven initiatives to improve transportation operations in the region, which are led by volunteer “champions.” A primary goal of these initiatives is to fully utilize the regional investments made in ITS infrastructure to better manage the transportation system.

ITS Architecture Update

The ITS Architecture provides a common framework for planning, defining, and integrating intelligent transportation systems. It is a product that reflects the contributions of a broad cross-

section of the ITS community (transportation practitioners, systems engineers, system developers, technology specialists, consultants, etc.). The architecture defines:

- The stakeholders involved in transportation system.
- The needs of the stakeholders.
- The functions to fulfill the needs (e.g., gather traffic information).
- The physical entities or subsystems where these functions reside (e.g., the field or the vehicle).
- The information flows and data flows that connect the physical subsystems together into an integrated system.
- The standards that govern the smooth functioning of subsystems and information flows (e.g., communication standards).
- The security of all the ITS systems and information (e.g., controlled access to signal system).
- The maintenance of ITS architecture itself.

The region's ITS architecture was developed as part of the ITS Strategic Plan Update that was developed in 2001. The Strategic Plan provides the vision for ITS developments in the MAG Region and a framework to expand the ITS infrastructure. The regional ITS architecture was based on the then current version of the National ITS Architecture (NIA). The NIA has undergone several significant updates since its inception. Components such as new user services, market service packages and data flows were incorporated into the architecture to form a more sophisticated structure. The regional ITS architecture is planned to be updated in 2007 to accurately reflect the newer ITS components in the MAG Region, and recognize the future needs. The new regional ITS architecture to be developed is expected to have several enhancements. The expected features would help maintain and refine the architecture to a level of detail so that it can serve as a key reference document and the "compass" for guiding future ITS deployment in the region.

Other ITS Elements

In recent years, a number of other systems and initiatives have been pursued as part of the regional ITS planning process. These include the following:

- Traveler Information Systems.
- Arizona 511 Road Information System.
- Electronic Communications/Traffic Broadcasts.

- Regional Concept of Transportation Operations.

Advanced Public Transportation Systems

Advanced Public Transportation Systems (APTS) are defined as advanced technology based ITS applications in public transportation. These applications are relevant to fixed route bus, paratransit, vanpool, and rail. These technologies can be used to improve passenger convenience, vehicle operations, and mechanical systems. Passenger convenience technologies directly benefit passengers through advanced traveler information, real-time schedule updates, and fare payment. Vehicle operations technologies are associated with dispatching vehicles and in-vehicle systems. Mechanical systems technologies are designed to remotely monitor the electrical and mechanical infrastructure of transit vehicles.

The Valley Metro Vehicle Management System (VMS) Master Plan serves as the regional guide for implementing ITS applications in transit infrastructure, and is referred to in the regional ITS architecture. Full implementation of the VMS, which was completed in 2005, has resulted in a fully integrated system with components on 750 fixed-route buses, 200 paratransit (Dial-A-Ride) vehicles and 60 support vehicles. It also includes a Computer Aided Dispatch (CAD) system to track and manage the day-to-day operations of the region's transit vehicle fleet. Other features and devices installed in transit vehicles include: a radio communication system; an Automatic Vehicle Location (AVL) system, which uses Global Positioning Satellite (GPS) receivers to track vehicle location; an automatic passenger counting system; and a next stop announcement system. An Advanced Traveler Information System (ATIS) has been deployed for transit, with 20 electronic signs throughout the city, offering Valley Metro RAPID riders real-time bus arrival information at their stops. The VMS is engineered to be scalable to accommodate any future growth of the Valley Metro agencies.

All transit and light rail operations will be managed from two Transit Control Centers located next to each other. The Transit Control Center is currently fully operational. The Light Rail Transit (LRT) Control Center will become operational with the opening of the LRT in 2008.

Funding and Expenditure Summary

Table 17-2 summarizes the funding dedicated to system management projects and programs, as well as the allocation of these funds. After an allowance for inflation, a total of \$269 million (2007 \$'s) is allocated in the RTP for system management. Specific areas to which this is applied include \$169 million for the freeway management system, \$80 million for intelligent transportation system projects on the arterial street system, and \$20 million for the freeway service patrol. It should be noted that the funding for these programs is also included in the funding and expenditure summaries provided in the modal chapters on freeways/highways and arterial streets.

**TABLE 17-2
SYSTEM MANAGEMENT FUNDING PLAN FY 2008 - 2028**

FUNDING (Year of Expenditure \$'s in Millions)	
	Totals
Regional Funds	
MAG Federal CMAQ	272.4
MAG Area ADOT Funds	25.0
Total Regional Funds	297.4
Local/Other Funds	
ADOT Statewide Funding	23.7
Local Sources (HURF, General Funds, Local Sales Taxes, etc.)	32.3
Total Other Funds	56.0
Allowance for Inflation	(105.3)
Total Funding (2007 \$'s)	248.1
EXPENDITURES (2007 \$'s in Millions)	
	Totals
Transportation Management Systems	
Arterial ITS Projects	79.9
Freeway Management System	146.8
Total Transportation Management Systems	226.7
Freeway Service Patrol	20.4
Total Expenditures (2007 \$'s)	247.1

CHAPTER EIGHTEEN

DEMAND MANAGEMENT

The MAG Region benefits from a broad range of demand management techniques and programs. These programs lessen vehicular congestion by helping to reduce the number of vehicles on the roadway network and making more efficient use of existing transportation facilities. This reduction in vehicle miles of travel also helps improve air quality by decreasing the level of vehicular emissions contributing to the total amount of pollutants in the air. A number of demand management activities are utilized throughout the MAG Region.

Demand Management Programs

Transportation Demand Management (TDM) programs encourage reductions in travel demand within the transportation system. These programs promote alternative modes of travel, which include carpooling, vanpooling, walking, bicycling, alternative work schedules that reduce trips, telecommuting and compressed work schedules. Based on a recent survey, 39 percent of people use alternative modes or work schedules to work one or more days a week (2006 *TDM Annual Survey*, WestGroup Research, 2006).

Rideshare Programs

The rideshare programs support efforts to carpool, and to use alternative modes of transportation and work schedules throughout the MAG Region. Valley Metro Rideshare conducts a variety of services, including a free carpool/vanpool on-line ride matching service; the promotion of Single-Occupancy Vehicle (SOV) alternatives via the Clean Air Campaign; assistance to Transportation Management Networks; assistance to employers in the Maricopa County's Trip Reduction Program; administration of the Vanpool Program, and promotion of the telecommuting program. In addition, the Arizona Department of Administration's Travel Reduction Program offers carpool matching and other rideshare services to all State employees located in Maricopa County.

Clean Air Campaign

The Clean Air Campaign is a public/private partnership with sponsors that include the Greater Phoenix Chamber of Commerce, the Arizona Departments of Environmental Quality and Transportation, Maricopa County, MAG, and Valley Metro. The Campaign urges residents to reduce vehicle miles traveled during peak hours by using alternative modes or alternative work schedules at least one day a week. The campaign has concentrated its media campaign during the particulate pollution season from mid-October through February. Valley Metro, the Arizona Department of Environmental Quality, and Maricopa County continue to implement plans for an Ozone Education Program to address the more stringent 8-hour ozone standard.

Trip Reduction Program

Mandated by Arizona legislation in 1988, employers with 100 or more workers at a site began participating in the Maricopa County Trip Reduction Program (TRP) in 1989. Participating employers are required to conduct an annual survey of the commuting modes of their employees,

and prepare and implement a travel reduction plan to reduce the rates of single-occupancy vehicle (SOV) trips or the single occupancy vehicle miles traveled. The program was amended in July 1994 to include employers with 50 or more employees. In the summer of 1996, a special session of the legislature passed an innovative enhancement to the TRP whereby employers would be allowed to implement several new "flexibility" strategies to meet TRP goals. Under these flexibility provisions, employers have an expanded menu of measures for implementation, including reduction of business-related vehicle trips, off-peak hour commuting, reduced use of other gasoline powered equipment, and stationary source emission reductions.

Vanpool Program

The RPTA has provided vanpool service to interested commuters since 1987. Over 1.4 million passenger trips per year are made in over 304 vanpools. RPTA contracts with a third party private vanpool firm to provide insurance, fleet services, and billing. Seeking to make the program more cost effective, Valley Metro initiated an aggressive van purchasing program using Federal Congestion Mitigation and Air Quality (CMAQ) funds to replace vendor owned vans in the vanpool fleet, and as a result, the agency now owns the entire vanpool fleet. Vanpooling is one of the Transportation Demand Management strategies many employers have implemented as a Trip Reduction Program measure.

Transportation Management Associations

Another approach to travel demand management is the formation of Transportation Coordinator Alliance (TCA) groups. Through these informal associations, employers share resources to promote alternative mode use, improve mobility, or implement trip reduction programs in their local areas. There are ten TCAs in the MAG Region. Together, these TCAs involve about 200 employers. RPTA provides staff support to all of the network groups in the MAG Region.

Telecommuting

With the advent of new technology and the change to a knowledge-based economy, a growing number of employers are allowing their employees to work in a location other than the central office. With telecommuting, employees can be linked to an office by a personal computer. Employees may telecommute either on a full-time or on a part-time basis, with most telecommuters working at or near home one or two days per week. By working at home, or at a satellite work center, the commute trip is eliminated or shortened. About eight percent or approximately 128,000 residents work from home at least once a week. If you include those who are regular and occasional telecommuters, it is estimated that 24 percent of employees telecommute (Employee Telecommuting Study, WestGroup Research, August 2005).

Teleconferencing / Videoconferencing Project

MAG has established a Teleconferencing Program to link MAG and its member agencies via teleconferencing. The first phase of this program, the MAG Regional Videoconferencing System Project, is designed to facilitate communication between agencies while reducing the need to travel to meetings. The MAG Regional Videoconferencing System has a central videoconferencing location at the MAG offices and satellite locations housed at each member agency. This system

allows for communication between MAG and its member agencies as well as among member agencies without direct participation by MAG.

Funding Outlook

Transportation Demand Management programs will be funded by a number of revenue sources during the planning period. Regional funding sources will contribute to rideshare, trip reduction and vanpool activities (See Table 7-4 for air quality programs, and Table 10-1 for other transit). In addition, it is anticipated that elements of travel demand management and the vanpool program will be addressed by local transit funding sources (See Table 10-1).

CHAPTER NINETEEN

CONGESTION MANAGEMENT PROCESS

The need to address traffic congestion throughout the MAG Region is a significant transportation issue. Increases in traffic volumes and the resulting travel delays have caused concerns among residents, the business sector, elected officials, and community leaders, regarding current and future congestion levels. Two primary factors contributing to traffic congestion within the MAG Region are an increasing population and a vigorous economy. These factors have resulted in high levels of internal metropolitan growth, and have also brought significant levels of urban development to previously undeveloped lands on the urban fringe. Such internal and peripheral growth has created greater travel demand throughout the region, bringing about higher traffic volumes and congestion on the existing freeway and arterial roadway network. In addition to lower levels of overall economic productivity from increased travel times, congestion can also have air quality and other quality of life effects. As part of the regional transportation planning process, the Maricopa Association of Governments (MAG) maintains a congestion management process to improve traffic flow and mitigate congestion throughout the metropolitan area.

Congestion Management Concepts

Throughout the nation, regions utilize a variety of roadway and transit improvement programs in an effort to reduce traffic congestion. These programs generally cover four major strategies: (1) constructing additional roadway capacity, (2) expanding public transit service, (3) managing the existing system, and (4) reducing peak-period travel demand. Specific methods may include intersection and other road capacity additions; coordination of traffic signals and use of other intelligent transportation system approaches; promoting the use of buses, light rail and carpooling; and implementation of programs that reduce peak-hour travel demand, such as telecommuting and flex-schedules. In addition, Federal transportation legislation has required that metropolitan planning organizations address congestion in their planning programs.

Intermodal Surface Transportation Efficiency Act (1991)

The Federal Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 called for the development of six transportation management systems, including a Congestion Management System (CMS). In response to ISTEA, MAG has maintained an ongoing process, which provides for an overall analysis of various congestion management strategies and their applicability to the region. This process was based on three planning efforts. The first phase included an analysis of traffic congestion and related problems in the region, and was completed in 1991. The second phase included the development of congestion management alternatives, and the final phase, which was initially adopted in September of 1994, involved the full implementation of the CMS through the recommendations of an annual report and the programming of specific improvements in the MAG Five-Year Transportation Improvement Program (TIP).

The MAG CMS is a multimodal planning process that considers a variety of alternative transportation options in an effort to reduce congestion throughout the greater metropolitan region. This is an ongoing process that provides for the identification of congestion areas; implements the development of management system alternatives and defines the continuing process for traffic

management in the MAG Region; monitors sub-regional and regional travel patterns; and applies multi-modal transportation improvements and travel reduction efforts to the congested portions of the transportation system. MAG, through the annual review, approval and implementation of numerous plans, the Regional Transportation Plan (RTP), and the development of a 5-Year TIP, promotes methods in which to reduce congestion throughout the region.

A key facet of the overall congestion management process is the annual updating of the TIP. Elements associated with this process include an update of all performance and maintenance data; analyzing performance measures, policies, strategies, and rating procedures; preparing a report identifying needs, evaluation procedures and funding opportunities; processing project requests from MAG member agencies; circulating a list of funded and unfunded projects to MAG Committees in an effort to solicit input; approving a draft TIP for air quality conformity analysis; and holding public hearings to approve the annual program.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)

On August 10, 2005, the President signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). This legislation authorized the nation's surface transportation programs for highways, highway safety, and transit over a five year period between 2005 and 2009. As part of this Act, guidance was provided on the desired features of the congestion management process in transportation management areas. Key features of the process include:

- Methods to monitor and evaluate the performance of the multimodal transportation system.
- Definition of congestion management objectives and appropriate performance measures.
- Establishment of a coordinated program for data collection and system performance monitoring.
- Identification and evaluation of anticipated performance and expected benefits of appropriate congestion management strategies.
- Identification of an implementation schedule, implementation responsibilities, and possible funding sources.
- Implementation of a process for periodic assessment of the effectiveness of implemented strategies.

As discussed previously, MAG established a comprehensive Congestion Management System responding to ISETEA (1991). Through the development and implementation of this system, an ongoing congestion management process has been established that complies with the features identified in SAFETEA-LU (2005). The MAG CMS was developed to integrate the transportation project programming process with system performance and system preservation measures, environmental justice measures, and safety and air quality measures. As part of this effort, MAG prepares an annual Transportation Improvement Program (TIP) Guidance Report that provides a systematic examination and review of safety, air quality, socio-economic data and conditions, system

preservation, and a number of other factors in developing and implementing a regional TIP and Regional Transportation Plan. An overview of the MAG CMS is provided in the following section.

MAG Congestion Management System

The MAG Congestion Management System (CMS) is a multimodal planning process that stresses the consideration of a variety of transportation options to address or mitigate congestion. Following the guidelines of ISTEA (1991), and cognizant of the guidance in the new 2005 legislation (SAFETEA-LU), a wide range of strategies are currently considered by the MAG CMS. Such strategies have placed a direct emphasis on alternative modes, demand management, operational procedures and capacity enhancements. In accordance with Federal legislation, MAG has continued to implement a CMS process that addresses performance measures; data collection and system monitoring; strategy identification and evaluation; and project implementation. These process items are discussed further below, and Figure 19-1 provides a schematic overview of the overall MAG CMS process.

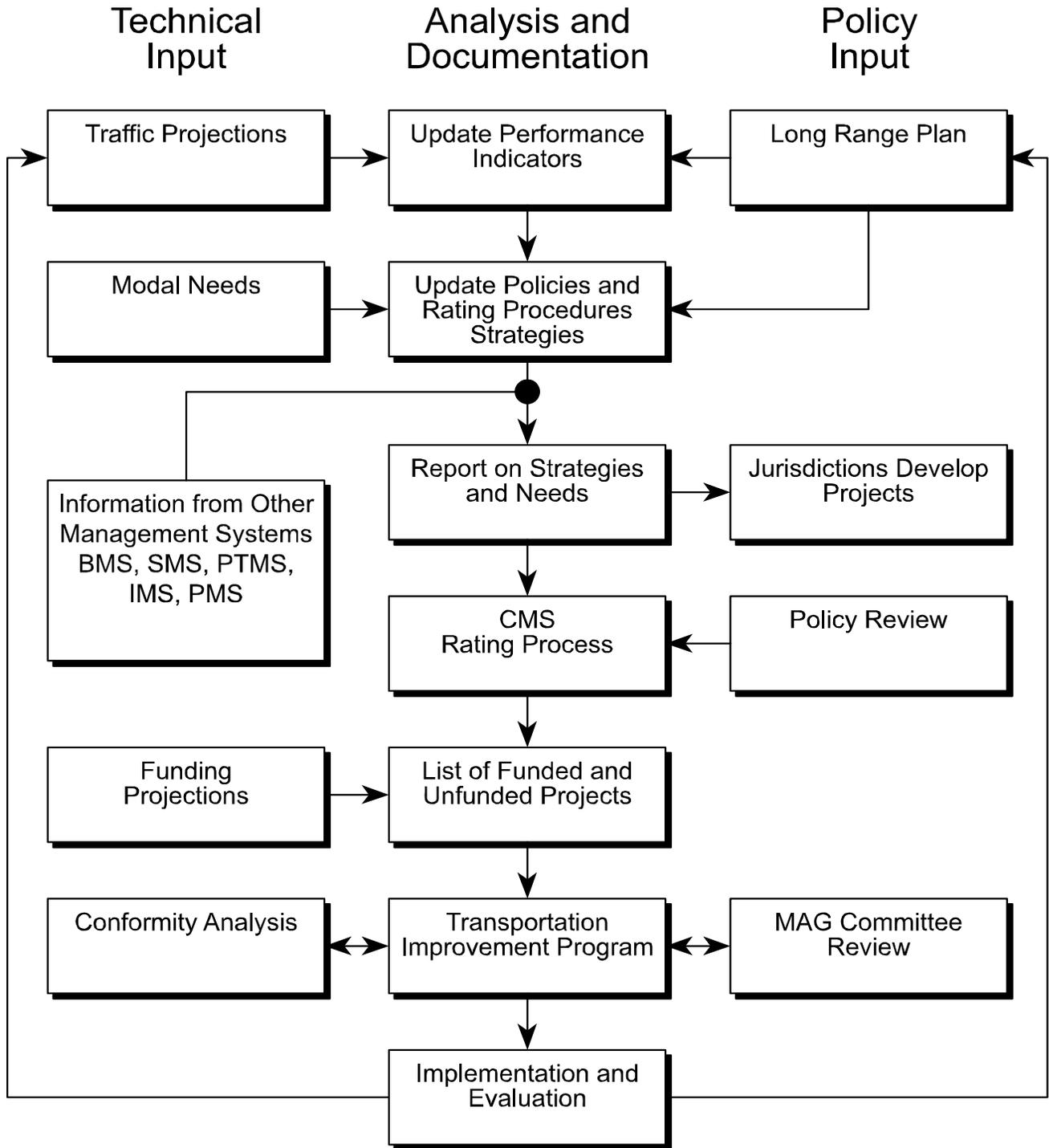
Performance Measures

A composite rating system has been developed for evaluating projects within the CMS. Each project is given a 1 to 100 score based on relative congestion levels, mobility zone factors, cost effectiveness, and multimodal enhancements as described below.

- **Congestion Factors** - Projects are evaluated based on their current volume to capacity ratios (V/C), and a higher ratio would result in a higher score.
- **Mobility Zone Factors** - Mobility zones were developed as an analytical tool that considers geography and land use density in transportation strategies. Four types of Mobility Zones were identified: *Core Zones* (the most dense areas), *Developed Zones* (existing built-up areas), *Developing Zones* (areas expected to develop over the next twenty years), and *Rural Zones* (not expected to develop in twenty years). Transportation strategies for each of these zones are ranked by order of preference, and are then used in the rating system. Land use planning efforts conducted by local jurisdictions are also considered.
- **Performance Cost Factors** - Each project is evaluated based on its cost per passenger mile. These factors are evaluated in a standardized format so all modes can be compared on an equal basis. This means that the highest rated freeway project will compete on an equal basis with each of the highest rated street, bicycle or transit projects.
- **Multimodal Factors** - Each project within the categorical modes consisting of freeways, streets, bicycle/pedestrian, and transit is evaluated based on whether it is a simple improvement or includes multimodal enhancements. For example, street projects that also include such enhancements as access controls, bike lanes, bus pullouts and pedestrian facilities will receive higher scores than those which do not have them.
- **Policy Checks** - Once projects are submitted to MAG and given a score through the ranking system, each is evaluated based on a set of CMS policies. These include: providing

FIGURE 19-1

MAG Congestion Management System



funding for Transportation Control Measures included in the State Implementation Plan for air quality; consideration of alternatives to new traffic lanes; the level of project readiness; and other policies as adopted by MAG.

These factors are periodically updated and are used to show the congestion performance of the transportation system. Information from the MAG RTP, traffic modeling, and public input are considered during the update process.

Data Collection and System Monitoring

Each year MAG produces a report that is distributed to each member agency describing the current status of congestion in the region based on the adopted performance indicators. This report also assesses the progress of implementing identified congestion relief strategies. System improvements associated with implementing the five year MAG Transportation Improvement Program (TIP) will also be identified along with future needs.

MAG has an ongoing program for data collection and system monitoring which includes periodic surveys of travel characteristics such as traffic volumes, travel times, congestion levels, occupancy rates, vehicle classification, trip making properties, and public transit user factors. This information is used to assess current conditions and provide data to enhance the MAG travel demand modeling capability.

Strategy Identification and Evaluation

The MAG CMS process explicitly considers 11 strategies prior to the Federal disbursement of funds for additional general purpose lanes on the regional freeway system. MAG member agencies are required to implement the Federal strategies when adding through-lane capacity to regional freeways and highways. These strategies include consideration of the following items:

- Transportation Demand Management Measures
- Traffic Operational Improvements
- HOV Usage
- Public Transit Capital
- Public Transit Operational
- Non-Traditional Mode Usage
- Congestion Pricing
- Growth Management and Activity Center Strategies
- Access Management Techniques
- Incident Management on Freeways
- Intelligent Vehicle Highway System

In addition to the above factors, other strategies are considered in periodic updates of the Regional Transportation Plan. As part of this process, the MAG travel model is utilized to assess future levels of congestion in the transportation system and evaluate the potential future effectiveness of congestion management strategies.

Project Implementation

Transportation improvement projects from each MAG member agency, as well as State and Federal agencies are periodically submitted to MAG for consideration in the CMS process. In addition, projects are generated from individual MAG modal committees, taking into account MAG modal funding policies. The MAG TIP is developed from this initial list of possible projects, as well as projects that are listed in the MAG RTP. The projects from the RTP were identified, previously, through a performance-based evaluation of the regional system, producing a list of projects to address congestion and mobility issues.

The project implementation process recognizes the existing statutory limitations on funding expenditures, as well as the potential flexibility that applies to certain Federal sources. The MAG RTP, the ADOT Life Cycle Program, the MAG Arterial Life Cycle Program and the RPTA Life Cycle Program also identify general funding needs and sources. These conditions are taken into account during the project review process and the annual update of the TIP and RTP. Updated project lists are incorporated into the TIP then submitted to the MAG Management Committee, who in turn review the modal recommendations, and forward them to the MAG Regional Council for final review and approval.

Future Congestion Management Efforts

As noted previously, the MAG congestion management process is an ongoing effort, applied annually as part of the updates of the TIP and RTP. In addition, the CMS, itself, is undergoing review and refinement by MAG to respond to changing conditions and new information. As part of this effort, a full procedural review of the CMS will be conducted and possible scenarios to improve the process will be assessed. Key items to be evaluated in this update include: overall CMS program goals, performance measures and rating systems, data collection requirements and procedures, and the relative emphasis on current versus future congestion. It is anticipated that alternative CMS concepts will be identified and assessed, resulting in a final recommended approach that includes a plan for implementing any new program features.

CHAPTER TWENTY

PERFORMANCE MONITORING AND ASSESSMENT

The development of the MAG Regional Transportation Plan (RTP) included a performance-based planning and programming process that established goals, objectives and performance measures for developing various options and evaluating potential scenarios to be included in the Plan. MAG has continued the emphasis on performance-based planning by establishing an ongoing Transportation System Performance Monitoring and Assessment Program. The quantitative material presented in this chapter is the first step in the formulation of the program, which will be maintained and reported on annual basis. It is anticipated that a more detailed, stand-alone report will also be provided in the future.

The benefit of a clear and concise set of performance measures is that they provide a base for consistent evaluation and monitoring of current performance, as well as the basis to understand how the transportation system will likely perform in the future. Both of these two elements - monitoring ongoing performance and analyzing future performance - are addressed in the following chapter. Since the implementation of the RTP is in its early stages, the material presented represents the beginning phase of the monitoring and assessment program, and will be extended and enhanced in the future as the program is refined.

Definitions and Methodology

The transportation system performance monitoring and assessment process includes: (1) tracking of the performance of the transportation system on an ongoing basis, and (2) forecasting how the system is likely to perform in the future. The tracking element emphasizes collection of data and development of comparative statistics that reveal trends in system performance over time. The forecasting element focuses on the use of travel demand computer models to project travel conditions and draw conclusions regarding future performance of the transportation system. As part of both the tracking and the forecasting phases, specific and consistent measures of performance are utilized to provide insights into the operation of the transportation system, today and in the future. The performance measures and their definitions are summarized below:

Performance Measures and System Parameters

The consistent application of a set of performance measures over time will allow for the monitoring of trends, and will provide insight into developing effective ways to address and mitigate the various sources of congestion in the future. Tracking congestion trends and changes will also provide information to evaluate different strategies and determine their benefits and costs. The series of performance measures discussed in this chapter are a sub-set of a larger collection of measures and indicators being considered for the MAG performance measurement program, and may be expanded or revised in future updates of the RTP.

- **Travel Time** - Preliminary research on performance monitoring programs conducted in MAG peer regions indicates that many of the measures focus on travel time and vehicle speeds. These measures provide a good basis for technical analyses and are easy to

communicate to the general public and decision makers. Furthermore, one of the key principles that the Federal Highway Administration (FHWA) has promoted is that the metrics used to track congestion should be based on the travel time experienced by users of the transportation system.

- **Level of Service (LOS)** - For freeway facilities, the LOS is defined as the density of traffic flow in units of passenger cars per lane per mile. When traffic flows without interruption, density relates mathematically to both speed and volume. The LOS measure indicates how heavily the facility is used and provides general speed information. The LOS rating system uses the letters “A” through “F” to describe traffic conditions. LOS “A” represents superior traffic conditions (very light traffic), while LOS “F” represents poor traffic conditions (congested flow involving various degrees of delay). These letters are assigned based on how densely cars are traveling on the road. For intersections, LOS ranges “A” through “F” may also be calculated, based on signal timing, number of lanes and the volume of vehicles entering the intersection.
- **Delay** - The amount of extra time spent in congestion compared to the time it would take under ideal or free-flow conditions. For example, if a trip takes 10 minutes under ideal conditions, and during the peak it takes 15 minutes, the total amount of delay is five minutes.
- **Congestion** - The conditions a segment of the roadway at a particular time resulting from high traffic volumes, producing speeds that are slower or much slower than normal or “free flow speeds”. Congestion usually involves stop and go traffic. Free-flow speed is 66 MPH on freeways and 40 MPH on arterials. For freeways, congested speeds correspond to speeds under 50 MPH and severe congestion corresponds to speeds under 35 MPH. For arterials, congested speeds in the urbanized area generally correspond to speeds under 20 MPH. In this Chapter, for freeways the definition of congested facility is when the volume-to-capacity (V/C) ratio is equal or greater than 0.91, or where the average modeled speed falls under 35 MPH. These factors correspond to LOS E-F.

For arterial facilities, congestion is defined as a V/C ratio greater than 0.91 or where the average modeled speed falls under 20 MPH, corresponding to LOS E-F. For arterial intersection LOS calculation, the sum of volumes at approaches in each direction serves as major input to the calculation. It is important to note that the data used for this calculation is part of the MAG regional travel demand model. The regional scale of this model is not the optimal approach to assessing congestion at the intersection level. Microsimulation of the intersection would be a more accurate way to calculate this measure. For this chapter, an intersection is identified as congested if it is at LOS E-F.

Typically, congestion can be measured based on three parameters:

- Extent of congested facilities based on capacity.
- Location and extent of congestion based on speeds.
- Duration of congestion on selected facility types.

- **Transit Performance Indicators** - In April of 2006, RPTA contracted with Booze Allen Hamilton Consultants for a Service Effectiveness and Efficiency Study; this ongoing effort includes a collaborative process by a Technical Advisory Committee composed of transit staff from local jurisdictions, MAG and ADOT. The purpose of the study is develop a performance framework for Valley Metro RPTA that will allow for the objective assessment of bus and light rail service as well as to ensure that regional investments in transportation achieve their desired effects. A specific objective of the study is to define, test and recommend performance measures to be applied at the system, and route level. To this date, a series of performance measures have been proposed and are being tested by various transit providers in the region. Proposed measures are divided into two groups:
 - Cost Efficiency: Farebox Recovery Ratio, Operating Cost per Boarding, and Cost per Revenue Mile.
 - Service Effectiveness: Total Boardings, Boardings per revenue mile, and on-time Performance.

Preliminary results of selected measures are currently being prepared by test users from participating jurisdictions. Once a final set of transit performance measures has been determined, they will be applied to the continuing performance monitoring and assessment effort.

- **Other System Parameters** - In addition to specific performance measures, other system parameters are very useful in assessing the transportation system over time and comparing network scenarios. Such system parameters include:
 - The estimated number of persons transported.
 - The estimated amount of freight transported.
 - The number of miles traveled.
 - The number of vehicles and the estimated capacity of those vehicles.

Modeling Scenarios

In order to analyze future congestion, it is necessary to make use of simulations of the regional transportation network. The MAG travel demand model, which is a state-of-the-practice computer travel demand model, was utilized for this purpose. For the analysis presented in this chapter, three network scenarios were modeled to assess potential future conditions on the transportation system in the region.

- **2006 Base Year Scenario** - For this scenario the highway, arterial and transit network reflects the current year 2006 network. The benefit of using this network as a base is that it reflects conditions before any of the RTP projects are implemented, thus establishing a reference point for comparative analysis. The socio-economic data that generates the travel demand for this scenario is based on the Socioeconomic Projections accepted by the MAG Regional Council in June of 2003.
- **2028 RTP Plan Scenario** - The network used for this model run includes all the projects in the RTP Plan and utilizes MAG's socioeconomic projections for the year 2028.

- **2028 No-Build Scenario** - The purpose of this scenario is to quantify the performance of the system without including the RTP major investments and assess the impact on levels of service. This scenario uses the same socioeconomic data for 2028 as that used for the RTP scenario, but does not include the regionally funded freeway and arterial system improvements identified in the RTP.

Roadway System Performance

Automobiles and trucks handle the great preponderance of travel performed for the movement of people and goods in the MAG Region. The remaining approximately one percent of trips are made by public transit, bicycle and walking. Thus, the performance of the roadway system, including streets, highways and freeways, is highly indicative of the overall level of performance of the transportation system in the MAG Region. The current and future performance of the roadway system is discussed below.

Current Roadway Performance

The optimum combination of accuracy and detail for performance measurement is based on real time, observed data sources. For this chapter, various sources of MAG traffic data have been used. Currently traffic data is available for the MAG Region from various recently completed studies and surveys. These include: the 2006 Regional Freeway Bottleneck Study, the 2006 Freeway Level of Service Study, the Phoenix External Travel Survey, the Freeway Travel Conditions and Trends Study, and the 2003 Travel Time and Speed Study. During the 2006-2007 Fiscal Year, a number of additional studies are being conducted, including: the 2006 Weekday Traffic Volume Study and Database, the ADOT Freeway Management System (FMS) Detector Accuracy Evaluation, the 2006 Travel Time and Speed Survey, and the Internal Truck Travel Survey.

- **Travel Time** - Table 20-1 summarizes travel time data between the Central Business District (CBD) locations within the MAG area, comparing data among the 1986, 1993 and the 2003 Travel Time and Speed Studies. Data collected reflects travel occurring on the arterial and freeway systems. It is important to note that the regional freeway system was expanded significantly between the years 1986 and 1993, and subsequently between 1993 and 2003. Therefore, some origin and destination pairs exhibit a shorter travel time in 2003 than in earlier years.
- **Freeway Level of Service** - The Freeway Level of Service Study is of particular importance to the performance monitoring effort. This study was conducted in 2005 and involved an aerial survey and mobility monitoring program to report traffic conditions on the regional freeway system. This is a recurring study that has been conducted in the MAG Region in 1998, 2001 and 2005.

The Freeway Level of Service Study applies a speed/density model that estimates vehicle speeds by observation of aerial density photographs. Several changes in congestion levels from 2001 to 2005 were identified. For example, the study found that congestion levels increased dramatically during the PM. peak period on the eastbound I-10 segment between SR51 and Loop 202. The extent of congestion doubled, the average speed dropped from 30-50 MPH to 30-15 MPH, and the duration of congestion increased by one hour during this

**TABLE 20-1
PLACE TO PLACE (CBD to CBD) PM TRAVEL TIME MATRIX
(TRAVEL TIME IN MINUTES)**

	Phoenix			Tempe			Scottsdale			Glendale			Peoria			Gilbert			Chandler			Mesa		
	1986	1993	2003	1986	1993	2003	1986	1993	2003	1986	1993	2003	1986	1993	2003	1986	1993	2003	1986	1993	2003	1986	1993	2003
Phoenix	-	-	-	21.8	19.6	20.2	30.2	26.8	22.2	19.6	22.0	26.3	27.3	29.5	33.7	29.1	33.8	37.7	31.5	32.8	38	39.2	27.2	29.5
Tempe	19.6	16.1	15.4	-	-	-	18.2	18.4	17.8	37.4	31.4	36.9	45.1	37.7	43.5	21.4	25.0	23.7	23.9	25.5	24.1	17.4	12.7	16.7
Scottsdale	26.2	27	19.4	17.1	16.8	17.4	-	-	-	39.8	40.7	40.9	47.5	47.5	47.5	34.0	37.9	29.9	36.4	38.3	30.2	28.4	24.4	21.8
Glendale	23.8	21.3	20.5	36.4	31.2	31.5	35.4	38.3	33.5	-	-	-	7.7	7.5	10.6	47.7	47.1	48.9	50.1	46.0	49.3	44.0	40.5	40.7
Peoria	31.9	27.9	25.8	44.5	37.8	36.8	46.5	46.0	38.8	8.1	9.0	11.5	-	-	-	55.8	53.7	54.2	58.2	52.6	54.6	52.1	47.1	46
Gilbert	36.7	32	27.3	22.5	25.9	20.2	40.2	38.6	26.7	49.9	48.1	48.8	57.6	54.4	54.6	-	-	-	10.7	9.9	11.7	15.4	16.1	14.1
Chandler	39.5	30.4	29.1	25.3	24.6	21.9	43.0	37.3	28.4	52.7	46.4	50.5	60.4	52.7	56.4	9.3	9.9	13.8	-	-	-	17.8	13.4	19.8
Mesa	40.1	27.3	20	20.4	11.5	12.2	46.5	23.9	18.2	46.2	43.4	41.5	53.9	49.7	48.1	15.4	17.6	15.2	18.2	16.5	18.7	-	0.0	-

period. Also along eastbound I-10 during the morning peak period, it was observed that the added capacity between Loop 101 and SR51 likely improved speeds. However, the extent of the congested segment increased by five miles.

Along the I-17 corridor, new congestion was reported southbound between New River Road and Loop 101 in the morning peak period. Increased congestion was also observed on SR-51 along the southbound segment between Greenway Road and Shea Boulevard. No congestion was identified during the morning peak period along this segment in 2001, while in 2006 heavy traffic volumes on this segment resulted in slower speeds, longer duration of congestion. Morning congestion levels have increased considerably on eastbound Loop 101 between Union Hills Drive and SR-51. Average speeds were estimated at 20-40 MPH in 2006 and congestion was observed for the entire morning peak period. Several capacity increases in various segments along the regional freeway system have likely kept levels of congestion stable, keeping pace with increased demand. However, the system in general, especially in the outer edges of the urban area, experienced increases in the severity, duration and extent of congestion.

According to “2004 Freeway Traffic Conditions and Trends in the Phoenix Region” prepared by the Texas Transportation Institute, afternoon and evening congestion appear to be significantly worse than the morning congestion. The longest duration of morning congestion is one and a half hours (defined as speeds under 50 MPH). In the evening there are locations with congestion exceeding three hours.

Future Roadway Performance

In order to assess the future performance of the roadway system, a series of network scenarios were modeled using the MAG travel demand model. These scenarios were described at the beginning of this chapter. To illustrate the relationship between the various indicators of future roadway system performance, data has been grouped into three categories: Supply Measures, Demand Measures and Level of Service Measures. These measures have been selected as representative indicators of the overall performance of the transportation system and are presented in a comparative fashion among three modeling scenarios: the 2006 Base Year, the 2028 RTP and the 2028 No-Build. All data is for the Maricopa County portion of the MAG transportation modeling area. Table 20-2 provides a comparison of key system level parameters and performance measures for the three scenarios that were modeled.

- **Supply Measures** - Two measures of the supply of roadway capacity in the region are included in Table 20-2: freeway lanes miles and number of arterial intersections. The value for freeway capacity miles is the result of multiplying the number of lane miles by the daily capacity factor per lane for freeways (28,000). Although not strictly a capacity measure, the number of arterial intersections is provided to represent the overall scale of the arterial system, and to provide a basis of comparison for the number of congested intersections. As shown in Table 20-2, there is an increase of approximately 59 percent in freeway capacity between the 2006 Base Year and the 2028 RTP, while the number of arterial intersections increases by about 22 percent. For the No Build scenario, freeway capacity increases only slightly (six percent) and the increase in arterial intersections is comparable to the RTP scenario.

**TABLE 20-2
MODELING SCENARIO PERFORMANCE MEASURES
(Maricopa County Portion of MAG Modeling Area)**

	Scenario		
	2006 Base Year	2028 RTP	2028 No Build
Population	3,715,520	5,940,130	5,940,130
Supply Measures			
Fwy. Lane Miles	1,802	2,862	1,913
Fwy. Capacity Miles	50,456,000	80,136,000	53,564,000
Arterial Intersections	12,210	14,752	14,752
Demand Measures			
Fwy. Vehicle Miles of Travel	31,473,238	57,160,809	41,896,855
Arterial Vehicle Miles of Travel	42,947,174	76,222,790	87,490,596
Level of Service Measures			
Congested Fwy. Lane Miles	598	1,398	1,217
% Congested Fwy. Lane Miles	33.2	48.8	63.6
Congested Fwy. VMT	15,251,379	35,656,244	32,941,187
% Congested Fwy. VMT	48.5	62.4	78.6
Congested Arterial Intersections	100	244	429
% Congest. Art. Int.	0.8	1.7	2.9
Vehicle Hours of Delay	581,046	1,410,398	2,023,538
Veh. Hrs.Delay per 1000 VMT	7.8	10.6	15.6

- Demand Measures** - The demand measure identified in Table 20-2 is vehicle miles of travel (VMT) for arterials and freeways on an average weekday. These facility types were selected, since they carry the vast majority of travel in the roadway network. However, there is some additional VMT carried by local and collector streets, which is not reflected in the figures in Table 20-2. Compared to the 2006 Base Year, VMT on freeways and arterials in the 2028 RTP system is projected to increase 82 percent and 78 percent, respectively. For the No Build scenario, the VMT increases are 33 percent and 104 percent, respectively, reflecting the increased burden of traffic that arterials must carry due to lack of freeway

improvements. In comparison to these figures, total population in the MAG area is projected to increase by 60 percent between 2006 and 2028.

- **Level of Service (LOS) Measures** - A number of LOS measures are included in Table 20-2 for the three modeled scenarios, including congestion on freeways, congested arterial intersections, and vehicle hours of delay. As noted previously, congested freeway segments are those with LOS E-F, congested intersections are those at LOS E-F, and delay represents amount of extra travel time due to congestion.

A review of Table 20-2 indicates that, while the number of lane miles of congested freeways more than doubles between the 2006 Base Year and the 2028 RTP, the portion of total lane miles that are congested increases by only 47 percent. Under the No Build scenario, the percentage of congested lane miles increases by 92 percent. The number of congested intersections and vehicle hours of delay reveal a similar effect. The percent of congested intersections doubles between the 2006 Base Year and the 2028 RTP, but more than triples under the No Build scenario. The delay (per 1000 VMT) increases by 36 percent between the 2006 Base Year and the 2028 RTP, but experiences an increase of over 100 percent under the No Build scenario. Clearly, the freeway capacity added in the RTP helps significantly to mitigate the effects of a growing population.

Figures 20-1 through 20-6 help illustrate the LOS comparison of the modeling scenarios graphically. Figures 20-1 through 20-3 depict, respectively, the hours of LOS E-F on the freeway system for the 2006 Base Year, the 2028 RTP, and the 2028 No Build scenarios. Figures 20-4 through 20-6 show, respectively, the location of LOS E-F intersections for the 2006 Base Year, the 2028 RTP, and the 2028 No Build scenarios. This series of maps reinforces how significantly the roadway projects in the RTP help deal with the increases in travel demand that accompany regional growth.

Transit System Performance

The last On-Board Origin and Destination Survey was conducted by the Regional Public Transportation Authority (RPTA) in 2001. Since then, concentrations of land uses and patterns of work trips in the MAG urban area have changed considerably, as well as the socioeconomic characteristics of riders. In 2007, a new Transit On-Board Survey will be conducted by RPTA. The results of this survey will be instrumental in the calibration of the MAG travel demand model and results will be used to calculate base year and future year performance measures.

For Fiscal Year 2004 -2005, the regional transit system operated 63 local bus routes and 19 express and rapid routes. Valley Metro reports 56.9 million total bus boardings (including transfers) and indicates that the percent of operating cost covered by bus passenger fees is 21.2%. The operating cost per bus passenger is \$2.52 and the operating cost per mile is reported at \$5.33. The MAG travel demand model has estimated that boardings in 2006 will total approximately 57.7 million and will increase to 76.6 million by 2008, a 33% increase.

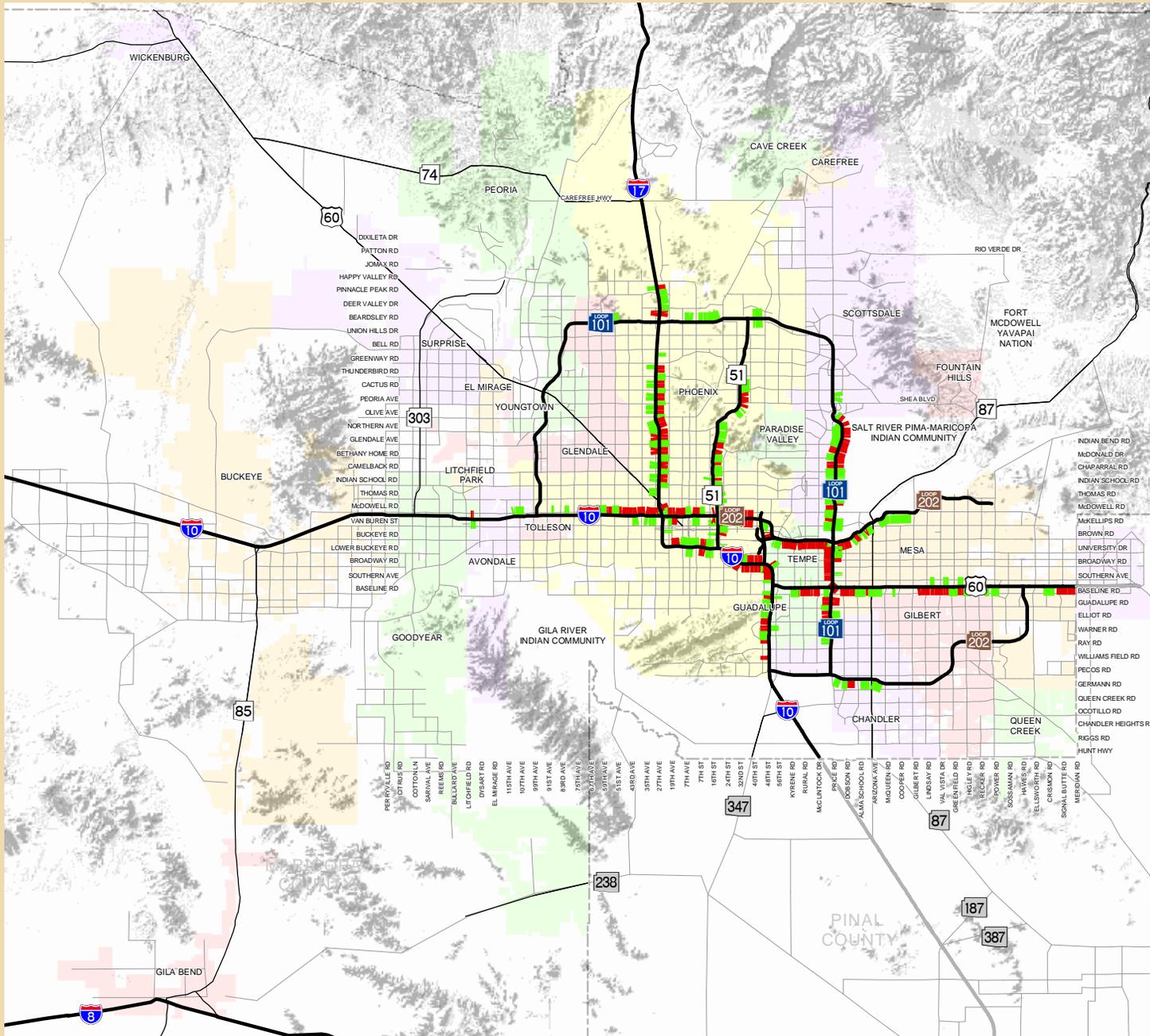
Growth and Congestion in the MAG Region

The MAG Region has experienced unprecedented growth in the last several decades. Maricopa

2007 Update
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Fig. 20-1



2006 Base Year Network:
Freeway PM Peak Period
Hours of
Level of Service E & F

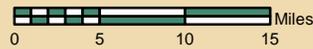


- Less than 1
- Greater than 1
- County Boundary
- Freeways
- Highways
- Other Roads

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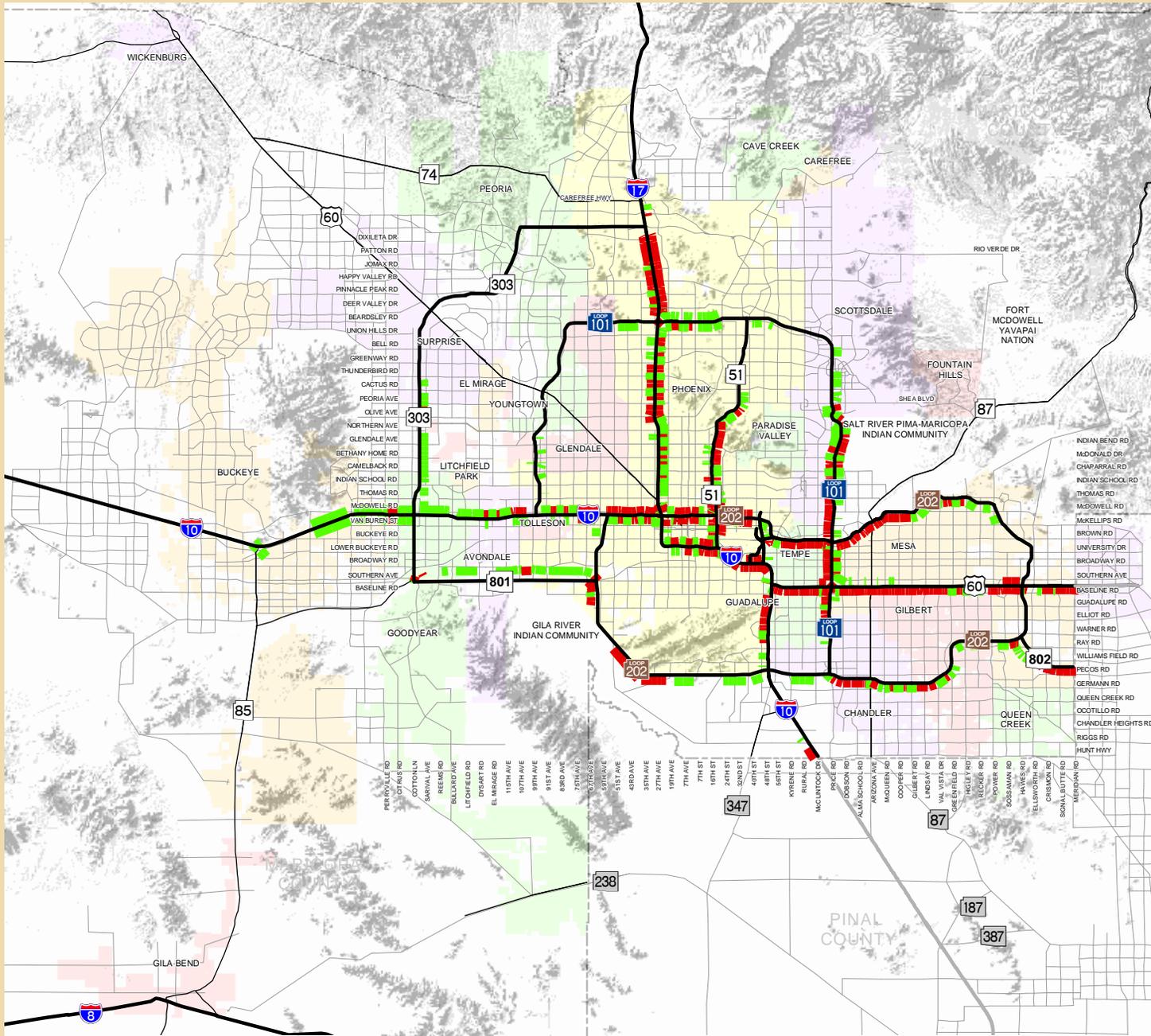


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Fig. 20-2



2028 RTP Network: Freeway PM Peak Period Hours of Level of Service E & F



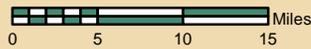
- █ Less than 1
- █ Greater than 1
- County Boundary
- Freeways
- Highways
- Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

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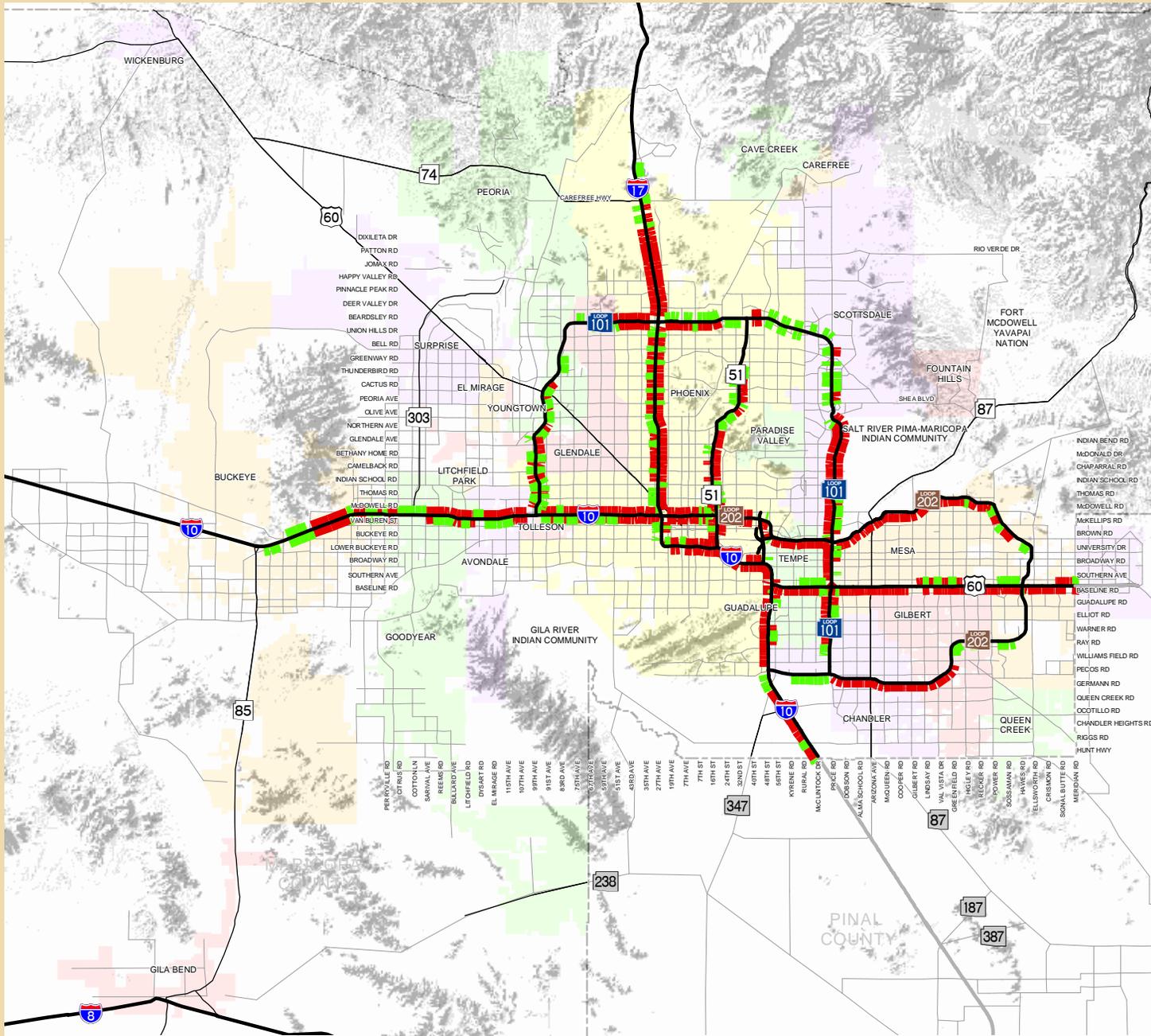
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Fig. 20-3



2028 No Build Network:
Freeway PM Peak Period
Hours of
Level of Service E & F

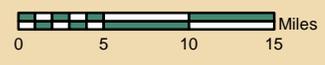


- Less than 1
- Greater than 1
- County Boundary
- Freeways
- Highways
- Other Roads

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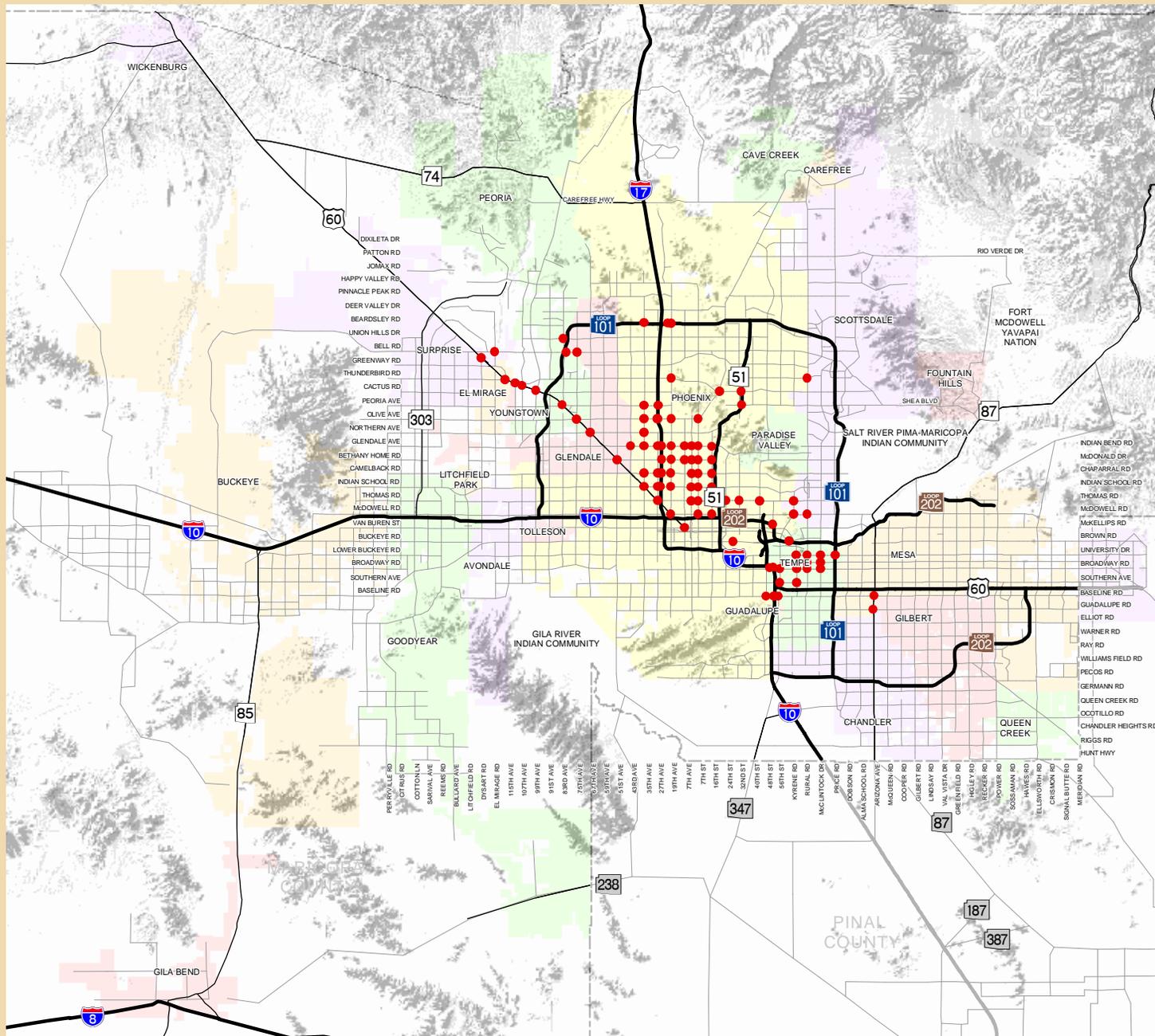
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Fig. 20-4



2006 Base Year Network:
Intersections
PM Peak Period
Level of Service E & F

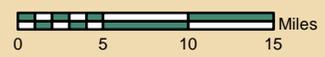


- Level of Service E & F
- County Boundary
- Freeways
- Highways
- Other Roads

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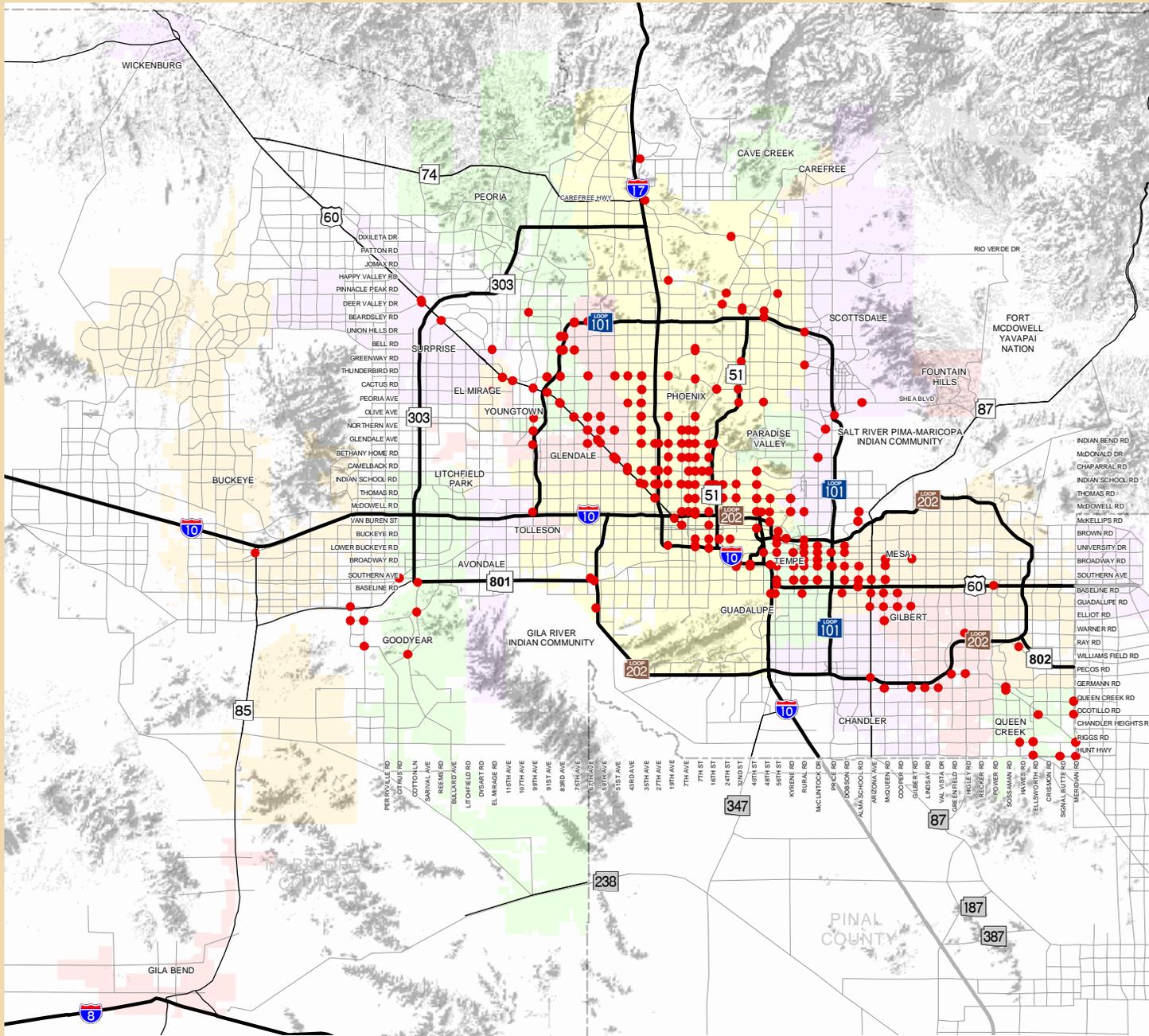


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Fig. 20-5



2028 RTP Network: Intersections PM Peak Period Level of Service E & F



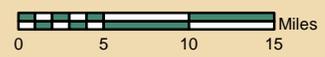
- Level of Service E & F
- - - County Boundary
- Freeways
- Highways
- Other Roads

Alignments for new freeway, highway, arterial, and light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).



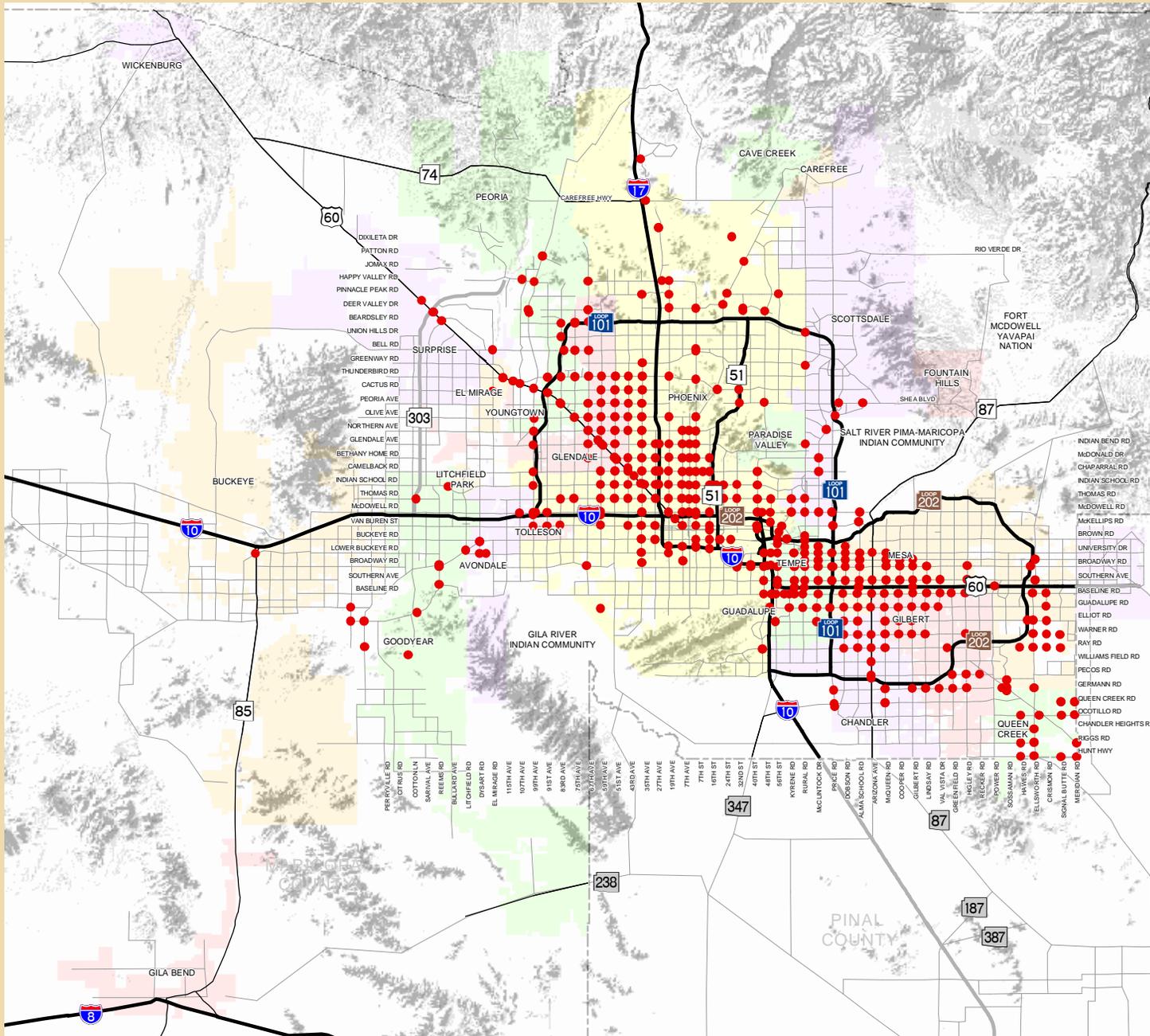
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2007 Update
Regional Transportation Plan
Fig. 20-6



2028 No Build Network:
Intersections
PM Peak Period
Level of Service E & F

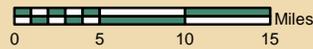


- Level of Service E & F
- - - County Boundary
- Freeways
- Highways
- Other Roads

Regional transportation facilities in Pinal County are planned by the Central Arizona Association of Governments (CAAG).



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.



County is one of the fastest growing regions in the country, with average annual population increases above three percent. In 2000, the total resident population in Maricopa County was 3.1 million, and in just five years, the Special 2005 Census Survey reported 3.7 million, representing a 20.5% growth rate. By 2030, the projected population for Maricopa County will reach 6.1 million.

Maricopa County contains 24 incorporated cities, towns, five Indian Communities and a large area of unincorporated land. In the last thirty years, cities and towns have expanded their corporate limits more than fourfold from 421 to 1828 square miles. This expansion is expected to continue into the future, moving increasingly away from the central region. A substantial percentage of the newly urbanized area has moved into the periphery, occupying former agricultural and vacant land. New residential developments and master planned communities are typically located in areas that do not have developed employment centers. This causes a job-housing imbalance and travel patterns that have a direct impact on mobility and accessibility within a region. Developments that are large traffic generators place increasing demands on an existing transportation infrastructure, which may not provide adequate capacity.

The effect of job-housing imbalance and the rapid population increases in the fringes is reflected in some of the measures presented. As noted in the previous discussion of Table 20-2, congestion on freeways and at arterial intersections, as well as vehicle delay, are all much less than they would have been without the roadway improvements included in the RTP. This indicates that the investments identified in the RTP will help keep pace with the travel demand brought on by the increasing population in the region.

At the same time, it is evident from the preliminary analysis presented in this chapter that the addition of capacity to the transportation system is not the only factor in relieving congestion. Increasing mobility through multiple systematic strategies for addressing congestion, such as a more generalized use of transit service, will warrant continued application in the future.

Performance Monitoring and Assessment Program Outlook

The MAG Transportation System Performance Monitoring and Assessment Program has been established to provide a framework for reporting performance at the system and project levels, and serve as a repository of historical, simulated and observed data for the transportation system in the MAG Region. As part of this effort, the program will consolidate the data collection efforts related to system performance and develop an archive of historic and current performance data sets that can be used for future evaluation and analysis. The overall goal of the program is to communicate measures related to mobility and accessibility in the MAG Region, and to provide the public with a better idea of how transportation systems perform. In order to establish a consistent framework, it is anticipated that a group of measures will be consistently reported as the implementation of the RTP moves forward.

CHAPTER TWENTY-ONE

TRANSPORTATION SAFETY

The Safety Planning Program at MAG was initiated in 2001 and is continues to be enhanced and expanded. A Regional Transportation Safety Stakeholders Group was formed in November 2001 with representation from member agencies and a broad cross section of safety advocacy groups. In September 2004, the Maricopa Association of Governments (MAG) formed a Transportation Safety Committee, thus clearly establishing the intent to incorporate explicit safety considerations within the metropolitan planning process. In October 2005, the committee completed the process of developing and adopting the region's first Strategic Transportation Safety Plan, a task begun in 2002 by the Stakeholder's Group. The authorization of the Federal Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) in 2005 and the new Highway Safety Improvement Program is expected to result in an increase in resources being allocated for road safety improvements in Arizona. The national Highway Safety Improvement Program has identified the need to allocate safety resources to problem locations, giving consideration to the number of fatalities, the amount of travel and the lane-miles of public roadway available.

As the largest population center in the State (60 percent of Arizona's total population), the MAG Region also experiences a significant portion of the negative road risk/safety consequences that occur in Arizona. Recent crash statistics show that nearly 66 percent of all crashes, and 40 percent of all fatal crashes in the State, occur in the MAG Region.

Transportation Safety Planning

At present, transportation safety is addressed at two levels within the MAG planning process. The first involves the consideration of road safety as a criteria in comprehensive planning, such as the MAG Regional Transportation Plan (RTP), where decisions are made on large investments in regional transportation infrastructure. These planning decisions, made at the regional level on infrastructure investment priorities, have a significant indirect impact on the overall long-term levels of safety provided by the transportation system. This requires the assessment of different regional transportation alternatives from a safety viewpoint. The four-step Urban Transportation Modeling System (UTMS) is typically used to forecast future travel demand on the future street network. The methodology used by MAG for safety impact assessment of transportation alternatives utilizes results from the travel demand forecasting step and estimates the total number of crashes in the system based on the estimated volume of traffic. Simplified models that utilize historical crash data and crash rates of different road types are used to estimate the number of crashes and their consequences. It should be noted that safety forecasting at the macroscopic or regional level is feasible due to stable crash rates and trends.

At the second level, transportation safety planning is addressed more strategically and addresses short to medium-term needs through the comprehensive description the 2005 MAG Strategic Transportation Safety Plan. This Plan identifies general strategies and potential actions to be carried out with oversight provided by the MAG Transportation Safety Committee. This process includes cross-cutting safety initiatives that would also involve other stakeholder groups. An example is a

road signage project to be launched in FY 2007, developed in cooperation with the Elder Mobility Group to improve road safety for elder road users.

All transportation safety planning activities at the regional level are closely coordinated with similar planning at the state level. MAG is an active member of the Governor's Traffic Safety Advisory Council, established in 2004 through an executive order by Governor Janet Napolitano. The Council is responsible for the annual preparation and recommendation of the State's Strategic Highway Safety Plan for approval by the Governor.

Transportation Facilities and User Safety

Table 21-1 shows statistics for the years 1994 -2005 on the number of crashes that occurred in Maricopa County, and the estimated economic loss that resulted from these crashes. The economic cost accounts only for loss of life, injury and loss of property and does not include congestion and delay-related costs to other motorists affected by crashes.

The statistics shown in Table 21-1 indicate that between 1994 and 2005 total crashes have increased by 39 percent, total injury crashes have increased by 9 percent, and the number of total fatal crashes increased by 42 percent. During this period the population has increased by 46 percent to 3.7 million.

Planning data at MAG for 2005 indicate that about 60 percent of State's population lived in Maricopa County and 53 percent of the State's travel (measured in vehicle miles of travel or VMT) occurred in Maricopa County. Table 21-2 shows how the region compares with the State in crash experience. It appears that the MAG planning region, which currently include Maricopa County and Apache Junction, consistently represents about two-thirds of all injuries in the State due to motor vehicle crashes and about 40 to 48 percent of fatalities.

Freeways

The urban freeway system currently consists of I-10, I-17, US 60, SR 51, Loop 101 and Loop 202. The freeway system carries about 40 percent of all trips made in the region, and also provides the highest levels of safety for travelers. The overall safety on the freeway system has been enhanced through MAG-sponsored safety projects such as the implementation of Cable Median Barriers and the Freeway Service Patrol Program. The Freeway Management System (FMS) operated by Arizona Department of Transportation (ADOT) is another contributor to safety on freeways.

The ADOT FMS staff are on duty 24-hours a day and 365 days a year keeping watch on the freeway system. They are responsible for the operation of electronic signs, ramp meters and cameras installed on nearly 100 miles of freeway. There is close coordination between FMS staff, the Department of Public Safety and local transportation agencies. Nearly all freeway traffic advisories broadcast on local radio, television channels, and the internet are based on information provided by the FMS. Expansion of the FMS to cover the entire urban freeway system is recognized as a priority in the RTP. Excessive speeding, particularly on newer freeway segments, continue to pose a threat to road safety. The Department of Public Safety continues to monitor and address threats to overall safety through increased enforcement. Table 21-3 depicts the crash record on freeways in the MAG Region.

**TABLE 21-1 CRASHES IN MARICOPA COUNTY
(1994-2005)**

Year	Fatal	Injury	Property Damage Only	Total	Economic Loss (Millions \$)
1994	337	27,655	38,781	66,773	1,255
1995	417	29,066	42,875	72,358	1,593
1996	360	28,769	43,867	72,996	1,205
1997	372	27,567	45,667	73,616	1,260
1998	372	28,730	49,293	78,395	1,267
1999	394	30,331	52,345	83,070	1,332
2000	394	31,837	54,457	86,688	1,547
2001	445	30,762	55,491	86,698	1,633
2002	441	30,529	56,636	87,606	1,660
2003	414	29,455	54,740	84,619	1,735
2004	414	30,745	59,441	90,600	1,796
2005	480	30,177	61,950	92,607	1,927

**TABLE 21-2
CRASHES, INJURIES AND FATALITIES: STATE vs.
MAG REGION (1999-2005)**

Year	Total Crashes		%	Injuries		%	Fatalities		%
	Arizona	MAG		Arizona	MAG		Arizona	MAG	
1999	125,764	83,622	66%	73,514	48,688	66%	1,024	437	43%
2000	131,368	87,310	66%	76,626	51,196	67%	1,036	436	42%
2001	131,573	87,210	66%	73,962	49,449	67%	1,047	500	48%
2002	134,228	88,321	66%	74,230	49,294	66%	1,119	491	44%
2003	130,895	85,082	65%	71,901	46,997	65%	1,118	458	41%
2004	138,547	90,979	66%	73,475	48,401	66%	1,151	465	40%
2005	139,265	92,986	67%	70,293	46,729	66%	1,179	528	45%

**TABLE 21-3
CRASHES ON THE FREEWAY SYSTEM
(1999-2005)**

Year	Fatal	Injury	Property Damage Only	Total
1999	48	3,355	8,269	11,672
2000	60	4,130	9,795	13,985
2001	77	4,640	10,856	15,573
2002	77	5,253	12,506	17,836
2003	80	5,260	12,434	17,774
2004	80	5,713	13,475	19,268
2005	91	5,469	12,953	18,513

Arterial and Local Street System

Intersection and mid-block crashes on the arterial street system are a major traffic safety concern in the region. Speeding and red light running are the key contributory factors for the more severe crashes. Past studies by the Insurance Institute for Highway Safety have identified Phoenix and Mesa as having high red light running crash rates based on population. A number of MAG jurisdictions have installed automated photo-enforcement systems to address speeding and intersection red light running. These systems have proven effective in reducing crashes at the installed intersection as well as in the surrounding area. Table 21-4 depicts the crash record on arterials and local street system in the MAG Region.

**TABLE 21-4
CRASHES ON THE ARTERIAL AND LOCAL
STREET SYSTEM (1999-2005)**

Year	Fatal	Injury	Property Damage Only	Total
1999	348	27,144	44,458	71,950
2000	318	27,581	45,426	73,325
2001	373	26,304	44,960	71,637
2002	366	25,508	44,611	70,485
2003	337	24,344	42,627	67,308
2004	340	25,147	46,224	71,711
2005	392	24,820	49,261	74,473

Bicycle Facilities

Developing safe bicycle facilities or bikeways as an integral part of a multi-modal transportation system in the MAG Region, and making bicycling a viable option for daily travel trips is a stated goal of the Regional Bicycle Plan. Other goals include, educating bicyclists and motorists in order to increase safety on shared roads, and educating engineers and planners on bicycle safety issues. The RTP encourages MAG member jurisdictions to develop safe bicycle facilities. The development of the MAG Regional Bikeway Master Plan is currently underway. This effort will also address the particular need to provide for safe road crossing facilities for users of the bikeway system.

The 2005 MAG Strategic Transportation Safety Plan has identified a number of goals, strategies and actions for improving bicyclist or pedestrian safety. A few of the goals and strategies are:

- **Goal # 1** - Reduce the number of crashes that involve bicyclists or pedestrians, by educating bicyclists on road safety; and promoting bicyclist training programs for youth and adults in coordination with Coalition of Arizona Bicyclists.
- **Goal # 2** - Improve safety on access routes to schools, by establishing recommended walk or bike routes to school, promoting Safe Routes to Schools programs, training crossing guards, encouraging safe driving near schools, and sponsoring new legislation on school citing.

Some MAG jurisdictions have also developed their own Bicycle Plans which further address bicycle safety. The most recent Bike Map published by MAG shows all of the on-street and off-street bicycle facilities in the region. The identification of types of bike facilities helps users anticipate what they are likely to encounter on each route.

It is difficult to obtain a comprehensive assessment of the safety of bicycle users, as crash data are available only for crashes that involve at least one motor vehicle on public roads. Table 21-5 depicts the crash record involving bicycle users in the MAG Region.

TABLE 21-5
CRASHES THAT INVOLVE BICYCLE USERS
(1999-2005)

Year	Fatal	Injury	Property Damage Only	Total
1999	19	1,511	234	1,764
2000	21	1,364	205	1,590
2001	19	1,214	177	1,410
2002	10	1,148	168	1,326
2003	8	1,101	162	1,271
2004	17	1,204	194	1,415
2005	25	1,170	195	1,390

Pedestrian Facilities

Although the percentage of pedestrian crashes in the region is relatively small, pedestrian safety is a primary area of concern due to very high fatality rates. In recent times, national studies have referred to Phoenix and Mesa as having very high pedestrian fatality rates. Table 21-6 depicts the crash record involving pedestrians in the MAG Region.

The 2005 MAG Strategic Transportation Safety Plan collectively addresses the topic of bicyclist and pedestrian safety as many of the road safety issues are common to both modes of movement.

Some of the goals identified in the Plan are: (1) incorporating safety considerations in pedestrian facility planning, (2) promoting safe multimodal access, and (3) reducing mid-block pedestrian crashes.

The Pedestrian Working Group and the MAG Pedestrian Plan 2000 have also incorporated a number of safety topics for consideration.

**TABLE 21-6
CRASHES THAT INVOLVE PEDESTRIANS
(1999-2005)**

Year	Fatal	Injury	Property Damage Only	Total
1999	78	1,014	43	1,135
2000	80	1,087	45	1,212
2001	92	1,015	37	1,144
2002	84	936	58	1,078
2003	82	935	56	1,073
2004	67	1,024	57	1,148
2005	87	956	56	1,099

High-Risk Drivers

Both younger drivers (of age less than 25 years) and older drivers (of age more than 65 years) are associated with elevated risk for vehicular crashes, based on their involvement in crashes. Older drivers have been observed to be particularly susceptible to crashes at intersections. Safety issues are always considered by local agencies when existing intersections are improved, such as by the addition of left-turn lanes. The adequacy of street signs and pavement markings for older drivers in the region is another safety issue. Potential regional initiatives that would assist older drivers include larger street name signs, and left-turn signal phasing and turning lanes at intersections. Tables 21-7 and 21-8 depict the crash record of younger and older drivers in the MAG Region.

**TABLE 21-7
CRASHES THAT INVOLVE YOUNGER DRIVERS
(1999-2005)**

Year	Fatal	Injury	Property Damage Only	Total
1999	201	18,727	33,231	52,159
2000	197	19,770	35,414	55,381
2001	206	16,358	26,868	43,432
2002	202	16,660	28,311	45,173
2003	162	15,897	27,113	43,172
2004	207	16,488	29,553	46,248
2005	229	16,047	30,648	46,924

**TABLE 21-8
CRASHES THAT INVOLVE OLDER DRIVERS
(1999-2005)**

Year	Fatal	Injury	Property Damage Only	Total
1999	73	4,253	6,520	10,846
2000	66	4,159	6,461	10,686
2001	57	3,990	6,295	10,342
2002	75	3,812	6,450	10,337
2003	75	3,824	6,265	10,164
2004	59	3,942	7,012	11,013
2005	75	3,948	6,966	10,989

Transit Riders and Operators

Through the procurement process for transit operations, RPTA requires operators to be apprised of safety and security issues, as well as to perform multiple functions related to safety of capital equipment. Contract incentives are provided for preventable accidents. Future improvements to safety and security in transit vehicles are being addressed through RPTA's Vehicle Management System Plan.

Strategic Transportation Safety Plan

The Strategic Transportation Safety Plan was developed in 2005 by the MAG Transportation Safety Committee as an immediate planning measure to address road safety needs in the region. It outlines specific goals and actions for improving safety generated by three working groups that focused on: (1) Roadways; (2) Enforcement, Education and Emergency Medical Services, and (3) Pedestrians and Bicycle and Transit Users. A summary of these goals is shown in Table 21-9.

**TABLE 21-9
SUMMARY OF SAFETY GOALS**

Goal	Roadway Safety	Enforcement, Education, EMS	Pedestrian, Bicycle, Transit
1	Develop a reliable and an efficient method to assess the safety performance of the regional transportation system.	Improve the overall public awareness on key road safety issues.	Reduce the number of crashes that involve bicyclists and pedestrians.
2	Promote road safety audits	Reduce crashes related to DUI, Speeding, red-light running and the illegal passing of stopped school buses.	Improve safety on access routes to schools.
3	Better utilize available road safety funds.	Strengthen driver training and licensing standards.	Incorporate safety considerations in pedestrian and bicycle planning.
4	Reduce the crash clearance time.	Reduce time to respond and clear crash sites.	Promote safe multi-modal access.
5	Reduce severe intersection crashes.	Educate the public on safe actions to take at road crash sites.	Reduce mid-block pedestrian crashes.
6	Improve traffic safety in work zones.		Enhance Transportation Security.
7	Conduct safety reviews of proposed LRT and BRT operations starting at design.		
8	Improved lighting, signage and delineation for older road users.		
9	Improved lighting, signage and accessibility for physically handicapped users.		

When developing the Plan, the safety stakeholders in the region expected that new funding would come from the much anticipated SAFETEA-LU reauthorization. Although SAFETEA-LU has created a new core program for safety called the Highway Safety Improvement Program (HSIP), no additional Federal funding has been made available to the states for improving safety. Therefore, the implementation of the Strategic Transportation Safety Plan is expected to occur through safety projects and initiatives launched at State, regional and local levels utilizing traditional funding sources. Lead agencies identified in the Plan have agreed to explore ways to pursue action under

each goal. The identification of Lead Agencies was based on the alignment of each agency's mission with respect to the goals, and did not involve any commitment of current or future agency resources.

Related Safety Planning Activities

Several safety projects and activities identified in the Strategic Transportation Safety Plan are being developed with currently programmed funds. Consistent with MAG roles as a regional planning agency, these activities are being pursued at an area-wide level.

Regional Transportation Safety Information Management System (RTSIMS)

The first goal listed under road safety recognizes the need for an Information Management System to provide the ability to extract safety performance information from transportation safety/crash data. Upon recognizing this need some years ago, regional funds were programmed for implementing such a system. The planned system will produce an annual safety report and enhance easy access to crash statistics for the region as well as for individual agencies.

Freeway Service Patrol

A MAG project launched the region's first Freeway Service Patrol. This service involves prompt motorist assistance provided by Roadside Motorist Assistants that are driving fully-equipped patrol vehicles on the regional freeway system. This service is staffed by civilian employees of the Department of Public Safety (DPS) and funded through a contract between MAG and DPS. The launching of the service and its ongoing operation is currently funded for five years, with ADOT funding the last three years. This service will improve overall safety on the urban freeway system. Similar patrols in other regions of the nation have proven to be extremely effective. Funds for this program through 2026 have been identified in the RTP as part of the region's transportation system management program.

Regional School Crossing Guard Training

The City of Phoenix has been training its crossing guards through a structured workshop over the past 40 years, and has received material attention for their efforts. MAG has taken proactive steps to improve safety near schools, and has encouraged other member cities and towns to participate in a regional training workshop. MAG is planning on conducting this workshop on an annual basis.

Safe Routes to School Program

SAFETEA-LU recognizes the importance of safety around schools, and recognizes the epidemic of obesity in children. It allocates a minimum of \$1 million statewide for school safety. MAG is still waiting on guidelines from State on how and where this money will be spent.

CHAPTER TWENTY TWO

TRANSPORTATION SECURITY

The purpose of this chapter is to provide an overview of transportation security, and to discuss security-related issues and ongoing efforts that are currently being coordinated to protect transportation networks and facilities at the Federal, State and regional levels. This chapter will consider a variety of responses to national security issues as they pertain to transportation, and will focus on a number of agencies and transportation security efforts at various levels of government. While it is acknowledged that there are many smaller agencies, offices, consortiums, groups and committees that are committed to providing various aspects of security, this chapter will address some of the primary governmental and regional efforts that directly impact, assess, or implement measures to protect transportation facilities, systems and networks.

Transportation Security Concepts

When reviewing transportation security, immediately following the September 11, 2001, terrorist attacks on the United States, many agencies began to develop and implement policies and programs to provide for the safety and security of the nation's transportation networks. Also, recent attacks on foreign public transit systems have heightened the need for increased transit security efforts in American cities. Although programs for transportation safety have been around for many years, the concept of planning for transportation security and implementing security procedures on different modes of transportation is relatively new. In some cases, the phrases "safety" and "security" are used simultaneously or interchangeably by many agencies to describe planning or programming components of broader transportation programs or initiatives. However, the intent of the words "safety" and "security" are different from one another. By definition, safety can be described as the "freedom from danger," whereas security is the "freedom from *intentional* danger." While implementing safety programs for transportation is intended to protect the motoring and non-motoring public by reducing fatalities, injuries and crashes, the implementation of security measures and security programs are developed to identify and prevent attacks that are intended to harm people, facilities, modes of travel and important transportation infrastructure.

Transportation security efforts consist of programs, measures or initiatives that are primarily focused on an overall transportation system, or network, which collectively comprise our overall means of travel. However, another important aspect of transportation security is concerned with maintaining the American economy and allowing for the free flow of goods. Protecting free trade and allowing for the safe movement of imports and exports is vital to the economy of the United States, and involves providing a high level of security for the nation's overall freight system. Therefore, when considering transportation mobility and the movement of goods, the implementation, or planning for transportation security measures or policies is crucial to protecting important transportation infrastructure. Important infrastructure includes a variety of elements such as roads and freeways; local and regional road networks; bridges; tunnels; emergency access roads; connector roads; railroads; ports; intermodal passenger facilities; intermodal cargo facilities; freight corridors; pedestrian and bicycling networks; airports; pipelines; public transit systems and evacuation corridors.

Another aspect of providing for secure transportation has to do with the subject of “emergency planning.” While transportation security is directly related to preventing attacks that are intended to harm people and damage facilities, harm modes of travel, and harm important transportation infrastructure, emergency planning is intended to respond to unforeseen natural events and disasters. A security incident is one that directly pertains to acts of terror resulting in regional, local or specific-location attacks on people, sites, facilities, or transportation infrastructure; whereas emergency response planning efforts maintain responsibility for preparedness, and response and recovery to natural disasters such as earthquakes, floods, hurricanes, violent weather, fires, and similar incidents. However, there are several agencies that coordinate on security and safety matters for the purpose of homeland security. The term “homeland security” refers to domestic governmental actions designed to prevent, detect, respond to, and recover from acts of terrorism, and also respond to natural disasters. Homeland security is a definition, or broader concept that typically refers to a concerted, national effort to protect the homeland by all levels of government at the Federal, State, local and tribal levels, for the sole purpose of protecting the territory of the United States from internal and external hazards.

The following sections of this chapter will address a variety of transportation security efforts at various levels, and also provides a summary that identifies the Maricopa Association of Governments (MAG) future role in regional transportation security efforts. The information located within Table 22-1 identifies a list of Federal agencies, State agencies, and regional efforts within the MAG Region that actively address transportation security concerns on a regular basis. Table 22-1 displays each agency responsible for addressing the primary transportation “sectors of concern” relating to roads, transit, air transportation facilities, cargo facilities and commodity movements, and transportation security planning. While these efforts may range from the active implementation of programs and measures, to lesser actions of simply coordinating activities with other agencies, the role of each agency enhances security on the MAG regional transportation network. The agencies identified in Table 22-1 collectively represent a multifaceted and layered approach to protecting and maintaining security, and responding to potential incidents throughout the MAG Region.

U.S. Department of Transportation Programs

The U.S. Department of Transportation is responsible ensuring a fast, safe, efficient, accessible, and convenient transportation system that meets national interests and enhances the quality of life for the nation’s citizens. The department consists of 11 administrations, which are collectively responsible for establishing national transportation policies pertaining to highway planning, development and construction; mass transit; aviation; railroads; ports, waterways and pipelines; and transportation safety and security issues. Individual administrations coordinate with officials at the State, regional and local levels on fiscal, regulatory, administrative and policy-related matters. Although each administration with the U.S. Department of Transportation is involved with different aspects of transportation security, the following information will provide a brief overview of agencies that are directly involved in various aspects of MAG’s regional transportation system. These agencies include the Federal Highway Administration, the Federal Transit Administration, the Federal Railroad Administration, and the Federal Aviation Administration.

TABLE 22-1

AGENCIES AND TRANSPORTATION SECURITY EFFORTS BY SECTOR OF CONCERN					
AGENCY	SECTOR OF CONCERN				
	Roads	Transit	Air Transportation Facilities	Cargo Facilities and Commodity Movements	Transportation Security Planning
US DEPARTMENT OF TRANSPORTATION	•	•	•	•	•
• Federal Highway Administration	•				•
• Federal Transit Administration		•			•
• Federal Railroad Administration		•			•
• Federal Aviation Administration			•	•	•
U.S. DEPARTMENT OF HOMELAND SECURITY	•	•	•	•	•
• Transportation Security Administration			•	•	•
• U.S. Customs and Borders Protection			•	•	•
• Federal Emergency Management Agency	•				
TRANSPORTATION RESEARCH BOARD					•
STATE OF ARIZONA					
• Arizona Office of Homeland Security	•	•	•	•	•
• Arizona Department of Public Safety	•				•
• Arizona Department of Transportation	•	•	•	•	•
REGIONAL EFFORTS					
• Maricopa County Department of Emergency Management					•
• Maricopa Association of Governments 911 – Emergency Telephone					•
• Regional Public Transportation Authority/Valley Metro		•			•
• Valley Metro Rail		•			•

Federal Highway Administration

The Federal Highway Administration (FHWA) is responsible for ensuring that the nation's roads and highways are safe and efficient, and have access to the most current forms of technology that allows for a high-level of system performance. Through a variety of programs, the FHWA provides technical and financial support to State, local and tribal governments in an effort to allow for the construction, improvement, and preservation of the National Highway System. Assistance is also provided for roads on Federal lands, such as national parks and forests.

In time of national disasters or external security threats, the National Highway System serves as an essential component of the nation's defense mobility. The FHWA often conducts emergency preparedness meetings with State officials and members of the U.S. Military to specifically address a variety of issues pertaining to military deployment coordination during times of natural disasters and national security emergencies. The FHWA has worked with the U.S. Department of Defense, and is committed to strengthening deployment coordination and military mobilization during security emergencies by enhancing the conditions of the Strategic Highway Network (STRAHNET) and its connectors.

Shortly after September 11, 2001, the FHWA set up a National Infrastructure Security Committee at the U.S. Department of Transportation, to address intermodal security issues across the United States. Since then, FHWA has worked with States and a variety of local transportation agencies to increase the awareness and understanding of emergency planning and security operations. During September of 2003, the FHWA provided recommendations for maintaining national bridge and tunnel security. This was primarily done to develop strategies and practices for deterring and mitigating potential attacks. The FHWA has also worked with a number of states to identify vulnerable transportation facilities, and has conducted regional emergency management workshops. The FHWA has also supported communication links between public safety departments and the agencies responsible for providing operations; addressed the deployment of Intelligent Transportation System (ITS) projects; prepared a number of case studies addressing transportation security responses; and continues to meet with a variety of officials to discuss security issues as part of their ongoing coordination efforts.

Federal Transit Administration

The Federal Transit Administration (FTA) provides financial assistance to develop new transit systems throughout the country, and to improve and maintain other transit systems that are already in existence. The FTA is responsible for distributing grant funds to State and local transit providers, who in turn are responsible for operating their own systems and programs in accordance with Federal guidelines. The FTA also oversees many initiatives and programs that are directly related to transit, livable communities, financing, database maintenance, human services coordination, and Intelligent Transportation Systems (ITS). Although the FTA oversees many different aspects of transit, public transportation throughout the MAG Region is primarily limited to buses, maintenance facilities, vanpools and paratransit vehicles. However, as specified in the MAG Regional Transportation Plan (RTP), the FTA will provide funding for light rail's 20-mile Minimum Operating System within the cities of Tempe, Mesa and Phoenix, which will be fully operational during 2008. It is also assumed that the FTA will provide funding for future light rail extensions throughout the urban area of metropolitan Phoenix.

The FTA has also been very active through their attempts to develop a number of security measures. A primary focus of FTA is to integrate security throughout individual transit-provider programs, operations and transit infrastructure. In an effort to protect the general public from threats and terrorist attacks, the FTA has implemented provisions for direct funding and providing initiatives and assistance to local transit agencies throughout the country. In response to the September 11, 2001, terrorist attacks on the United States, the FTA announced a Five Point Initiative. FTA has begun the implementation of this initiative by assisting transit agencies in completing vulnerability assessments of their respective systems; by deploying technical assistance teams to a number of transit providers; by awarding grant funds to conduct emergency drills; by accelerating technology and research projects and initiatives by providing facilitated training; and by working to form regional collaborations and networks for the purpose of responding to security and emergency situations.

The FTA also addressed security issues by developing a comprehensive list of Security Program Action Items for transit corporations and agencies, which represent the most important elements for incorporation into individual System Security Program Plans. These items are based on good security practices identified through FTA's Security Assessments and Technical Assistance that is provided to the largest transit agencies. FTA is working with transit agencies to incorporate these practices into their programs.

In another effort to assist transit corporations and agencies throughout the country, FTA has developed a comprehensive, 20-point list of entitled *Security Program Action Items*. This checklist was specifically developed for transit agencies to incorporate the most important security elements pertaining to transit into their System Security Program Plans (SSPS). The items on the checklist are based on a compilation of best security practices that were identified through FTA's technical assistance and outreach efforts to develop security assessments for transit agencies and corporations. FTA also assesses a number of transit operation elements, and recommends the concept of integrating layered security systems into transit operations. The FTA also coordinates activities with the Transportation Security Administration, the intelligence community, and transit agencies and corporations throughout the country in an effort to continually enhance its transit security strategies.

Federal Railroad Administration

The Federal Rail Administration (FRA) is primarily responsible for enforcing rail safety; providing a number of assistance programs related to rail; addressing issues related to intermodal transportation; and conducting research for rail transportation policy and safety. The FRA is also responsible for addressing security-related issues. Through joint efforts with the U.S. Department of Homeland Security, the Transportation Security Administration (TSA), and the Federal Transit Administration (FTA), the FRA is working toward establishing initiatives that are intended to enhance security efforts. The FRA's efforts have been directed at addressing both passenger rail and freight rail security issues.

Shortly after the terrorist attacks on September 11, 2001, the FRA worked closely with the U. S. Department of Homeland Security to conduct comprehensive vulnerability assessments on passenger rail networks that operate in highly dense urban settings. The FRA is responsible for administering Federal grants to the Amtrak rail system throughout the United States, and has been working toward the assessment of Amtrak's nationwide passenger rail system in an effort to ascertain passenger rail's level of preparedness toward external security threats and acts of terrorism.

When assessing the movement of freight over rail corridors, the FRA also works with the U.S. Department of Homeland Security on issues related to implementing security action items on the movement of hazardous materials.

The FRA also works with the Association of American Railroads, which is a consortium of the nation's major freight railroads. Shortly after September 11, 2001, the Association of American Railroads assessed the nation's 142,000-mile rail system, and focused on areas pertaining to the identification and protection of critical assets; the movement and transportation of hazardous materials; freight operations; and the intensification of inspections. As a result of this assessment, they created a full-time operations center referred to as the Railway Alert Network (RAN), which is certified by the U.S. Department of Defense. This center works to monitor various levels of intelligence on potential threats to the national rail network. As part of this process, the Association of American Railroads also created the Surface Transportation Information Sharing and Analysis Center, which collects and analyzes physical and cyber threats to national rail freight security.

Federal Aviation Administration

The Federal Aviation Administration (FAA) is primarily responsible for regulating civil aviation to promote safety and to develop civil aeronautics, new aviation technologies, and to oversee a system of air traffic control and navigation for civil and military aircraft throughout the country. The FAA also works to control aircraft noise, regulates commercial air transportation, and researches and develops the National Airspace System. In addition, the FAA maintains an Internal Security function that specifically works to reduce and eliminate risks associated with terrorism, sabotage, espionage, theft, vandalism and a variety of other criminal acts. Although the FAA has an internal security function, it also maintains an active and open working partnership with the Transportation Security Administration (TSA). The TSA is responsible for screening airline passengers in an effort to minimize security threats. The TSA is also responsible for screening all air cargo materials and onboard airline baggage, and ensures that all commercial air activity is free from potential security risks.

U.S. Department of Homeland Security Programs

The U.S. Department of Homeland Security (DHS) was established during the aftermath of the September 11, 2001, attacks on the nation. The agency is responsible for protecting the security of the United States from external threats and terrorist attacks, and for responding to natural disasters and domestic emergencies. The Department was created from 22 existing Federal agencies, and today consists of a number of directorates and eight other departments. As part of the agency's mission, the DHS leverages resources at the Federal, State and local levels, and thereby coordinates the transition of multiple agencies and layers of government into a single, integrated agency that is focused on protecting the overall security of the American people. As reported by the DHS, there are currently more than 87,000 different governmental jurisdictions at the Federal, State and local levels that are charged with employing homeland security responsibilities. This is a strategy of maintaining a complementary system that connects all levels of government without duplicating efforts, resulting in a "national mission" of security.

The DHS is primarily concerned with items such as border security, critical infrastructure protection, emergency preparedness and response, domestic intelligence activities, biodefense,

researching and implementing security technologies, the detection of nuclear and radiological materials, and the provision of transportation security. Although DHS consists of many agencies that are responsible for national security issues, the agencies listed below have a direct responsibility for overseeing cargo movements and aviation activities within the MAG Region.

U.S. Customs and Borders Protection

The U.S. Customs and Border Protection (CBP) agency is responsible for the overall protection of the country's borders, and for facilitating the flow of legal trade and travel. The CBP prevents terrorists and dangerous weapons from entering into the country, and enforces hundreds of U.S. Trade and immigration laws. The agency processes incoming and outgoing passengers, pedestrians, cargo, vehicles and ships, and protects the nation's borders with Canada and Mexico. The CBP is also responsible for protecting the nation's shorelines. Aside from border patrol enforcement, the CBP is also responsible for processing all incoming trade via truck, rail, ship and sea containers, and for managing the nation's 317 ports of entry at terminals, ports and airports. After September 11, 2001, the CBP established the Container Security Initiative (CSI), which identifies high-risk containers; uses technology to screen high-risk containers at a faster pace; uses smarter and secure, tamper proof containers; and prescreens containers before they are shipped. This level of scrutiny is extremely vital to national security, because once received, the majority of these imported containers are shipped from American ports of entry to all destinations throughout the country, including Arizona.

The CBP is also responsible for maintaining security for incoming trade to Arizona's Foreign – Trade Zones. Foreign-Trade Zones are defined by the CBP as secure areas under customs supervision that are generally considered outside the customs area, upon activation of the zone. Merchandise located in the zone can be shipped in “duty-free” for the purposes of storing, packing, repackaging, assembling or manufacturing. There are currently Foreign-Trade Zones located at Phoenix Sky-Harbor and Mesa Williams Gateway airports. To ensure security, the CBP maintains verification and inspection of incoming shipments at these facilities, and offers a full-range of cargo processing functions. As U.S. ports of entry, shipments coming into the Phoenix Sky Harbor and Mesa Williams Gateway airports are subject to the same levels of scrutiny and enforcement procedures that are implemented at other Foreign-Trade Zones throughout the country.

Transportation Security Administration

The Transportation Security Administration (TSA) was created on November 19, 2001, as part of the Aviation and Transportation Security Act. The agency was created to fill three separate mandates, which included the creation of a new Federal agency with the responsibility for providing security on all modes of transportation; to recruit and train security officers for commercial airports at 450 locations; and to take on the responsibility of screening all commercial luggage and packages for explosives and other threats. The TSA maintains the mission of protecting air passengers, and has deployed Federal air marshals aboard commercial air flights. The Federal air marshals serve as the primary law enforcement entity within TSA, and also work closely with a variety of other law enforcement agencies in order to provide security for airline passengers. The TSA also maintains programs that place an emphasis on law enforcement training teams, canine detection teams, deploying Federal flight deck officers, hazardous materials training, crew member self defense, a registered traveler program, and the implementation of transit and rail inspection pilot programs.

The TSA has also created an Air Cargo Program, which has recommended enhancements to the current security requirements for various types of cargo carried on commercial aircraft.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is responsible for preparing the nation for potential hazards, and effectively coordinating and managing a national response to an array of disasters such as earthquakes, hurricanes, tornadoes, fires, floods, hazardous material spills, and terrorist threats. FEMA works in coordination with other organizations and agencies that are part of the nation's emergency management system. Some of FEMA's primary goals are focused on reducing the loss of life and property; minimizing the level of disruption and suffering affiliated with the consequences of a national disaster; serving as the nation's portal for emergency management information and services; and preparing the nation to address issues and consequences associated with terrorist activities. FEMA functions as the independent Federal agency responsible for leading the nation's efforts to prepare for, prevent, respond to, and recover from disasters.

Under the U.S. Department of Homeland Security, FEMA has formed the internal Office of National Preparedness. This FEMA office serves to implement terrorism incident management programs, and is responsible for coordinating efforts with State and local governments to prepare functions that are necessary to manage natural disaster and terrorist related emergencies. FEMA works in coordination with other agencies, and also works to address issues pertaining to transportation mobility and security at different levels of government during times of natural disasters and terrorist attacks.

Transportation Research Board

The Transportation Research Board (TRB) is a division of the National Research Council, and functions within an advisory role to the Federal government and other entities on subject matters of national importance. The primary purpose of the TRB is to promote innovation and progress through solid transportation research. TRB has been very active in the process of providing research on the subject of transportation system security, and has collaborated with all levels of Federal government and the private sector. The TRB conducts special studies on a number of transportation policy issues and research items at the request of the United States Congress, and at the request of government agencies.

State of Arizona Programs

Arizona Department of Homeland Security

Governor Janet Napolitano created the Arizona Office of Homeland Security during March of 2003, in an effort to coordinate activities of the U.S. Department of Homeland Security at all levels of government within the State of Arizona. In 2006, the Arizona Office of Homeland Security became the Arizona Department of Homeland Security. As defined, the mission of the Arizona Department of Homeland Security is to enhance the State's ability to detect and prevent future acts of terrorism and to improve "all hazards" preparedness, response and recovery capabilities. The office coordinates with Federal, State, county, municipal, tribes, citizens, and members of private entities in order to provide security initiatives.

Arizona Department of Public Safety

The mission statement of the Arizona Department of Public Safety is to “protect human life and property by enforcing State laws, deterring criminal activity, assuring highway and public safety, and providing vital scientific, technical, and operational support to other criminal justice agencies. The Arizona Department of Public Safety is comprised of four divisions, which include highway patrol, agency support, criminal investigations and criminal justice support. Aside from providing for safety and law enforcement activities, the Arizona Department of Public Safety is also responsible for responding to security threats and engaging in homeland security and counter-terrorism tactics.

Arizona Department of Transportation

The Arizona Department of Transportation (ADOT) coordinates activities with the U.S. Department of Transportation on a variety of modes for the purpose of providing transportation security, and also works with State and local agencies on issues pertaining to transportation security. Ongoing security efforts and policies by ADOT include the following:

- Utilization of Homeland Security Grant Funds to Support Internal Projects:
 - Continuity of Operations
 - Interoperable Communications
 - Cyber Security
 - Automated Vehicle Location Devices on Critical Vehicles
 - HAZMAT
 - Needs Assessment
 - Vulnerability Assessment
 - Security Locks at Fueling Station Yards (provide fuel for first responders)
 - Video Equipment at key ports of entry
- Internal Programs:
 - Vulnerability Assessment of Highway/Interstate Structures (bridges, tunnels, etc.)
 - Employee Awareness and Training of Emergency Preparedness
 - Homeland Security Threat Level Advisory Checklist
 - Business Continuity/Disaster Recovery Planning
 - Emergency Operations Planning
- Continued Support and Distribution of Public Information via 511 and www.az511.com
- Support of State, Regional, and National Programs:
 - National Incident Management System (NIMS) Compliance
 - State Emergency Response and Recovery Plan (SERRP)
 - Participation in Local, Regional, and Statewide Exercises for Emergency Preparedness
 - Participation in Urban Area Security Infrastructure (UASI) Efforts and Exercises

MAG Area Programs

Maricopa County Department of Emergency Management

The Maricopa County Department of Emergency Management is responsible for providing a comprehensive emergency management program for Maricopa County. The department is responsible for coordinating response and recovery activities through the implementation of emergency response plans during and after emergencies. As part of the emergency response process, the county calls for a system that coordinates implementation through assistance from local cities and towns, volunteer agencies, and other agencies and county departments. Some of the departmental functions include assisting with, and developing strategies for homeland security; maintaining and monitoring a warning and communications system; providing disaster assistance training to hospitals and nursing homes; assisting schools with emergency planning; the provision of disaster assistance; assisting in the testing and administration of the Maricopa County Medical Alerting System (MCMAS); maintaining public awareness; and coordinating the activities of several committees for the purposes of implementing emergency management services.

During July of 2004, the Maricopa County Department of Emergency Management developed an *Emergency Evacuation Strategy Plan* for the County, in an effort to address mass evacuation during times of potential security threats, emergencies, and disasters. The study was jointly administered by the Maricopa County Department of Transportation. The *Emergency Evacuation Strategy Plan* examined existing conditions of municipal emergency operations plans, completed a traffic analysis, established evacuation goals, objectives, and agency goals, and developed emergency evacuation strategies for Maricopa County.

MAG 9-1-1 Emergency Telephone Number

In the late 1970s, the Maricopa Association of Governments (MAG) formed a committee to implement the 9-1-1 emergency telephone number system in Maricopa County. This system became operational on September 9, 1985. A MAG Committee comprised of public safety managers meets on a regular basis to make recommendations regarding operational issues, and to guide the purchase of new equipment to ensure system compatibility. The City of Phoenix serves as the contract agent for the system. In January 2003, MAG was awarded a contract by the Arizona Department of Environmental Quality to establish and operate the Community Emergency Notification System that provides emergency agencies within the MAG 9-1-1 service area with the ability to notify citizens by telephone (in English or Spanish) of evacuations, security threats, or other emergencies. The system became operational on January 1, 2004.

Valley Metro/Regional Public Transportation Authority

The Valley Metro/Regional Public Transportation Authority (RPTA), or otherwise referred to as "Valley Metro," is the agency responsible for providing transit planning services to the MAG Region. Valley Metro is by definition a political subdivision of the State of Arizona, and is overseen by a board of elected officials. Valley Metro provides public bus services; provides for the oversight of dial-a-ride services, vanpool programs and the regional rideshare program; paratransit services; and also promotes the marketing of programs such as the regional Clean Air Campaign and the Maricopa County Trip Reduction Program. Valley Metro provides public transit information to the

public, and is also responsible for the operations and maintenance of their vehicle fleets. Valley Metro has a total of 13 member agencies, which include the cities of Avondale, Chandler, El Mirage, Glendale, Mesa, Peoria, Phoenix, Scottsdale, Surprise, and Tempe; the towns of Gilbert and Queen Creek; and Maricopa County.

The Federal Transit Administration (FTA) has been very active through their attempts to work with transit providers across the country to develop security measures, which are intended to protect members of the transit public, and to also protect vital components of transit system infrastructure. With regard to transportation security, Valley Metro currently coordinates a number of activities with FTA. In an effort to assess and respond to security issues, Valley Metro recently completed a Transit Threat and Vulnerability Analysis at several East Valley facilities. This analysis considered general threat conditions and potential vulnerabilities to attacks, and also involved personnel interviews, site visits and documentation review. The analysis findings and mitigation factors were considered by Valley Metro staff, and resulted in a number of recommended actions that will directly respond to potential threats and vulnerabilities. In addition to this effort, Valley Metro is also in the process of completing a *Regional Safety and Security Study*, which will be completed during January of 2007. This study will conduct a thorough analysis of the transit system, and address techniques and principles to implement system security requirements.

Valley Metro Rail

Valley Metro Rail, commonly referred to as “METRO,” maintains a System Safety and Security Department that is responsible for establishing requirements for the identification, evaluation, and minimization of safety and security risks during construction, testing, and revenue operations for regional light rail. The department has developed, and is currently administering provisions of a System Safety Program Plan, System Security Program Plan, and Safety and Security Certification Plan. METRO's safety and security programs have been developed in cooperation with the Arizona Department of Transportation (ADOT), which is the designated State Oversight Agency for light rail projects in Arizona.

Future Security Program Efforts

This Chapter provided an overview of agencies at the Federal, State and Regional levels, which collectively address various aspects of transportation security throughout the MAG Region. Since the September 11, 2001, terrorist attacks on the United States, the Federal government and the State of Arizona have taken considerable steps to protect the nation's transportation networks, which include roads, local and regional rail networks, passenger and freight terminals, port facilities, intermodal facilities, transportation infrastructure and transit systems. Many Federal and State agencies have taken leading roles to ensure the implementation of security procedures within Arizona, which also includes the implementation of necessary security measures within the MAG Region.

Federal and State agencies will continue to refine transportation security measures over the years, and work toward closer cooperation, coordination and integration of tasks at all levels of government in an effort to provide safe transportation networks and facilities throughout the United States. Although MAG does not currently have a direct role in Federal and State Transportation Security policy decisions, in the future, MAG will continue to maintain a supportive regional role for

transportation security planning. As the regional Metropolitan Planning Organization, MAG will work to coordinate activities with local, State and Federal agencies and officials in order to provide a regional forum on security issues, and will continue to provide a high level of support for existing and ongoing transportation security measures.

CHAPTER TWENTY-THREE

AIR QUALITY CONFORMITY

As required by the Clean Air Act, an air quality conformity analysis was conducted by MAG on the Draft FY 2008-2012 Transportation Improvement Program (TIP) and the Draft Regional Transportation Plan – 2007 Update (RTP), as a whole. The conformity analysis demonstrates that the TIP and RTP are in conformance with regional air quality plans and will not contribute to air quality violations. In its entirety, the conformity analysis demonstrates that the criteria specified in the federal transportation conformity rule for a conformity determination are satisfied by the TIP and RTP. A description of the conformity requirements, conformity tests, and the results of the 2007 Conformity Analysis are summarized below. The 2007 MAG Conformity Analysis supports a finding of conformity for the FY 2008-2012 Transportation Improvement Program and Regional Transportation Plan – 2007 Update.

Conformity Requirements

The federal transportation conformity rule (40 Code of Federal Regulations Parts 51 and 93) specifies criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. Under the federal transportation conformity rule, the principal criteria for a determination of conformity for transportation plans and programs are:

- The TIP and RTP must pass an emissions budget test with a budget that has been found to be adequate or approved by the U.S. Environmental Protection Agency (EPA) for transportation conformity purposes, or interim emissions tests.
- The latest planning assumptions and emission models in force at the time the conformity analysis begins must be employed.
- The TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans.
- Consultation generally occurs at the beginning of the conformity analysis process on the proposed models, associated methods, and assumptions for the upcoming analysis and the projects to be assessed, and at the end of the process on the draft conformity analysis report. The final determination of conformity for the TIP and RTP is the responsibility of the Federal Highway Administration and the Federal Transit Administration.

Conformity Tests

The conformity tests specified in the federal transportation conformity rule are: (1) the emissions budget test, and (2) the interim emissions tests. For the emissions budget test, predicted emissions for the TIP and RTP must be less than or equal to the motor vehicle emissions budget specified in the approved air quality implementation plan or the emissions budget found by EPA to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in nonattainment or no emissions budget found to be adequate for transportation conformity purposes, interim emissions tests apply.

For the 2007 MAG Conformity Analysis, for carbon monoxide the emissions budget test was applied using the approved conformity budgets from the Carbon Monoxide Maintenance Plan. For eight-hour ozone, two interim emissions tests were performed for volatile organic compounds and nitrogen oxides: an adjusted one-hour ozone budget test and a no-greater-than-2002 baseline

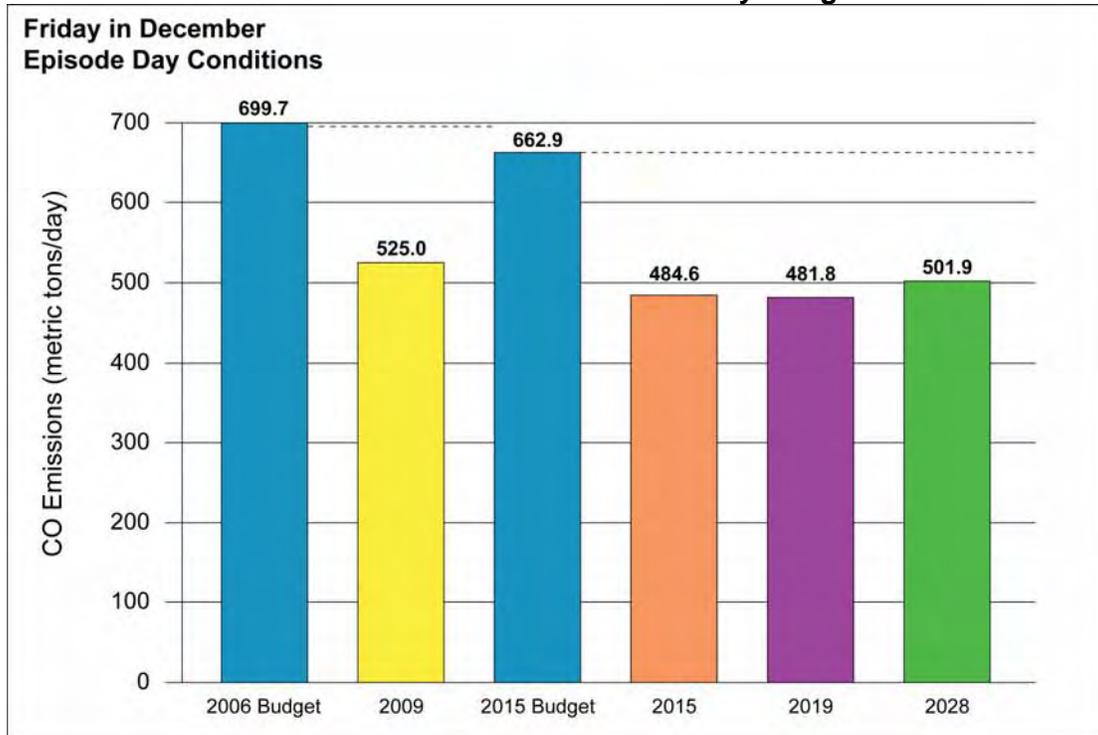
emissions test. For PM-10, the emissions budget test was applied using the approved conformity budget from the Revised MAG 1999 Serious Area PM-10 Plan.

Results of the Conformity Analysis

A regional emissions analysis was conducted for carbon monoxide for the years: 2009, 2015, 2019, and 2028. For the eight-hour ozone precursors (volatile organic compounds and nitrogen oxides), and PM-10, a regional emissions analysis was conducted for the years: 2009, 2019, and 2028. All analyses were conducted using the latest planning assumptions and emissions models in force at the time the conformity analysis started on April 26, 2007. The major conclusions of the 2007 MAG Conformity Analysis are:

- For carbon monoxide, the total vehicle-related emissions associated with implementation of the TIP and RTP for the analysis year 2009 are projected to be less than the approved 2006 emissions budget, and the emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis years 2015, 2019, and 2028 are projected to be less than the approved budget for 2015. The applicable conformity test for carbon monoxide is therefore satisfied. The results of the regional emissions analysis for carbon monoxide are presented in Figure 23-1.
- For eight-hour ozone, the total vehicle-related volatile organic compound and nitrogen oxide emissions associated with implementation of the TIP and RTP for the analysis year 2009 are projected to be less than the adjusted 2006 emissions budgets for the one-hour ozone maintenance area. The volatile organic compound and nitrogen oxide emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis years 2019 and 2028 are projected to be less than the adjusted 2015 emissions budgets for the one-hour ozone maintenance area. In addition, the vehicle-related volatile organic compound and nitrogen oxide emissions associated with implementation of the TIP and RTP for the analysis years are projected to be less than the 2002 baseline emissions for the eight-hour ozone nonattainment area. The applicable conformity tests for eight-hour ozone are therefore satisfied. The results of the regional emissions analysis for eight-hour ozone are presented in Figures 23-2, 23-3, 23-4, and 23-5.
- For PM-10, the total vehicle-related emissions associated with implementation of the TIP and RTP for the analysis years of 2009, 2019, and 2028 are projected to be less than the 2006 emissions budget approved for transportation conformity purposes in the Revised MAG 1999 Serious Area Particulate Plan for PM-10. The conformity test for PM-10 is therefore satisfied. The results of the regional emissions analysis for PM-10 are presented in Figure 23-6.
- A review of the implementation status of Transportation Control Measures in applicable air quality plans has indicated that the TIP and RTP will provide for the timely implementation of the TCMs and there are no obstacles to the implementation of any TCM.
- Consultation has been conducted in accordance with federal requirements.

**Figure 23-1
Carbon Monoxide Results for Conformity Budget Test**



**Figure 23-2
Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results for Adjusted One-Hour
Ozone Budget Test**

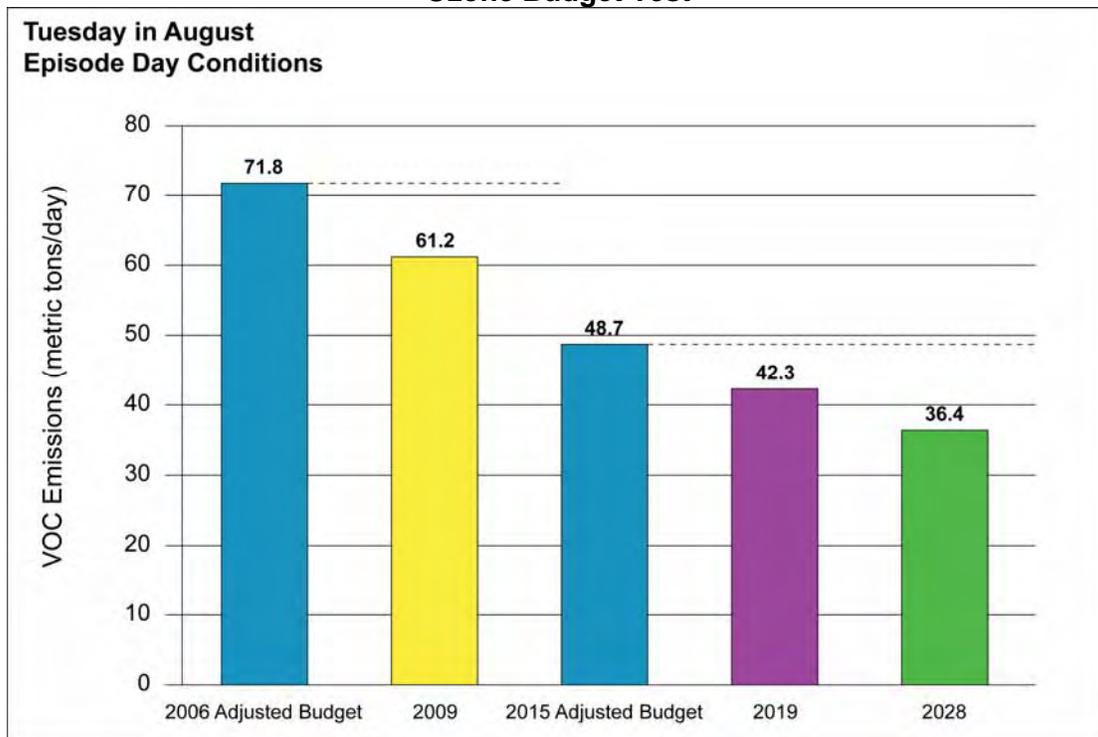


Figure 23-3
Eight-Hour Ozone: Nitrogen Oxides (NOx) Results for Adjusted
One-Hour Ozone Budget Test

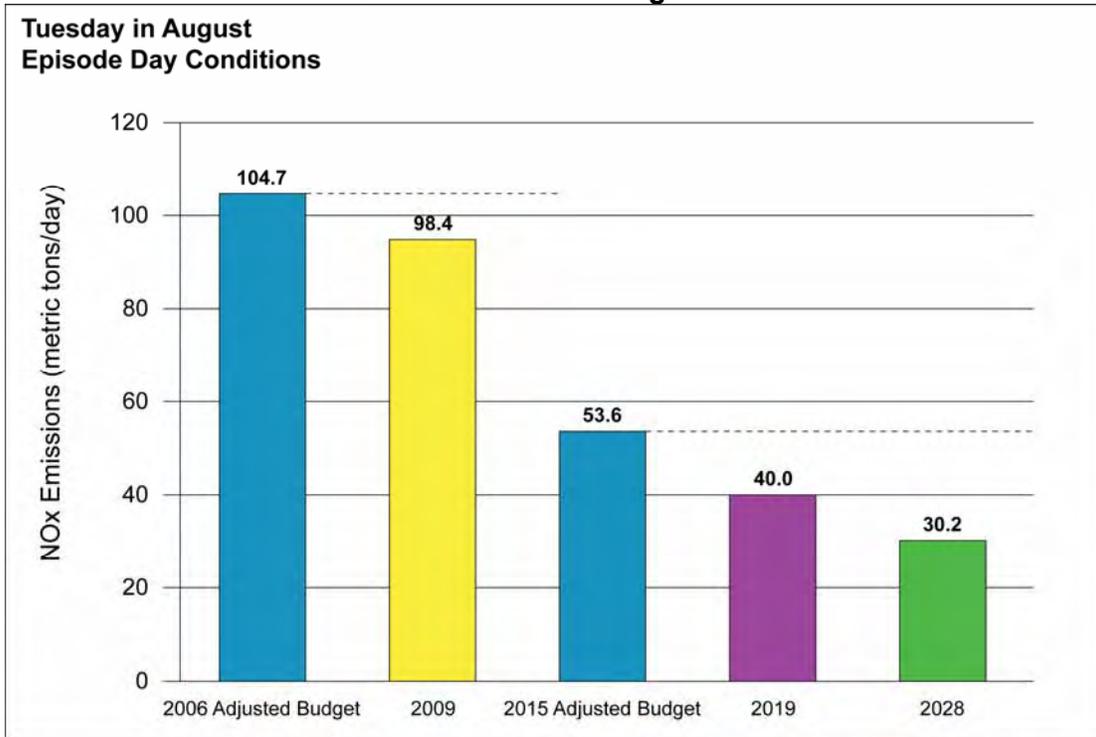


Figure 23-4
Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results for the No-Greater-Than-
2002 Baseline Emissions Test for the Eight-Hour Ozone Nonattainment Area

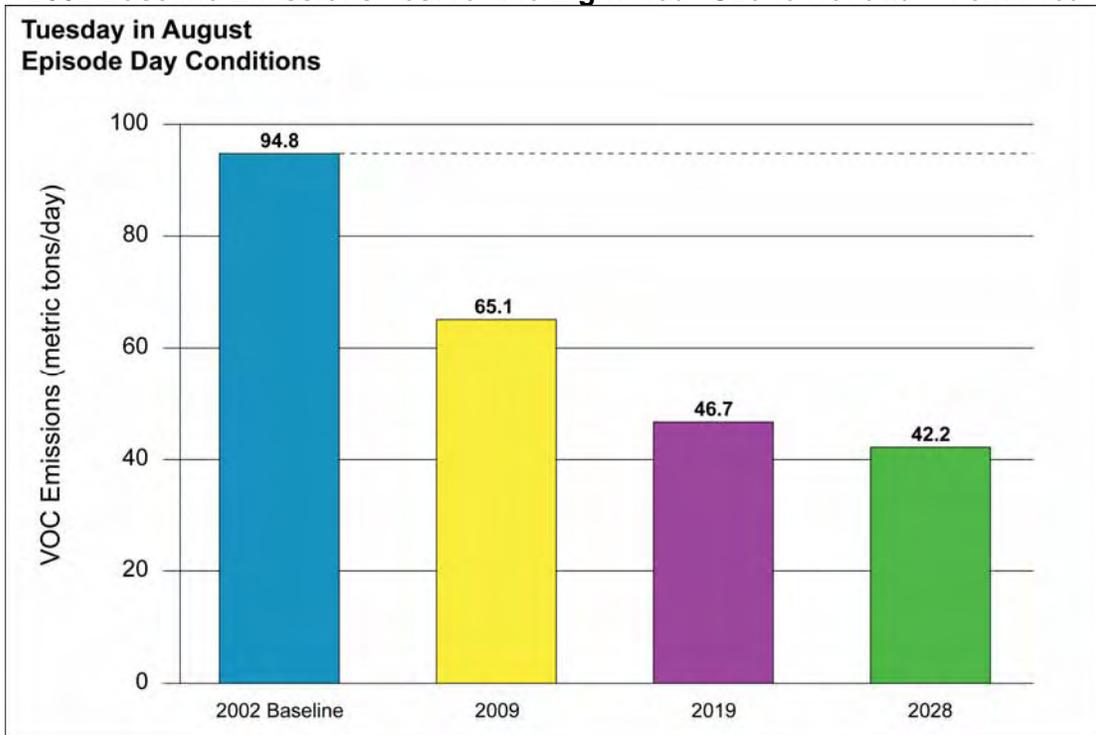


Figure 23-5
Eight-Hour Ozone: Nitrogen Oxides (NOx) Results for the No-Greater-Than-2002 Baseline
Emissions Test for the Eight-Hour Ozone Nonattainment Area

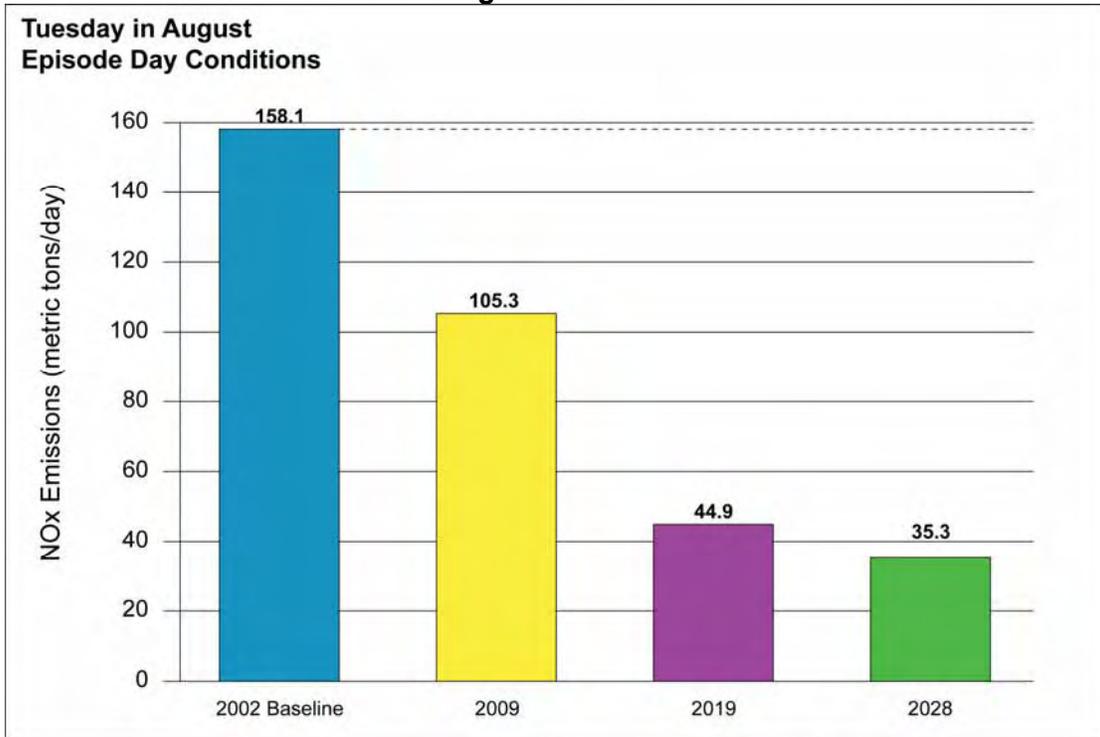
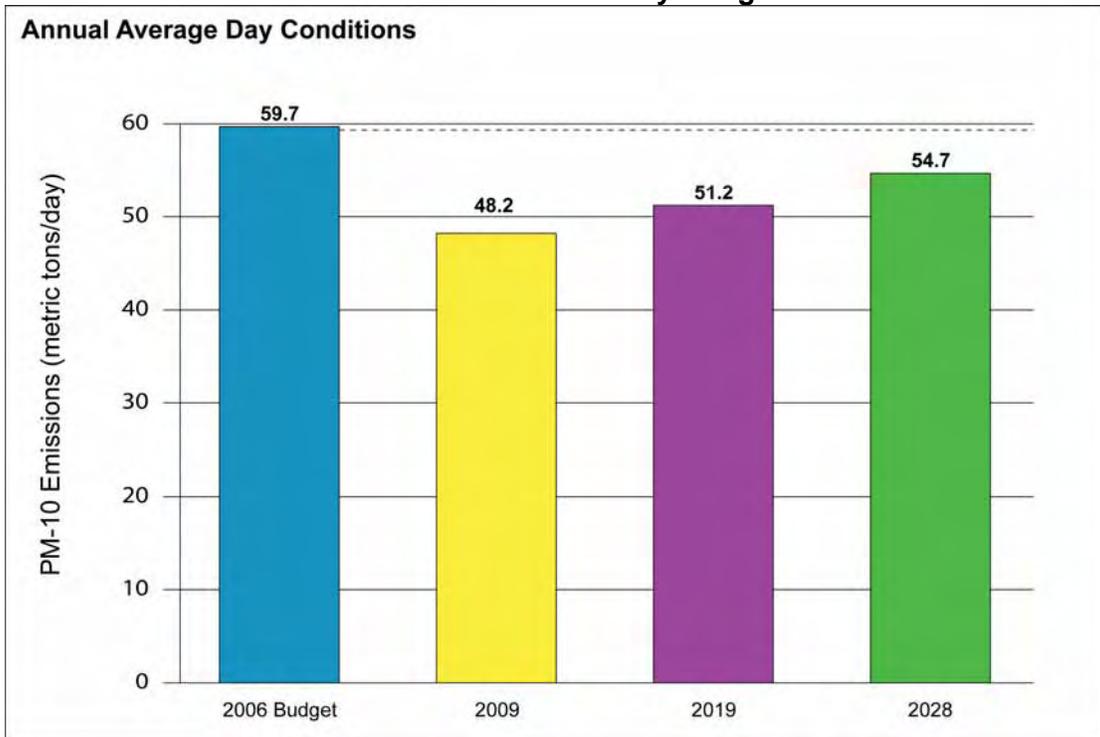


Figure 23-6
PM-10 Results for Conformity Budget Test



Appendix A

Freeway/Highway Life Cycle Program

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
10	GPL	101L, Agua Fria - I-17 (Construction)	68.0			68.0																
10	GPL	40th St - Baseline Rd, CD Road (Construction)	105.8			50.0	55.8															
10	GPL	40th St - Baseline Rd, CD Road (Construction)	71.1			71.1																
10	GPL	40th St - Baseline Rd, CD Road (Construction)	85.0				85.0															
10	GPL	40th St - Baseline Rd, CD Road (Construction)	85.0					85.0														
10	HOV/GPL	Sarival Rd - Dysart Rd (Construction), City Adv. (City Portion: \$73.4M)	79.0	44.0	35.0																	
10	HOV/GPL	Sarival Rd - Dysart Rd (Construction), Pavement Preservation Fund	6.0	6.0																		
10	GPL	SR51 - 40th St, CD Road (Construction)	120.0					120.0														
10	HOV/GPL	202L, Santan - Riggs Rd (Construction)	65.0			65.0																
10	HOV/GPL	Dysart - 101L (Construction), City Advancement	51.0	51.0																		
10	TI	Perryville Rd (Construction)	8.2					8.2														
10	GPL	Baseline Rd - 202L, Santan (Construction)	48.0						48.0													
10	GPL	SR85 - Verrado Way (Construction)	73.8																73.8			
10	GPL	Verrado Way - Sarival Rd (Construction)	43.2		43.2																	
10	TI	Chandler Heights (Construction)	12.4															12.4				
10	TI	EI Mirage Rd (Construction)	15.6																15.6			
10	IMP	Southern Ave - SR 143 (Construction)	3.1	3.1																		
10	TI	SR 347 (Construction)	0.3	0.3																		
10	TI	Desert Creek (Construction); Private Funds	18.5		18.5																	
		I-10 Construction:	959.0																			
10	GPL	101L, Agua Fria - I-17 (Design)	3.7		3.7																	
10	TI	Perryville Rd (Design)	0.5					0.5														
10	GPL	40th St - Baseline Rd, CD Road (Design)	5.5		5.5																	
10	GPL	40th St - Baseline Rd, CD Road (Design)	4.1		4.1																	
10	GPL	40th St - Baseline Rd, CD Road (Design)	4.7		4.7																	
10	GPL	40th St - Baseline Rd, CD Road (Design)	4.7			4.7																
10	GPL	SR51 - 40th St, CD Road (Design)	10.0			10.0																
10	HOV/GPL	Sarival Rd - Dysart Rd (Design), City Advancement	1.9	1.9																		
10	LNDSCP	Sarival Rd - Dysart Rd (Landscape Design)	0.3			0.3																
10	HOV/GPL	202L, Santan - Riggs Rd (Design)	2.3		2.3																	
10	GPL	Baseline Rd - 202L, Santan (Design)	2.6						2.6													
10	GPL	SR85 - Verrado Way (Design)	8.5														8.5					
10	GPL	Verrado Way - Sarival Rd (Design)	3.7	3.7																		
10	TI	Chandler Heights (Design)	1.4														1.4					
10	TI	EI Mirage Rd (Design)	1.7															1.7				
10	IMP	Southern Ave - SR 143 (Design)	0.2	0.2																		
10	TI	Desert Creek (Design); Private Funds	1.9	1.9																		
		I-10 Design:	57.8																			
10	FMS	Dysart - 83rd Ave (Design & Construction)	5.5								5.5											
		I-10 Multi Phase(Combination of Design, R/W, Construction):	5.5																			
10	GPL	40th St - Baseline Rd, CD Road (R/W)	25.0	5.0	20.0																	

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
10	GPL	SR51 - 40th St, CD Road (R/W)	10.0			10.0																
10	GPL	Sarival Rd - Dysart Rd, Outside lane (R/W)	3.0	3.0																		
		I-10 R/W:	38.0																			
17	LNDSCP	101L - SR 74, Carefree Highway (Landscape Construction)	3.0			3.0																
17	MISC	Bethany Home Rd - Northern Ave, Alhambra District (Construction)	2.3			2.3																
17	GPL	Arizona Canal - 101L (Construction)	48.0						48.0													
17	FMS	Arizona Canal - Happy Valley Rd (Construction)	8.0					8.0														
17	HOV	I-10 East - I-10 West (Construction)	70.0										70.0									
17	GPL	McDowell - Arizona Canal (Construction)	220.0											220.0								
17	GPL	McDowell - Arizona Canal (Construction)	220.0												220.0							
17	GPL	McDowell - Arizona Canal (Construction)	150.0													150.0						
17	TI	Dove Valley (Construction), City Advancement	16.6	16.6																		
17	GPL	Anthem Way - New River (Construction)	23.4																		23.4	
17	GPL	SR74, Carefree Highway - Anthem Way (Construction)	30.5		30.5																	
17	HOV	SR74, Carefree Highway - Anthem Way (Construction)	34.5																		34.5	
17	HOV/GPL	101L - Jomax Rd (Construction)	97.0	97.0																		
17	HOV/GPL	Jomax Rd - SR74, Carefree Highway (Construction)	95.0	95.0																		
17	MISC	Peoria Ave - Greenway Rd (Drainage Improvements)	17.0		17.0																	
		I-17 Construction:	1035.3																			
17	FMS	Arizona Canal - 101L (Design)	0.8				0.8															
17	GPL	Arizona Canal - 101L (Design)	2.6					2.6														
17	FMS	101L - Carefree Highway (Design)	0.9				0.9															
17	LNDSCP	101L - SR 74, Carefree Highway (Landscape Design)	0.7		0.7																	
17	HOV	I-10 East - I-10 West (Design)	7.0									7.0										
17	GPL	Anthem Way - New River (Design)	2.6																		2.6	
17	HOV	SR74, Carefree Highway - Anthem Way (Design)	4.4																		4.4	
		I-17 Design:	19.0																			
17	GPL	McDowell - Arizona Canal (Design & R/W)	150.0									150.0										
17	GPL	McDowell - Arizona Canal (Design, R/W & Construction)	220.0										220.0									
		I-17 Multi Phase:	370.0																			
17	HOV/GPL	101L - Happy Valley Rd (R/W)	12.5	7.5	5.0																	
17	HOV/GPL	Happy Valley Rd - Dixileta Dr (R/W)	6.0	6.0																		
17	HOV/GPL	Dixileta Dr - SR74, Carefree Highway (R/W)	1.5	1.5																		
		I-17 R/W:	20.0																			
51	GPL	Shea Blvd - 101L, Pima (Construction)	47.0																		47.0	
		SR51 Construction:	47.0																			
51	FMS	Bell Rd - 101L (Design)	0.2				0.2															
51	GPL	Shea Blvd - 101L, Pima (Design)	4.0																		4.0	
		SR51 Design:	4.2																			
60G	GPL	99th Ave - 83rd Ave, Including New River Bridge (Construction)	10.0	10.0																		

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
60G	GPL	303L, Estrella - 99th Ave (Construction)	35.0		35.0																	
60G	GPL	101L, Agua Fria - McDowell Rd (Construction)	27.2			27.2																
60G	GPL/IMP	303L, Estrella - 99th Ave (Construction)	48.8								48.8											
60G	GPL/IMP	101L, Agua Fria - Van Buren St (Construction)	21.6							21.6												
60G	GPL	101L, Agua Fria - Van Buren St (Construction)	25.0															25.0				
60G		101L, Agua Fria - Van Buren St (Construction)	25.0																	25.0		
60G		101L, Agua Fria - Van Buren St (Construction)	25.0																		25.0	
		US60, Grand Ave Construction:	217.6																			
60G	GPL/IMP	303L, Estrella - 99th Ave (Design)	2.4					2.4														
60G	GPL/IMP	303L, Estrella - 99th Ave (Design)	0.6	0.6																		
60G	GPL	101L, Agua Fria - McDowell Rd (Design)	2.7		2.7																	
60G	GPL/IMP	101L, Agua Fria - Van Buren St (Design)	1.1						1.1													
		US60, Grand Ave Design:	6.8																			
60G	GPL/IMP	303L, Estrella - 99th Ave (R/W)	1.0	1.0																		
		US60, Grand Ave R/W:	1.0																			
60G	GPL/IMP	303L, Estrella - 101L, Agua Fria (Design & R/W)	7.0						7.0													
60G	GPL/IMP	303L, Estrella - 101L, Agua Fria (Design & R/W)	5.0							5.0												
60G	GPL	101L, Agua Fria - Van Buren St (Design & R/W)	22.0																22.0			
		US60, Grand Ave Multi Phase:	34.0																			
60S	GPL	I-10 - 101L, Price (Construction)	19.5	19.5																		
60S	TI	Lindsay Rd Half Interchange (Construction)	4.2					4.2														
60S	TI	Meridian Rd Half Interchange (Construction)	4.2						4.2													
60S	HOV/GPL	Crismon Rd - Meridian Rd (Construction)	28.0											28.0								
		US60, Superstition Construction:	55.9																			
60S	GPL	I-10 - 101L, Price (Design)	1.6	1.6																		
60S	TI	Lindsay Rd Half Interchange (Design)	0.4				0.4															
60S	TI	Meridian Rd Half Intechange (Design)	0.4					0.4														
60S	HOV/GPL	Crismon Rd - Meridian Rd (Design)	3.0									3.0										
		US60, Superstition Design:	5.4																			
74	GPL	US60, Grand - 303L, Estrella (Const Passing Lanes, MP20-22, EB & WB)	3.6	3.6																		
74	GPL	US60, Grand - 303L, Estrella (Const Passing Lanes, MP13 - MP15, EB)	2.0			2.0																
		SR74 Construction:	5.6																			
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0	1.0																		
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0		1.0																	
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0			1.0																
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0				1.0															
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0					1.0														
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0						1.0													
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0							1.0												
74	GPL	US60, Grand - 303L, Estrella (R/W Protection)	1.0								1.0											
74	GPL	I-17 - US60, Grand Ave (R/W)	15.0																			15.0

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
74	GPL	I-17 - US60, Grand Ave (R/W)	5.0														5.0					
74	GPL	I-17 - US60, Grand Ave (R/W)	10.0																10.0			
74	GPL	I-17 - US60, Grand Ave (R/W)	5.0																	5.0		
74	GPL	I-17 - US60, Grand Ave (R/W)	5.0																		5.0	
		SR74 R/W Protection:	48.0																			
85	GPL	MP 130.7 - 137.0 (Construction)	20.9	20.9																		
85	GPL	MP 120.54 - MP 122.99 (Construction)	9.1		9.1																	
85	GPL	MP 149.4 - MP 152.0 (Construction)	16.2		16.2																	
85	GPL	Southern Ave - I-10 (Construction)	29.6		29.6																	
85	GPL	SR85 Improvements (Construction)	40.0			40.0																
		SR85 Construction:	115.8																			
85	GPL	MP 120.54 - MP 122.99 (Design, R/W & Utility), Reprogram	1.2		1.2																	
85	GPL	I-8 to I-10	10.2	10.2																		
85	GPL	I-8 to I-10	11.1		11.1																	
		SR85 Multi Phase:	22.5																			
87	MISC	MP 211.8 - MP 213.0 (Construction)	2.2	2.2																		
87	MISC	New Four Peaks Rd - Dos S Ranch Rd (Construction)	23.0			23.0																
		SR87 Construction:	25.2																			
87	MISC	MP 211.8 - MP 213.0 (Design)	0.2	0.2																		
87	MISC	New Four Peaks Rd - Dos S Ranch Rd (Design)	2.3	2.3																		
		SR87 Design:	2.5																			
88	MISC	Fish Creek Hill (Construction)	1.5	1.5																		
		SR88 Construction:	1.5																			
101A	MISC	I-10 - MC85 (Construction)	3.5			3.5																
101A	TI	Beardsley Rd/Union Hills Dr (Construction)	18.0					18.0														
101A	HOV	I-10 - US60, Grand Ave (Construction)	48.0										48.0									
101A	FMS	US60, Grand Ave - I-17 (Construction)	11.9										11.9									
101A	RAMP	I-10 System Interchange (Construction)	54.0																		54.0	
101A	GPL	I-10 - US60, Grand Ave (Construction)	80.0														80.0					
101A	HOV	US60, Grand Ave - I-17 (Construction)	58.0														58.0					
101A	GPL	US60, Grand Ave - I-17 (Construction)	92.0																		92.0	
101A	TI	Thunderbird Rd (Construction)	3.0	3.0																		
101A	RAMP	I-17 System Interchange (Construction)	65.0																		65.0	
		101L, Agua Fria Construction:	433.4																			
101A	TI	Beardsley Rd/Union Hills Dr (Design)	0.7				0.7															
101A	MISC	I-10 - MC85 (Design)	0.5		0.5																	
101A	HOV	I-10 - US60, Grand Ave (Design)	5.0									5.0										
101A	FMS	US60, Grand Ave - I-17 (Design)	1.3									1.3										
101A	RAMP	I-10 System Interchange (Design)	6.0																	6.0		
101A	GPL	I-10 - US60, Grand Ave (Design)	5.0														5.0					
101A	HOV	US60, Grand Ave - I-17 (Design)	6.0														6.0					

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
101A	GPL	US60, Grand Ave - I-17 (Design)	10.0																10.0			
101A	RAMP	I-17 System Interchange (Design)	7.0																7.0			
		101L, Agua Fria Design:	41.5																			
101PI	HOV	Tatum Blvd - Princess Dr (Construction)	30.0	30.0																		
101PI	HOV	I-17 - Tatum Blvd (Construction)	33.0						33.0													
101PI	GPL	Shea Blvd - 202L, Red Mountain (Construction)	86.0							86.0												
101PI	GPL	I-17 - SR51 (Construction)	54.0																		54.0	
101PI	GPL	SR51 - Shea Blvd (Construction)	77.0															77.0				
		101L, Pima Construction:	280.0																			
101PI	FMS	I-17 - SR51 (Design)	0.8				0.8															
101PI	FMS	SR51 - Princess Dr (Design)	0.7				0.7															
101PI	HOV	I-17 - Tatum Blvd (Design)	2.5					2.5														
101PI	GPL	Shea Blvd - 202L, Red Mountain (Design)	4.7						4.7													
101PI	GPL	I-17 - SR51 (Design)	5.0																5.0			
101PI	GPL	SR51 - Shea Blvd (Design)	8.0														8.0					
		101L, Pima Design:	21.7																			
101PI	FMS	I-17 - Princess Dr (Design & Construction)	6.6	5.5	1.1																	
		101L, Pima Multi Phase:	6.6																			
101PR	HOV	202L, Red Mountain - Baseline Rd (Construction)	22.0	22.0																		
101PR	HOV	Baseline Rd - 202L, Santan (Construction)	35.5	35.5																		
101PR	MISC	Balboa Dr, Multi-use Path, Local (Construction)	2.0					2.0														
101PR	GPL	Baseline Rd - 202L, Santan (Construction)	46.0																		46.0	
		101L, Price Construction:	105.5																			
101PR	GPL	Baseline Rd - 202L, Santan (Design)	5.0														5.0					
		101L, Price Design:	5.0																			
153	NEW	Superior Ave - University Dr (Construction)	16.0		16.0																	
153	NEW	Superior Ave - University Dr (Landscape Construction)	0.6			0.6																
		SR153 Construction:	16.6																			
153	NEW	Superior Ave - University Dr (Landscape Design)	0.1		0.1																	
		SR153 Design:	0.1																			
202RM	HOV	101L - Gilbert (Construction)	29.0		29.0																	
202RM	GPL	Rural Rd - SR101L, EB & WB (Construction)	72.3		72.3																	
202RM	GPL	48th St - Rural Rd, EB (Construction)	46.3			46.3																
202RM	GPL	SR51 - 48th St, EB (Construction)	51.9				51.9															
202RM	GPL	Mill Ave & Washington St (Construction, Bridge Widen)	7.7	7.7																		
202RM	FMS	101L - Gilbert Rd (Construction)	6.0		6.0																	
202RM	GPL	101L - Gilbert Rd (Construction)	46.0						46.0													
202RM	HOV	Gilbert Rd - Higley Rd (Construction)	25.0												25.0							
202RM	TI	Mesa Dr, Ramps Only (Construction)	4.1																		4.1	
202RM	GPL	Gilbert Rd - Higley Rd (Construction)	38.0																		38.0	
202RM	HOV	Higley Rd - US60, Superstition (Construction)	47.0															47.0				

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
202RM	GPL	Higley Rd - US60, Superstition (Construction)	77.0																			77.0
202RM	RAMP	US60, Superstition System TI (Construction)	18.4																			18.4
		202L, Red Mountain Construction:	468.7																			
202RM	HOV	101L - Gilbert (Design)	2.5	2.5																		
202RM	GPL	Rural Rd - SR101L, EB & WB (Design)	5.7	5.7																		
202RM	GPL	48th St - Rural Rd, EB (Design)	3.7		3.7																	
202RM	GPL	SR51 - 48th St, EB (Design)	4.2			4.2																
202RM	GPL	Mill Ave & Washington St (Design, Bridge Widen)	1.2	1.2																		
202RM	FMS	101L - Gilbert Rd (Design)	0.6	0.6																		
202RM	GPL	101L - Gilbert Rd (Design)	2.5						2.5													
202RM	HOV	Gilbert Rd - Higley Rd (Design)	2.0											2.0								
202RM	TI	Mesa Dr, Ramps Only (Design)	0.5																		0.5	
202RM	GPL	Gilbert Rd - Higley Rd (Design)	4.0														4.0					
202RM	HOV	Higley Rd - US60, Superstition (Design)	5.0													5.0						
202RM	GPL	Higley Rd - US60, Superstition (Design)	8.0																		8.0	
202RM	RAMP	US60, Superstition System TI (Design)	2.0																2.0			
		202L, Red Mountain Design:	41.9																			
202SA	HOV/RAMP	Dobson Rd - I-10 (Construction)	42.0						42.0													
202SA	HOV	Val Vista Dr - Dobson Rd (Construction)	54.0							54.0												
202SA	RAMP	202L, Santan / 101L, Price (Construction)	18.4										18.4									
202SA	GPL	Dobson Rd - I-10 (Construction)	39.0																39.0			
202SA	GPL	Val Vista Dr - Dobson Rd (Construction)	54.0																	54.0		
202SA	HOV	US60, Superstition - Val Vista Dr (Construction)	50.0														50.0					
202SA	GPL	US60, Superstition - Val Vista Dr (Construction)	85.0																		85.0	
		202L, Santan Construction:	342.4																			
202SA	FMS	Dobson Rd - I-10 (Design)	0.6				0.6															
202SA	HOV/RAMP	Dobson Rd - I-10 (Design)	4.0				4.0															
202SA	HOV	Val Vista Dr - Dobson Rd (Design)	3.0						3.0													
202SA	RAMP	202L, Santan / 101L, Price (Design)	2.0									2.0										
202SA	GPL	Dobson Rd - I-10 (Design)	4.0														4.0					
202SA	GPL	Val Vista Dr - Dobson Rd (Design)	5.0															5.0				
202SA	HOV	US60, Superstition - Val Vista Dr (Design)	5.0													5.0						
202SA	GPL	US60, Superstition - Val Vista Dr (Design)	8.0																	8.0		
202SA	MISC	Lindsay Rd - Gilbert Rd (Design & Construction)	0.5	0.5																		
		202L, Santan Design:	32.1																			
202SM	NEW	51st Ave - I-10 West (Construction)	60.0			60.0																
202SM	NEW	51st Ave - I-10 West (Construction)	60.0			60.0																
202SM	NEW	51st Ave - I-10 West (Construction)	110.0			110.0																
202SM	NEW	51st Ave - I-10 West (Construction)	190.0				190.0															
202SM	NEW	I-10 East/Santan TI - 51st Ave (Construction)	150.0					150.0														
202SM	NEW	I-10 East/Santan TI - 51st Ave (Construction)	120.0						120.0													

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
202SM	NEW	I-10 East/Santan TI - 51st Ave (Construction)	77.0								77.0											
		202L, South Mountain Construction:	767.0																			
202SM	NEW	I-10 East/Santan TI - 51st Ave (Design & R/W)	20.0		20.0																	
202SM	NEW	I-10 East/Santan TI - 51st Ave (Design & R/W)	40.0			40.0																
		202L, South Mountain Multi Phase:	60.0																			
202SM	NEW	51st Ave - I-10 West (Design)	15.0		15.0																	
202SM	NEW	I-10 East/Santan TI - 51st Ave (Design)	10.0		10.0																	
		202L, South Mountain Design:	25.0																			
202SM	NEW	I-10 East/Santan TI - 51st Ave (R/W)	80.0				80.0															
202SM	NEW	I-10 East/Santan TI - 51st Ave (R/W)	80.0					80.0														
202SM	NEW	51st Ave - I-10 West (R/W)	15.0	7.0	8.0																	
202SM	NEW	51st Ave - I-10 West (R/W)	50.0		30.0	20.0																
		202L, South Mountain R/W:	225.0																			
303	NEW	Happy Valley Rd - Lake Pleasant Rd, Interim Roadway (Construction)	177.0	177.0																		
303	NEW	Lake Pleasant Rd - I-17, Interim Roadway (Construction)	134.0		134.0																	
303	NEW	Happy Valley Rd - I-17 (TI Construction @ I-17)	34.0	34.0																		
303	NEW	I-10/303L TI Phase I, I-10 re-alignment (Construction)	135.0				135.0															
303	TI	Bell Rd (Construction)	11.0	11.0																		
303	TI	Cactus Rd & Waddell Rd (Construction)	9.2	9.2																		
303	NEW	I-10 - US60, Grand Ave (Construction)	129.8				129.8															
303	NEW	I-10 - US60, Grand Ave (Construction)	190.0					190.0														
303	NEW	I-10 - US60, Grand Ave (Construction)	155.0						155.0													
303	NEW	US60, Grand Ave - I-17 (Construction)	110.0						110.0													
303	NEW	US60, Grand Ave - I-17 (Construction)	110.0							110.0												
303	NEW	US60, Grand Ave - I-17 (Construction)	85.0								85.0											
303	NEW	I-10 Reliever/MC85 - I-10 (Construction)	90.0											90.0								
303	NEW	I-10 Reliever/MC85 - I-10 (Construction)	90.0												90.0							
		303L, Estrella Construction:	1460.0																			
303	NEW	I-10 - US60, Grand Ave (Design)	2.7		2.7																	
303	NEW	I-10 - US60, Grand Ave (Design)	4.5			4.5																
303	NEW	US60, Grand Avenue - I-17 (Design)	20.0					20.0														
		303L, Estrella Design:	27.2																			
303	NEW	Lake Pleasant Rd - I-17 (R/W)	40.0	40.0																		
303	NEW	I-10 - US60, Grand Ave (R/W)	5.5		5.5																	
303	NEW	I-10 - US60, Grand Ave (R/W)	5.5			5.5																
303	NEW	I-10 - US60, Grand Ave (R/W)	10.0	10.0																		
303	NEW	US60, Grand Ave - I-17 (R/W)	70.0					70.0														
		303L, Estrella R/W:	131.0																			
303	NEW	I-10 Reliever/MC85 - I-10 (Design & R/W)	40.0									40.0										
		303L, Estrella Multi Phase:	40.0																			
303	NEW	Riggs Rd - I-10 Reliever (R/W)	25.0																		25.0	

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Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	
303	NEW	Riggs Rd - I-10 Reliever (R/W)	25.0																			25.0	
		303L, Estrella R/W Protection:	50.0																				
801	NEW	SR85 - 303L, Estrella (Construction)	60.0																			60.0	
801	NEW	303L, Estrella - 202L, South Mountain (Construction)	125.0																125.0				
801	NEW	303L, Estrella - 202L, South Mountain (Construction)	125.0																	125.0			
801	NEW	303L, Estrella - 202L, South Mountain (Construction)	154.0																			154.0	
		SR 801 Construction:	464.0																				
801	NEW	SR85 - 303L, Estrella (Design & R/W)	21.0												21.0								
801	NEW	303L, Estrella - 202L, South Mountain (Design & R/W)	150.0														150.0						
801	NEW	303L, Estrella - 202L, South Mountain (Design & R/W)	100.0															100.0					
		SR 801 Multi Phase:	271.0																				
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	3.0	3.0																			
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	3.0		3.0																		
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	3.0			3.0																	
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	5.0				5.0																
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	5.0					5.0															
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	10.0						10.0														
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	20.0							20.0													
801	NEW	303L, Estrella - 202L, South Mountain (R/W Protection)	20.0								20.0												
		SR 801 R/W:	69.0																				
802	NEW	202L, Santan - Ellsworth Rd (Construction)	113.0									113.0											
802	NEW	Ellsworth Rd - Meridian Rd (Construction)	90.0													90.0							
		SR 802 Construction:	203.0																				
802	NEW	Ellsworth Rd - Meridian Rd (Design)	10.0								10.0												
		SR 802 Design:	10.0																				
802	NEW	202L, Santan - Ellsworth Rd (Design & R/W)	20.0							20.0													
802	NEW	202L, Santan - Ellsworth Rd (Design & R/W)	20.0								20.0												
802	NEW	Ellsworth Rd - Meridian Rd (Design & R/W)	70.0											70.0									
		SR 802 Multi Phase:	110.0																				
802	NEW	202L, Santan - Meridian Rd (R/W Protection)	2.0	2.0																			
802	NEW	202L, Santan - Meridian Rd (R/W Protection)	2.0		2.0																		
802	NEW	202L, Santan - Meridian Rd (R/W Protection)	2.0			2.0																	
802	NEW	202L, Santan - Meridian Rd (R/W Protection)	2.0				2.0																
802	NEW	202L, Santan - Meridian Rd (R/W Protection)	2.0					2.0															
		SR 802 R/W:	10.0																				
SW	NOISE	Asphalt Rubber Noise Mitigation	14.5	14.5																			
SW	NOISE	Noise Mitigation Projects	1.0		1.0																		
SW	NOISE	Noise Mitigation Projects	1.0			1.0																	
SW	NOISE	Noise Mitigation Projects	1.0				1.0																
SW	NOISE	Noise Mitigation Projects	1.5					1.5															
SW	NOISE	Noise Mitigation Projects	1.0						1.0														

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
SW	NOISE	Noise Mitigation Projects	1.0							1.0												
SW	NOISE	Noise Mitigation Projects	1.0								1.0											
SW	NOISE	Noise Mitigation Projects	1.0									1.0										
SW	NOISE	Noise Mitigation Projects	1.0										1.0									
SW	NOISE	Noise Mitigation Projects	1.0											1.0								
SW	NOISE	Noise Mitigation Projects	1.0												1.0							
SW	NOISE	Noise Mitigation Projects	1.4													1.4						
SW	NOISE	Noise Mitigation Projects	1.5														1.5					
SW	NOISE	Noise Mitigation Projects	1.5															1.5				
SW	NOISE	Noise Mitigation Projects	1.5																1.5			
SW	NOISE	Noise Mitigation Projects	1.5																	1.5		
SW	NOISE	Noise Mitigation Projects	1.5																		1.5	
		Noise Mitigation:	34.9																			
SW	MISC	Park & Ride Lot	3.0	3.0																		
SW	TI	TI Improvements																				
SW	TI	TI Improvements	3.0		3.0																	
SW	TI	TI Improvements	3.0			3.0																
SW	TI	TI Improvements	3.0				3.0															
SW	TI	TI Improvements	3.0					3.0														
		Systemwide Construction:	15.0																			
SW	MAINT	Maintenance (Landscape, litter & sweep)	11.6	11.6																		
SW	MAINT	Maintenance (Landscape, litter & sweep)	11.0		11.0																	
SW	MAINT	Maintenance (Landscape, litter & sweep)	12.0			12.0																
SW	MAINT	Maintenance (Landscape, litter & sweep)	13.0				13.0															
SW	MAINT	Maintenance (Landscape, litter & sweep)	13.0					13.0														
SW	MAINT	Maintenance (Landscape, litter & sweep)	14.0						14.0													
SW	MAINT	Maintenance (Landscape, litter & sweep)	14.0							14.0												
SW	MAINT	Maintenance (Landscape, litter & sweep)	15.0								15.0											
SW	MAINT	Maintenance (Landscape, litter & sweep)	15.0									15.0										
SW	MAINT	Maintenance (Landscape, litter & sweep)	15.0										15.0									
SW	MAINT	Maintenance (Landscape, litter & sweep)	16.0											16.0								
SW	MAINT	Maintenance (Landscape, litter & sweep)	16.0												16.0							
SW	MAINT	Maintenance (Landscape, litter & sweep)	16.0													16.0						
SW	MAINT	Maintenance (Landscape, litter & sweep)	16.0														16.0					
SW	MAINT	Maintenance (Landscape, litter & sweep)	17.0															17.0				
SW	MAINT	Maintenance (Landscape, litter & sweep)	17.5																17.5			
SW	MAINT	Maintenance (Landscape, litter & sweep)	17.5																	17.5		
SW	MAINT	Maintenance (Landscape, litter & sweep)	17.4																		17.4	
		Systemwide Maintenance:	267.0																			
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	22.2	22.2																		
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	18.0		18.0																	

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	18.0			18.0																
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	13.0				13.0															
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	13.0					13.0														
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	12.0						12.0													
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	12.0							12.0												
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	12.0								12.0											
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	12.0									12.0										
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	12.0										12.0									
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	11.0											11.0								
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	11.0												11.0							
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	10.0													10.0						
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	6.0														6.0					
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	4.0															4.0				
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	3.0																3.0			
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	2.0																	2.0		
SW	ADMIN	Preliminary Engineering (Management Consultants, 30% Plans Design)	2.0																		2.0	
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2	1.2																		
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2		1.2																	
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2			1.2																
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2				1.2															
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2					1.2														
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2						1.2													
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2							1.2												
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2								1.2											
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2									1.2										
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2										1.2									
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2											1.2								
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2												1.2							
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2													1.2						
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2														1.2					
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2															1.2				
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2																	1.2		
SW	ADMIN	Preliminary Engineering (ADOT Staff)	1.2																		1.2	
SW	ADMIN	Design Change Orders	3.0	3.0																		
SW	ADMIN	Design Change Orders	3.0		3.0																	
SW	ADMIN	Design Change Orders	3.0			3.0																
SW	ADMIN	Design Change Orders	3.0				3.0															
SW	ADMIN	Design Change Orders	3.0					3.0														
SW	ADMIN	Design Change Orders	3.0						3.0													
SW	ADMIN	Design Change Orders	3.0							3.0												
SW	ADMIN	Design Change Orders	3.0								3.0											

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
SW	ADMIN	Design Change Orders	3.0								3.0											
SW	ADMIN	Design Change Orders	3.0									3.0										
SW	ADMIN	Design Change Orders	3.0										3.0									
SW	ADMIN	Design Change Orders	3.0											3.0								
SW	ADMIN	Design Change Orders	3.0												3.0							
SW	ADMIN	Design Change Orders	3.0													3.0						
SW	ADMIN	Design Change Orders	3.0														3.0					
SW	ADMIN	Design Change Orders	3.0															3.0				
SW	ADMIN	Design Change Orders	3.0																3.0			
SW	ADMIN	Design Change Orders	3.0																	3.0		
SW	ADMIN	Design Change Orders	3.0																		3.0	
SW	ADMIN	Risk Management Indemnification	2.5	2.5																		
SW	ADMIN	Risk Management Indemnification	2.5		2.5																	
SW	ADMIN	Risk Management Indemnification	2.5			2.5																
SW	ADMIN	Risk Management Indemnification	2.5				2.5															
SW	ADMIN	Risk Management Indemnification	2.5					2.5														
SW	ADMIN	Risk Management Indemnification	2.5						2.5													
SW	ADMIN	Risk Management Indemnification	2.5							2.5												
SW	ADMIN	Risk Management Indemnification	2.5								2.5											
SW	ADMIN	Risk Management Indemnification	2.5									2.5										
SW	ADMIN	Risk Management Indemnification	2.5										2.5									
SW	ADMIN	Risk Management Indemnification	2.5											2.5								
SW	ADMIN	Risk Management Indemnification	2.5												2.5							
SW	ADMIN	Risk Management Indemnification	2.5													2.5						
SW	ADMIN	Risk Management Indemnification	2.5														2.5					
SW	ADMIN	Risk Management Indemnification	2.5															2.5				
SW	ADMIN	Risk Management Indemnification	2.5																2.5			
SW	ADMIN	Risk Management Indemnification	2.5																	2.5		
SW	ADMIN	Risk Management Indemnification	2.5																		2.5	
SW	MISC	Freeway Service Patrols	0.6	0.6																		
SW	MISC	Freeway Service Patrols	0.7		0.7																	
SW	MISC	Freeway Service Patrols	0.7			0.7																
SW	MISC	Freeway Service Patrols	0.9				0.9															
SW	MISC	Freeway Service Patrols	1.0					1.0														
SW	ADMIN	Bottleneck Project Scoping	0.5	0.5																		
		Systemwide Design:	318.1																			
SW	FMS	FMS Preservation	0.7	0.7																		
SW	FMS	FMS Preservation	0.7		0.7																	
SW	FMS	FMS Preservation	0.7			0.7																
SW	FMS	FMS Preservation	0.7				0.7															
SW	FMS	FMS Preservation	0.7					0.7														

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
SW	FMS	FMS Rehabilitation	0.4		0.4																	
SW	FMS	FMS Rehabilitation	3.6			3.6																
SW	FMS	Freeway Management System Projects	1.3				1.3															
SW	FMS	Freeway Management System Projects	0.8					0.8														
SW	FMS	Freeway Management System Projects	7.0						7.0													
SW	FMS	Freeway Management System Projects	7.0							7.0												
SW	FMS	Freeway Management System Projects	7.0								7.0											
SW	FMS	Freeway Management System Projects	10.0									10.0										
SW	FMS	Freeway Management System Projects	10.0										10.0									
SW	FMS	Freeway Management System Projects	5.0											5.0								
SW	FMS	Freeway Management System Projects	5.0												5.0							
SW	FMS	Freeway Management System Projects	5.0													5.0						
SW	FMS	Freeway Management System Projects	10.0														10.0					
SW	FMS	Freeway Management System Projects	5.0															5.0				
SW	FMS	Freeway Management System Projects	10.0																10.0			
SW	FMS	Freeway Management System Projects	5.0																	5.0		
SW	FMS	Freeway Management System Projects	14.0																			14.0
		Systemwide Multi Phase:	109.7																			
SW	R/W	R/W Advance Acquisition	5.0	5.0																		
SW	R/W	R/W Advance Acquisition	5.0		5.0																	
SW	R/W	R/W Advance Acquisition	5.0			5.0																
SW	R/W	R/W Advance Acquisition	5.0				5.0															
SW	R/W	R/W Advance Acquisition	5.0					5.0														
SW	R/W	R/W Advance Acquisition	5.0						5.0													
SW	R/W	R/W Advance Acquisition	5.0							5.0												
SW	R/W	R/W Advance Acquisition	5.0								5.0											
SW	R/W	R/W Advance Acquisition	5.0									5.0										
SW	R/W	R/W Advance Acquisition	5.0										5.0									
SW	R/W	R/W Advance Acquisition	5.0											5.0								
SW	R/W	R/W Advance Acquisition	2.0															2.0				
SW	R/W	R/W Advance Acquisition	2.0																2.0			
SW	R/W	R/W Advance Acquisition	1.0																	1.0		
SW	R/W	R/W Plans & Titles	2.5	2.5																		
SW	R/W	R/W Plans & Titles	2.5		2.5																	
SW	R/W	R/W Plans & Titles	2.5			2.5																
SW	R/W	R/W Plans & Titles	2.5				2.5															
SW	R/W	R/W Plans & Titles	2.5					2.5														
SW	R/W	R/W Plans & Titles	2.5						2.5													
SW	R/W	R/W Plans & Titles	2.5							2.5												
SW	R/W	R/W Plans & Titles	2.5								2.5											

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.		PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
SW	R/W	R/W Plans & Titles	2.5								2.5											
SW	R/W	R/W Plans & Titles	2.5									2.5										
SW	R/W	R/W Plans & Titles	2.5										2.5									
SW	R/W	R/W Plans & Titles	2.5											2.5								
SW	R/W	R/W Plans & Titles	2.5												2.5							
SW	R/W	R/W Plans & Titles	2.5													2.5						
SW	R/W	R/W Plans & Titles	2.5														2.5					
SW	R/W	R/W Plans & Titles	2.5															2.5				
SW	R/W	R/W Plans & Titles	2.5																2.5			
SW	R/W	R/W Plans & Titles	1.0																		1.0	
SW	R/W	R/W Plans & Titles	1.0																			1.0
SW	R/W	R/W Property Management	0.5	0.5																		
SW	R/W	R/W Property Management	0.5		0.5																	
SW	R/W	R/W Property Management	0.5			0.5																
SW	R/W	R/W Property Management	0.5				0.5															
SW	R/W	R/W Property Management	0.5					0.5														
SW	R/W	R/W Property Management	0.5						0.5													
SW	R/W	R/W Property Management	0.5							0.5												
SW	R/W	R/W Property Management	0.5								0.5											
SW	R/W	R/W Property Management	0.5									0.5										
SW	R/W	R/W Property Management	0.5										0.5									
SW	R/W	R/W Property Management	0.5											0.5								
SW	R/W	R/W Property Management	0.5												0.5							
SW	R/W	R/W Property Management	0.5													0.5						
SW	R/W	R/W Property Management	0.5														0.5					
SW	R/W	R/W Property Management	0.5															0.5				
SW	R/W	R/W Property Management	0.5																0.5			
SW	R/W	R/W Property Management	0.5																	0.5		
SW	R/W	R/W Property Management	0.5																		0.5	
		Systemwide R/W:	121.0																			

893.6 704.6 790.9 792.0 661.3 628.1 529.3 365.5 379.5 449.0 429.7 382.7 308.1 288.5 476.9 493.6 557.1 550.6 --

\$9,681.0 PROGRAM TOTAL

Freeway/Highway Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

Rte.	PROJECT DESCRIPTION	Total	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26
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Loan Repayment Schedule for Local Advanced Projects:

I-10, Sarival Rd - Dysart Rd (Design): \$4,620,000 in FY 2009
 I-10, Sarival Rd - Dysart Rd (Construction): \$84,000,000 in FY 2011
 I-10, Dysart Rd - 101L, Agua Fria (Design): \$2,805,000 in FY 2013
 I-10, Dysart Rd - 101L, Agua Fria (Construction): \$51,000,000 in FY 2014

I-17, Dixileta Dr (Design): \$1,000,000 in FY 2011
 I-17, Dixileta Dr (Construction): \$9,545,000 in FY 2012
 I-17, Dove Valley Rd (Design): \$1,800,000 in FY 2021
 I-17, Dove Valley Rd (Construction): \$16,600,000 in FY 2022
 US60 (Grand Avenue), 101L , Agua Fria - McDowell Rd (Design): \$240,000 in FY 2009, City of Glendale
 US60 (Grand Avenue), 101L , Agua Fria - McDowell Rd (Construction): \$2,665,000 in FY 2010, City of Glendale

Note: RTP will share portion of the interest cost.

Loan Government Projects within ADOT Corridor:

101L (Pima), Scottsdale Rd - Hayden Rd, City of Scottsdale: \$4,244,000 in FY 2007
 101L (Pima), Hayden Rd - Princess Dr, City of Scottsdale: \$4,341,000 in FY 2008

Appendix B
Arterial Street Life Cycle Program

Arterial Life Cycle Program

FY 2008 - FY 2026 (In Millions - 2007\$)

Arterial Life Cycle Program KEY

FY08 - FY26 funds are expressed in 2007\$. The jurisdiction listed in the first column is the Lead Agency.

Remn. Reg. Reimb. 2007\$ - The Project's remaining regional reimbursement in 2007\$

RARF - Regional Area Road Fund

STP-MAG - Surface Transportation Program funds

CMAQ - Congestion Mitigation and Air Quality

FY - Fiscal Year (July 1 - June 30) - RARF, Fiscal Year (Oct 1 - Sept 30) - STP & CMAQ

DES - project design

ROW - project right of way acquisition

CONST - project construction

A - project has been advanced from its original phase in the RTP

D - project has been deferred from its original phase in the RTP

E - project has either been advanced or deferred and the money has been exchanged with another project that has been either advanced or deferred

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	
Chandler																										
Arizona Ave/Chandler Blvd: Intersection Improvement	All-ARZ-30-03	3.582				A																				
			RARF	DES	2004	A							0.189													
			RARF	ROW	2005	A							1.013													
			RARF	CONST	2006	A							2.379													
Arizona Ave/Elliott: Intersection Improvement	All-ARZ-10-03	3.582				A																				
			RARF	DES	2003	A																				
			RARF	ROW	2006	A																				
			RARF	CONST	2006	A																				
Arizona Ave/Ray Rd: Intersection Improvement	All-ARZ-20-03	0.000				A																				
			RARF	DES	2005	A																				
			RARF	ROW	2006	A																				
			RARF	CONST	2007	A																				
Arizona Ave: Ocotillo to Hunt Hwy	ACI-ARZ-10-03	5.894																								
			RARF	DES	2011						0.362															
			RARF	ROW	2012							1.885														
			RARF	CONST	2013							3.648														
Chandler Blvd/Alma School: Intersection Improvements	All-CHN-10-03	3.582																								
			RARF	DES	2008		0.342																			
			RARF	ROW	2009			0.919																		
			RARF	CONST	2010				2.323																	
Chandler Blvd/Dobson: Intersection Improvements	All-CHN-20-03	3.565				A																				
			RARF	DES	2005	A	0.041																			
			RARF	ROW	2007		1.306																			
			RARF	CONST	2008		2.217																			
Chandler Blvd/Kyrene: Intersection Improvements	All-CHN-30-03	3.582																								
			RARF	DES	2013							0.173														
			RARF	ROW	2014								0.542													
			RARF	CONST	2015									2.868												
Gilbert Rd: SR-202L to Hunt Hwy	ACI-GIL-10-03	19.877				A																				
Gilbert Rd: SR-202L to Queen Creek Rd	ACI-GIL-10-03-A		RARF	DES	2007	A																				0.345
Gilbert Rd: SR-202L to Queen Creek Rd			RARF	ROW	2007	A																				1.257

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Gilbert Rd: SR-202L to Queen Creek Rd			RARF	CONST	2008	A														4.931					
Gilbert Rd: Queen Creek Rd to Chandler Heights Rd	ACI-GIL-10-03-B		RARF	DES	2009	A														0.746					
Gilbert Rd: Queen Creek Rd to Chandler Heights Rd			RARF	ROW	2010	A														1.758					
Gilbert Rd: Queen Creek Rd to Chandler Heights Rd			RARF	CONST	2011	A														5.154					
Gilbert Rd: Chandler Heights Rd to Hunt Hwy	ACI-GIL-10-03-C		RARF	DES	2009	A														0.361					
Gilbert Rd: Chandler Heights Rd to Hunt Hwy			RARF	ROW	2010	A														1.021					
Gilbert Rd: Chandler Heights Rd to Hunt Hwy			RARF	CONST	2011	A														4.304					
Kyrene Rd/Ray Rd: Intersection Improvement	All-KYR-10-03	3.582				A																			
			RARF	DES	2012	A																			
			RARF	ROW	2013	A																			0.173
			RARF	CONST	2014	A																			0.542
																									2.868
Price Rd: SR-202L to I-10	ACI-PRC-10-03	53.159																							
Price Rd (Extension):SR-202L to I-10			STP-MAG		2016										10.632										
Price Rd (Extension):SR-202L to I-10			STP-MAG		2017											10.632									
Price Rd (Extension):SR-202L to I-10			STP-MAG		2018												10.632								
Price Rd (Extension):SR-202L to I-10			STP-MAG		2018													10.633							
Price Rd (Extension):SR-202L to I-10			STP-MAG		2019														10.633						
Ray/Alma School: Intersection Improvements	All-RAY-10-03	3.582																							
			RARF	DES	2007		0.369																		
			RARF	ROW	2008		1.775																		
			RARF	CONST	2009			1.439																	
Ray/Dobson: Intersection Improvements	All-RAY-20-03	3.582				A																			
			RARF	DES	2010	A																			
			RARF	ROW	2011	A																			
			RARF	CONST	2012																				
Ray/McClintock: Intersection Improvements	All-RAY-40-03	3.582				A																			
			RARF	DES	2009	A																			
			RARF	ROW	2010	A																			
			RARF	CONST	2011	A																			
Ray/Rural: Intersection Improvements	All-RAY-50-03	3.582																							
			RARF	DES	2011																				
			RARF	ROW	2012																				
			RARF	CONST	2013																				
CHANDLER/GILBERT																									
Queen Creek Rd: Arizona Ave to Higley Rd	ACI-QNC-10-03	35.940				A																			
CHAND. Queen Creek Rd: Arizona Ave to McQueen Rd	ACI-QNC-10-03-A		RARF	DES, ROW	2005	A																			
Queen Creek Rd: Arizona Ave to McQueen Rd			RARF	CONST	2008	A																			
CHAND. Queen Creek Rd: McQueen Rd to Lindsay Rd	ACI-QNC-10-03-B		RARF	DES	2008	A																			
Queen Creek Rd: McQueen Rd to Lindsay Rd			RARF	ROW	2009	A																			
Queen Creek Rd: McQueen Rd to Lindsay Rd			RARF	CONST	2010	A																			
GILBERT Queen Creek Rd: Lindsay Rd to Val Vista	ACI-QNC-10-03-C		RARF	DES	2009	A																			

RTP Project	RTP Code	Remn. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	
GILBERT Queen Creek Rd: Lindsay Rd to Val Vista			RARF	ROW	2010	A					1.267															
GILBERT Queen Creek Rd: Lindsay Rd to Val Vista			RARF	CONST	2011							3.258														
GILBERT Queen Creek Rd: Val Vista to Greenfield	ACI-QNC-10-03-D		RARF	DES	2009	A				0.377																
GILBERT Queen Creek Rd: Val Vista to Greenfield			RARF	ROW	2010	A					2.695															
GILBERT Queen Creek Rd: Val Vista to Greenfield			RARF	CONST	2011							3.111														
GILBERT Queen Creek Rd: Greenfield to Higley	ACI-QNC-10-03-E		RARF	DES	2009	A				0.567																
GILBERT Queen Creek Rd: Greenfield to Higley			RARF	ROW	2010	A					4.145															
GILBERT Queen Creek Rd: Greenfield to Higley			RARF	CONST	2011							4.562														
FOUNTAIN HILLS																										
Shea Blvd: Palisades Blvd to Saguaro Blvd	ACI-SHA-10-03	5.778																								
			RARF	DES	2008		0.809																			
			RARF	ROW	2009			1.445																		
			RARF	CONST	2010				3.525																	
GILBERT																										
Elliot/Cooper: Intersection Improvements	AII-ELT-30-03	3.929				E																				
			RARF	DES	2011	E														0.223						
			RARF	ROW	2012	E															0.786					
			RARF	CONST	2013	E																2.920				
Elliot/Gilbert: Intersection Improvements	AII-ELT-40-03	3.582																								
			RARF	DES	2016										0.238											
			RARF	ROW	2017											3.345										
			RARF	CONST	2018																					
Elliot/Greenfield: Intersection Improvements	AII-ELT-10-03	3.582																								
			RARF	DES	2011	A															0.239					
			RARF	ROW	2012	A																1.646				
			RARF	CONST	2013	A																	1.697			
Elliot/Higley: Intersection Improvements	AII-ELT-20-03	3.582																								
			RARF	DES	2016	A															0.152					
			RARF	ROW	2017	A																0.611				
			RARF	CONST	2018	A																	2.587			
			RARF	SAVINGS	2018																		0.233			
Elliot/Val Vista: Intersection Improvements	AII-ELT-50-03	3.582																								
			RARF	DES	2011	A															0.207					
			RARF	ROW	2012	A																0.722				
			RARF	CONST	2013	A																	2.654			
Germann Rd: Gilbert to Power Rd	ACI-GER-20-03	21.033																								
Germann Rd: Gilbert to Val Vista	ACI-GER-20-03-A		RARF	DES	2009	E															0.756					
Germann Rd: Gilbert to Val Vista			RARF	ROW	2010	E																1.158				
Germann Rd: Gilbert to Val Vista			RARF	CONST	2011	E																	4.395			
Germann Rd: Val Vista to Higley	ACI-GER-20-03-B		RARF	DES	2009	E															1.086					
Germann Rd: Val Vista to Higley			RARF	ROW	2010	E																2.353				
Germann Rd: Val Vista to Higley			RARF	CONST	2011	E																	11.284			
Greenfield Rd: Elliot Rd to Ray Rd	ACI-GRN-10-03	3.582																								
			RARF	DES	2011	E				0.398																
			RARF	ROW	2012	E					1.520															

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Guadalupe/Cooper: Intersection Improvements	All-GUD-30-03	3.582	RARF	CONST	2013	E						1.664													
			RARF	DES	2021	E														0.251					
			RARF	ROW	2022	E															1.520				
			RARF	CONST	2023	E																1.811			
Guadalupe/Gilbert: Intersection Improvements	All-GUD-40-03	3.582																							
			RARF	DES	2011					0.253															
			RARF	ROW	2012						1.234														
			RARF	CONST	2013							2.095													
Guadalupe/Greenfield: Intersection Improvements	All-GUD-10-03	3.582																							
			RARF	DES	2021																0.235				
			RARF	ROW	2022																	0.517			
			RARF	CONST	2023																		2.792		
			RARF	SAVINGS																			0.038		
Guadalupe/Power: Intersection Improvements	All-GUD-20-03	3.582																							
			RARF	DES	2008	E																			
			RARF	ROW	2009	E																			
			RARF	CONST	2010	E				3.582															
Guadalupe/Val Vista: Intersection Improvements	All-GUD-50-03	3.582																							
			RARF	DES	2010	A									0.228										
			RARF	ROW	2011	A										0.838									
			RARF	CONST	2012	A											2.517								
Power Rd: Galveston to Chandler Heights	ACI-PWR-10-03	19.646																							
Power Rd at Pecos: Intersection Improvement	ACI-PWR-10-03-A		RARF	DES	2008	E	0.574																		
Power Rd at Pecos: Intersection Improvement			RARF	ROW	2008	E	0.879																		
Power Rd at Pecos: Intersection Improvement			RARF	CONST	2008	E	3.685																		
Power: Galveston to Pecos	ACI-PWR-10-03-B		RARF	DES	2009	E		0.982																	
Power: Galveston to Pecos			RARF	ROW	2009	E		2.534																	
Power: Galveston to Pecos			RARF	CONST	2009/2010	E		0.400	10.591																
Power: Pecos to Chandler Heights	ACI-PWR-10-03-C		RARF	DES	2022	D																			
Power: Pecos to Chandler Heights			RARF	ROW	2023	D																			
Power: Pecos to Chandler Heights			RARF	CONST	2024	D																			
Ray Rd: Val Vista Rd to Power Rd	ACI-RAY-10-03	15.832																							
			RARF	DES	2011	A																1.148			
			RARF	ROW	2012	A																	1.339		
			RARF	CONST	2013	A																		12.778	
			RARF	SAVINGS	2025																			0.568	
Ray/Gilbert: Intersection Improvements	All-RAY-30-03	3.582																							
			RARF	DES	2011	A									0.234										
			RARF	ROW	2012	A										1.086									
			RARF	CONST	2013	A											2.263								
Val Vista Rd: Warner Rd to Pecos Rd	ACI-VAL-20-03	6.934																							
			RARF	DES	2004	E																			
			RARF	ROW	2005	E																			
			RARF	CONST	2005/2006	E	3.582						3.351												
Warner/Cooper: Intersection Improvements	All-WNR-10-03	3.582																							
			RARF	DES	2008		0.478																		
			RARF	ROW	2008		1.165																		
			RARF	CONST	2008		1.940																		

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	
Warner/Greenfield: Intersection Improvements	AI-WRN-20-03	3.582																								
			RARF	DES	2012						0.316															
			RARF	ROW	2013							0.973														
			RARF	CONST	2014								2.293													
MARICOPA COUNTY																										
Dobson Rd: Bridge over Salt River	ACI-DOB-10-03	17.681																								
				DCR	2007																					
				EA	2008																					
			RARF	DES	2009																					
			RARF	ROW	2010						12.090															
			RARF	CONST	2011						5.592															
El Mirage Rd: Bell Rd to Jomax Rd	ACI-ELM-10-03	18.606																								
El Mirage Rd: Bell Rd to Beardsley	ACI-ELM-10-03-A		RARF	DES	2006-09										0.523											
El Mirage Rd: Bell Rd to Beardsley			RARF	ROW	2003-2007										2.273											
El Mirage Rd: Bell Rd to Beardsley			RARF	CONST	2010/11											6.432	6.434									
El Mirage Rd: Beardsley to L303	ACI-ELM-10-03-B		RARF	DES	2007										0.682											
El Mirage Rd: Beardsley to L303			RARF	ROW	2003-2006										1.304											
El Mirage Rd: Beardsley to L303			RARF	CONST	2011/12										0.959											
El Mirage Rd:L303 to Jomax	ACI-ELM-10-03-C		RARF	DES	2013																					
El Mirage Rd:L303 to Jomax			RARF	ROW	2014/15																					
El Mirage Rd:L303 to Jomax			RARF	CONST	2015/16																					
El Mirage Rd: Thunderbird Rd to Bell	ACI-ELM-20-03	20.339																								
			RARF	STUDY	2006																					
			RARF	PRE-DES	2008-2009		1.088	0.391																		
			RARF	DES	2010-2012				1.781																	
			RARF	ROW	2009-2012			1.158	0.896																	
			RARF	CONST	2013-2015							8.690	4.987	1.349												
El Mirage Rd: Thunderbird Rd to Northern Ave	ACI-ELM-30-03	15.948																								
				STUDY	2006																					
			RARF	DES	2016											2.997										
			RARF	ROW	2016											2.896										
			RARF	CONST	2017-2018												7.245	2.810								
Gilbert Rd: Bridge over Salt River	ACI-GIL-20-03	13.290																								
				DCR	2007	A																				
				EA	2008	A																				
			STP-MAG	DES	2009	A									1.613											
			STP-MAG	ROW	2010	A									1.952											
			STP-MAG	CONST	2011	A																				
			RARF	CONST	2012	A									9.262											0.000
Jomax Rd: SR-303L to Sun Valley Parkway	ACI-JMX-10-03	19.646																								
			RARF	ROW	2017											9.823										
			RARF	ROW	2018												9.823									
McKellips Rd: Bridge over Salt River	ACI-MCK-30-03	13.290																								
				DCR	2007	A																				
				EA	2008	A																				
			RARF	ROW	2010	A									2.543											

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
			RARF	CONST	2011	A								10.746											
McKellips Rd: SR-101L to SRP-MIC/Alma School Rd	ACI-MCK-40-03	37.443																							
			STP-MAG	DES	2009	A						0.498													
			STP-MAG	ROW	2010	A							0.759												
			STP-MAG	CONST	2011	A								6.918											
			RARF	SAVINGS									14.634	14.634											
Northern Pkwy: Grand Ave to SR-303L	ACI-NOR-30-03	57.782																							
Northern Pkwy (Phase A1A): US-60 (Grand Ave.) to SR-303L			STP-MAG	PRE-DES/DES	2007-2008		3.582																		
Northern Pkwy (Phase A1A): Dysart Rd to SR-303L			STP-MAG	ROW	2008		16.084																		
Northern Pkwy (Phase A1A): Dysart Rd to SR-303L			STP-MAG	Interim CONST	2009			13.114																	
Northern Pkwy (Phase A1A): Dysart Rd to SR-303L			STP-MAG	Interim CONST	2010				6.216																
Northern Pkwy (Phase A2): US 60 (Grand Ave) to Dysart Rd			STP-MAG	Protect ROW & CONST	2010				6.877																
Northern Pkwy (Phase A2): US 60 (Grand Ave) to Dysart Rd			STP-MAG	Protect ROW & CONST	2011					11.909															
Northern Pkwy: US-60 (Grand Ave) to SR-101L	ACI-NOR-10-03	80.895																							
			STP-MAG	Reimb.	2016										11.524										
			STP-MAG	Reimb.	2017											20.889									
			STP-MAG	Reimb.	2018												19.408								
			STP-MAG	Reimb.	2019													16.749							
			STP-MAG	Reimb.	2020														12.325						
Northern Pkwy: SR-101L to SR-303L	ACI-NOR-20-03	82.397																							
			STP-MAG	Reimb.	2021																				
			STP-MAG	Reimb.	2022																				
			STP-MAG	Reimb.	2023																				
			STP-MAG	Reimb.	2024																				
			STP-MAG	Reimb.	2025																				18.306
MESA/M.C.																									
Power Rd: Baseline Rd to Galveston	ACI-PWR-20-03	17.219																							
MESA-Power Rd: East Maricopa Floodway (EMF) to Galveston	ACI-PWR-20-03-A		RARF	PRE DES	2008	E	0.374																		
MESA-Power Rd: East Maricopa Floodway (EMF) to Galveston			RARF	DES	2008	E	0.624																		
MESA-Power Rd: East Maricopa Floodway (EMF) to Galveston			RARF	ROW	2008	E	1.502																		
MESA-Power Rd: East Maricopa Floodway (EMF) to Galveston			RARF	CONST	2009	E		7.235																	
M.C.-Power Rd: Baseline Rd to East Maricopa Floodway (EMF)	ACI-PWR-20-03-B		RARF	DES	2007	E	0.242																		

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
M.C.-Power Rd: Baseline Rd to East Maricopa Floodway (EMF)			RARF	ROW	2007	E	2.534																		
M.C.-Power Rd: Baseline Rd to East Maricopa Floodway (EMF)			RARF	CONST	2008 & 2009	E	4.709																		
MESA																									
Baseline Rd: Power Rd to Meridian Rd	ACI-BSL-10-03	16.988				A																			
Baseline Rd: Power Rd to Ellsworth Rd	ACI-BSL-10-03-A		RARF	DES	2014	A																		0.868	
Baseline Rd: Power Rd to Ellsworth Rd			RARF	ROW	2015	A																		2.603	
Baseline Rd: Power Rd to Ellsworth Rd			RARF	CONST	2016	A																		4.841	
Baseline Rd: Ellsworth Rd to Meridian Rd	ACI-BSL-10-03-B		RARF	DES	2017	A																		0.868	
Baseline Rd: Ellsworth Rd to Meridian Rd			RARF	ROW	2018	A																		2.603	
Baseline Rd: Ellsworth Rd to Meridian Rd			RARF	CONST	2019	A																		5.206	
Broadway Rd: Dobson Rd to Country Club Dr	ACI-BDW-10-03	7.049																							
			RARF	PRE-DES	2008		0.195																		
			RARF	DES	2008		1.258																		
			RARF	ROW	2009			1.767																	
			RARF	CONST	2010				3.829																
Country Club/University: Intersection Improvements	All-CCB-10-03	2.658				A																			
			RARF	PRE-DES	2007	A										0.064									
			RARF	DES	2008	A										0.064									
			RARF	ROW	2008	A										0.999									
			RARF	CONST	2009	A										1.531									
Country Club/Brown: Intersection Improvements	All-CCB-20-03	2.658				A																			
			RARF	DES	2010	A																		0.267	
			RARF	ROW	2011	A																	0.800		
			RARF	CONST	2012	A																	1.591		
Crimson Rd: Broadway to Germann Rd	ACI-CRS-10-03	34.900				A																			
Crimson Rd: Broadway to Guadalupe	ACI-CRS-10-03-A		RARF	DES	2014	A																		1.189	
Crimson Rd: Broadway to Guadalupe			RARF	ROW	2015	A																		3.567	
Crimson Rd: Broadway to Guadalupe			RARF	CONST	2016	A																		7.134	
Crimson Rd: Guadalupe to Ray	ACI-CRS-10-03-B		RARF	DES	2016	A																		1.154	
Crimson Rd: Guadalupe to Ray			RARF	ROW	2017	A																		3.462	
Crimson Rd: Guadalupe to Ray			RARF	CONST	2018	A																		6.924	
Crimson Rd: Ray to Germann	ACI-CRS-10-03-C		RARF	DES	2018	A																		1.154	
Crimson Rd: Ray to Germann			RARF	ROW	2019	A																		3.462	
Crimson Rd: Ray to Germann			RARF	CONST	2020	A																		6.853	
Dobson/Guadalupe: Intersection Improvements	All-DOB-10-03	2.658																							
			RARF	PRE-DES	2007		0.072																		
			RARF	DES	2008		0.072																		
			RARF	ROW	2008		0.496																		
			RARF	CONST	2009			2.017																	
Dobson/University: Intersection Improvements	All-DOB-20-03	2.658				A																			
			RARF	DES	2009	A																		0.267	
			RARF	ROW	2010	A																		0.801	

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
			RARF	CONST	2011	A													1.590						
Elliot Rd: Power Rd to Meridian Rd	ACI-ELT-10-03	17.219																							
Elliot Rd: Power Rd to Ellsworth Rd	ACI-ELT-10-03-A		STP-MAG	DES	2021															0.868					
Elliot Rd: Power Rd to Ellsworth Rd			STP-MAG	ROW	2022																2.603				
Elliot Rd: Power Rd to Ellsworth Rd			STP-MAG	CONST	2023																	5.072			
Elliot Rd: Ellsworth Rd to Meridian Rd	ACI-ELT-10-03-B		STP-MAG	DES	2023																	0.868			
Elliot Rd: Ellsworth Rd to Meridian Rd			STP-MAG	ROW	2024																		2.603		
Elliot Rd: Ellsworth Rd to Meridian Rd			STP-MAG	CONST	2025																			5.206	
Germann: Ellsworth Rd to Signal Butte Rd	ACI-GER-10-03	11.903																							
			RARF	DES	2019	A																			
			RARF	ROW	2020	A																			
			RARF	CONST	2021	A																			
Gilbert/University: Intersection Improvements	All-GIL-10-03	2.658																							
			RARF	DES	2007	A																			
			RARF	ROW	2007	A																			
			RARF	CONST	2008	A																			
Greenfield Rd: University Rd to Baseline Rd	ACI-GRN-20-03	10.285																							
Greenfield Rd: Baseline Rd to Southern	ACI-GRN-20-03-A		RARF	DES	2008		0.326																		
Greenfield Rd: Baseline Rd to Southern			RARF	ROW	2008		0.724																		
Greenfield Rd: Baseline Rd to Southern			RARF	CONST	2008		3.941																		
Greenfield Rd: Southern to University Rd	ACI-GRN-20-03-B		RARF	PRE-DES	2010			0.290																	
Greenfield Rd: Southern to University Rd.			RARF	DES	2011	D			0.290																
Greenfield Rd: Southern to University Rd.			RARF	ROW	2012	D				1.551															
Greenfield Rd: Southern to University Rd.			RARF	CONST	2013	D					3.164														
Guadalupe Rd: Power Rd to Meridian Rd	ACI-GUD-10-03	21.957																							
Guadalupe Rd: Power Rd to Hawes Rd	ACI-GUD-10-03-A		RARF	DES	2011				0.747																
Guadalupe Rd: Power Rd to Hawes Rd			RARF	ROW	2012					2.242															
Guadalupe Rd: Power Rd to Hawes Rd			RARF	CONST	2013						4.485														
Guadalupe Rd: Hawes Rd to Crimson	ACI-GUD-10-03-B		RARF	DES	2011				0.747																
Guadalupe Rd: Hawes Rd to Crimson			RARF	ROW	2012					2.242															
Guadalupe Rd: Hawes Rd to Crimson			RARF	CONST	2013						4.485														
Guadalupe Rd: Crimson to Meridian	ACI-GUD-10-03-C		RARF	DES	2013					0.747															
Guadalupe Rd: Crimson to Meridian			RARF	ROW	2014							2.242													
Guadalupe Rd: Crimson to Meridian			RARF	CONST	2015								4.017												
Hawes Rd: Broadway Rd to Ray Rd	ACI-HWS-10-03	19.761				A																			
Hawes Rd: Broadway to Baseline	ACI-HWS-10-03-A		STP-MAG	DES	2020	A																			
Hawes Rd: Broadway to Baseline			STP-MAG	ROW	2021																				

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Hawes Rd: Broadway to Baseline			STP-MAG	CONST	2022																3.449				
Hawes Rd: Broadway to Baseline			RARF	CONST	2022																0.635				
Hawes Rd:Baseline to Elliot	ACI-HWS-10-03-B		RARF	DES	2022																0.661				
Hawes Rd:Baseline to Elliot			STP-MAG	ROW	2023																	1.982			
Hawes Rd:Baseline to Elliot			STP-MAG	CONST	2024																		3.964		
Hawes Rd: Elliot to Santan Freeway	ACI-HWS-10-03-C		STP-MAG	DES	2023																0.241				
Hawes Rd: Elliot to Santan Freeway			STP-MAG	ROW	2024																		1.448		
Hawes Rd: Elliot to Santan Freeway			STP-MAG	CONST	2024																2.412				
Hawes Rd: Santan Freeway to Ray	ACI-HWS-10-03-D		RARF	DES	2009	A															0.241				
Hawes Rd: Santan Freeway to Ray			RARF	ROW	2009	A																1.448			
Hawes Rd: Santan Freeway to Ray			RARF	CONST	2010	A															0.556				
Higley Rd Parkway: US 60 to SR-202L widening	ACI-HIG-10-03	15.948																							
Higley Rd Parkway: SR-202L to Brown Rd	ACI-HIG-10-03-A		RARF	DES	2017										0.801										
Higley Rd Parkway: SR-202L to Brown Rd			RARF	ROW	2018												2.403								
Higley Rd Parkway: SR-202L to Brown Rd			RARF	CONST	2019														4.770						
Higley Rd Parkway: Brown Rd to US-60	ACI-HIG-10-03-B		RARF	DES	2018												0.801								
Higley Rd Parkway: Brown Rd to US-60			RARF	ROW	2019														2.403						
Higley Rd Parkway: Brown Rd to US-60			RARF	CONST	2020														4.770						
Higley Rd Parkway: US 60 to SR 202L (RM) Grade Separations	ACI-HIG-10-03	26.464				A																			
			RARF	DES	2015	A									2.670										
			RARF	ROW	2016										8.009										
			RARF	CONST	2017											7.893	7.893								
Lindsay/Brown: Intersection Improvements	AI-LND-10-03	2.658				A																			
			RARF	DES	2010	A																	0.267		
			RARF	ROW	2011	A																	0.801		
			RARF	CONST	2012	A																	1.591		
McKellips Rd: E of Sossaman to Meridian Rd	ACI-MCK-10-03	18.953																							
McKellips Rd: E of Sossaman to Crismon	ACI-MCK-10-03-A		STP-MAG	DES	2021																1.143				
McKellips Rd: E of Sossaman to Crismon			STP-MAG	ROW	2022																	3.428			
McKellips Rd: E of Sossaman to Crismon			STP-MAG	CONST	2023																		6.855		
McKellips Rd: Crismon to Meridian	ACI-MCK-10-03-B		STP-MAG	DES	2023																	0.762			
McKellips Rd: Crismon to Meridian			STP-MAG	ROW	2024																		2.285		
McKellips Rd: Crismon to Meridian			STP-MAG	CONST	2025																			4.479	
McKellips Rd: Gilbert Rd to Power Rd	ACI-MCK-20-03	20.686				D																			
Corridor Study			RARF	Study	2006																				
McKellips/Lindsay Intersection Improvement	ACI-MCK-20-03-A		RARF	DES	2008		0.403																		

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
McKellips/Lindsay Intersection Improvement			RARF	ROW	2009			1.520																	
McKellips/Lindsay Intersection Improvement			RARF	CONST	2010				4.126																
McKellips/Greenfield & McKellips/Higley & McKellips/Val Vista Intersection Improvements	ACI-MCK-20-03-B		RARF	PRE-DES	2007		0.125																		
McKellips/Greenfield & McKellips/Higley & McKellips/Val Vista Intersection Improvements			RARF	DES	2011	D				0.524															
McKellips/Greenfield & McKellips/Higley & McKellips/Val Vista Intersection Improvements			RARF	ROW	2012	D					0.669														
McKellips/Greenfield & McKellips/Higley & McKellips/Val Vista Intersection Improvements			RARF	CONST	2013	D						7.022													
McKellips/Recker & McKellips/Power Intersection Improvements	ACI-MCK-20-03-C		RARF	PRE-DES	2013	D						0.562													
McKellips/Recker & McKellips/Power Intersection Improvements			RARF	DES	2014	D							0.512												
McKellips/Recker & McKellips/Power Intersection Improvements			RARF	ROW	2015	D								1.524											
McKellips/Recker & McKellips/Power Intersection Improvements			RARF	CONST	2016	D									3.697										
Meridian Rd: Baseline Rd to Germann Rd	ACI-MER-10-03	27.851				ADV																			
Meridian Rd: Baseline Rd to Ray Rd	ACI-MER-10-03-A		RARF	DES	2015	A									1.602										
Meridian Rd: Baseline Rd to Ray Rd			RARF	ROW	2016										4.805										
Meridian Rd: Baseline Rd to Ray Rd			RARF	CONST	2017											9.610									
Meridian Rd: Ray Rd to Germann Rd	ACI-MER-10-03-B		RARF	DES	2017											1.201									
Meridian Rd: Ray Rd to Germann Rd			RARF	ROW	2018												3.604								
Meridian Rd: Ray Rd to Germann Rd			RARF	CONST	2019													7.027							
Mesa Dr: Southen to US 60 & Mesa at Broadway Intersection Improvement	ACI-MES-10-03	8.898																							
Mesa Dr: US 60 to Southern	ACI-MES-10-03-A		RARF	PRE-DES	2008		0.217																		
Mesa Dr: US 60 to Southern			RARF	DES	2008		1.086																		
Mesa Dr: US 60 to Southern			RARF	ROW	2009			2.068																	
Mesa Dr: US 60 to Southern			RARF	CONST	2010				4.706																
Mesa/Broadway Intersection Improvement	ACI-MES-10-03-B		RARF	PRE-DES	2009			0.145																	
Mesa/Broadway Intersection Improvement			RARF	DES	2010				0.676																
Mesa/Broadway Intersection Improvement			RARF	ROW	2011																				
Mesa/Broadway Intersection Improvement			RARF	CONST	2012																				
Pecos Rd: Ellsworth Rd to Meridian Rd	ACI-PEC-10-03	12.019				D																			
			RARF	DES	2012	D					1.202														
			RARF	ROW	2013	D						3.604													
			RARF	CONST	2014	D							7.213												

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Ray Rd: Sossaman Rd to Meridian Rd	ACI-RAY-20-03	23.922				A																			
Ray Rd: Sossaman Rd to Ellsworth Rd	ACI-RAY-20-03-A		RARF	DES	2009	A															0.362				
Ray Rd: Sossaman Rd to Ellsworth Rd			RARF	ROW	2009	A															0.269				
Ray Rd: Sossaman Rd to Ellsworth Rd			RARF	CONST	2010	A															2.995				
Ray Rd: Ellsworth Rd to Meridian Rd	ACI-RAY-20-03-B		STP-MAG	DES	2023																	1.442			
Ray Rd: Ellsworth Rd to Meridian Rd			STP-MAG	ROW	2024																		4.325		
Ray Rd: Ellsworth Rd to Meridian Rd			STP-MAG	CONST	2025																			8.232	
			STP-MAG	SAVINGS	2025																				6.297
Signal Butte Rd: Broadway Rd to Pecos Rd	ACI-SGB-10-03	31.433				A																			
Signal Butte Rd: Broadway Rd to Elliot Rd	ACI-SGB-10-03-A		STP-MAG	DES	2020	A															1.602				
Signal Butte Rd: Broadway Rd to Elliot Rd			STP-MAG	ROW	2021																4.805				
Signal Butte Rd: Broadway Rd to Elliot Rd			STP-MAG	CONST	2022																9.610				
Signal Butte Rd: Elliot Rd to Pecos Rd	ACI-SGB-10-03-B		STP-MAG	DES	2022																1.602				
Signal Butte Rd: Elliot Rd to Pecos Rd			STP-MAG	ROW	2023																	4.805			
Signal Butte Rd: Elliot Rd to Pecos Rd			STP-MAG	CONST	2024																		9.009		
Southern Ave: Country Club Dr to Recker Rd	ACI-SOU-10-03	29.238				E																			
Southern Ave: Country Club to Recker			RARF	STUDY	2006																				
Southern/Country Club Intersection Imprvoement	ACI-SOU-10-03-A		RARF	DES	2009			0.290																	
Southern/Country Club Intersection Imprvoement			RARF	ROW	2010				1.448																
Southern/Country Club Intersection Imprvoement			RARF	CONST	2011					2.896															
Southern/Stapley Intersection Improvements	ACI-SOU-10-03-B		RARF	PRE-DES	2007		0.125																		
Southern/Stapley Intersection Improvements			RARF	DES	2009			1.178																	
Southern/Stapley Intersection Improvements			RARF	ROW	2010				2.896																
Southern/Stapley Intersection Improvements			RARF	CONST	2011	E				7.963															
Southern/Lindsay Intersection Improvements	ACI-SOU-10-03-C		RARF	DES	2009	E		0.304																	
Southern/Lindsay Intersection Improvements			RARF	ROW	2010	E			1.127																
Southern/Lindsay Intersection Improvements			RARF	CONST	2011	E				3.131															
Southern/Higley Intersection Improvement	ACI-SOU-10-03-D		RARF	DES	2011	E				0.736															
Southern/Higley Intersection Improvement			RARF	ROW	2012	E					2.207														
Southern/Higley Intersection Improvement			RARF	CONST	2013	E						4.937													
Southern Ave: Sossaman Rd to Meridian Rd	ACI-SOU-20-03	17.219				A																			
Southern Ave: Sossaman Rd to Crismon	ACI-SOU-20-03-A		STP-MAG	DES	2020	A																1.041			
Southern Ave: Sossaman Rd to Crismon			STP-MAG	ROW	2021																		3.123		

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Southern Ave: Sossaman Rd to Crismon			STP-MAG	CONST	2022																6.247				
Southern Ave: Crismon to Meridian	ACI-SOU-20-03-B		STP-MAG	DES	2022																0.694				
Southern Ave: Crismon to Meridian			STP-MAG	ROW	2023																	2.082			
Southern Ave: Crismon to Meridian			STP-MAG	CONST	2024																		4.030		
Stapley/University: Intersection Improvements	All-STA-10-03	2.658				A																			
			RARF	DES	2010	A																			0.267
			RARF	ROW	2011	A																			0.801
			RARF	CONST	2012	A																			1.591
Thomas Rd: Gilbert Rd to Val Vista Dr	ACI-THM-10-03	5.316																							
			RARF	DES	2008		0.357																		
			RARF	ROW	2008		1.327																		
			RARF	CONST	2009			3.632																	
University Dr: Val Vista Dr to Hawes Rd	ACI-UNV-10-03	20.686				A																			
University Dr: Val Vista Dr to Higley	ACI-UNV-10-03-A		STP-MAG	DES	2019	A															1.041				
University Dr: Val Vista Dr to Higley			STP-MAG	ROW	2020	A															3.123				
University Dr: Val Vista Dr to Higley			STP-MAG	CONST	2021																6.247				
University Dr: Higley to Hawes	ACI-UNV-10-03-B		STP-MAG	DES	2021																1.041				
University Dr: Higley to Hawes			STP-MAG	ROW	2022																	3.123			
University Dr: Higley to Hawes			STP-MAG	CONST	2023																		6.110		
Val Vista Dr: University Dr to Baseline Rd	ACI-VAL-10-03	10.516				A																			
Val Vista Dr: Baseline Rd to Southern	ACI-VAL-10-03-A		RARF	DES	2010	A															0.608				
Val Vista Dr: Baseline Rd to Southern			RARF	ROW	2011	A															1.579				
Val Vista Dr: Baseline Rd to Southern			RARF	CONST	2012	A															3.123				
Val Vista Dr: Southern to University	ACI-VAL-10-03-B		RARF	DES	2012	A															0.521				
Val Vista Dr: Southern to University			RARF	ROW	2013	A															1.562				
Val Vista Dr: Southern to University			RARF	CONST	2014	A															3.123				
PEORIA																									
Beardsley Connection :SR-101L to Beardsley Rd at 83rd Ave/Lake Pleasant Parkway	ACI-BRD-10-03	22.073				E																			
			RARF	DES	2007	E				1.616															
			RARF	ROW	2007	E				2.831	2.831														
			RARF	CONST	2008-2009	E			7.396	7.396															
Happy Valley Rd: L303 to 67th Avenue	ACI-HPV-10-03	19.646				A																			
Happy Valley Rd: Lake Pleasant Pkwy to Terramar Blvd- 0 to 2 lanes	ACI-HPV-10-03-A		RARF	DES	2004	A																			
Happy Valley Rd: Lake Pleasant Pkwy to Terramar Blvd- 0 to 2 lanes			RARF	ROW	2005	A																			
Happy Valley Rd: Lake Pleasant Pkwy to Terramar Blvd- 0 to 2 lanes			RARF	CONST	2008	A															6.549				

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	
Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave - 6 lanes	ACI-HPV-10-03-B		STP-MAG	DES	2022																					
Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave - 6 lanes			STP-MAG	ROW	2022																6.549					
Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave - 6 lanes			STP-MAG	CONST	2022																	6.549				
Lake Pleasant Parkway: Beardsley Rd and Lake Pleasant Parkway/83rd Avenue to SR-74 (PHASE 1, 4 Lanes)	ACI-LKP-10-03	38.137																								
Lake Pleasant Pkwy: Dynamite Blvd to SR-74 - DCR: 2 to 4 lanes	ACI-LKP-10-03-A		RARF	Interim DES	2004	A				0.971																
Lake Pleasant Pkwy: Dynamite Blvd to SR-74 - DCR: 2 to 4 lanes			RARF	FINAL DES	2011					3.640																
Lake Pleasant Pkwy: Dynamite Blvd to SR-74 - DCR: 2 to 4 lanes			RARF	ROW	2012 & 2013						3.843	3.843														
Lake Pleasant Pkwy: Dynamite Blvd to SR-74 - DCR: 2 to 6 lanes			RARF	CONST	213 & 2014							5.432	5.432													
Lake Pleasant Pkwy: Union Hills to Dynamite Rd, 4 lane portion	ACI-LKP-10-03-B		RARF	DES	2003	E																				
Lake Pleasant Pkwy: Union Hills to Dynamite Rd, 4 lane portion			RARF	ROW	2004	E																				
Lake Pleasant Pkwy: Union Hills to Dynamite Rd, 4 lane portion			RARF	FINAL DES	2003	E																				
Lake Pleasant Pkwy: Union Hills to Dynamite Rd, 4 lane portion			RARF	CONST	2006	E/A					4.022	4.022														
Lake Pleasant Pkwy: Union Hills to SR-74: Intersection Improvements	ACI-LKP-10-03-C		RARF	DES	2011					2.311																
Lake Pleasant Pkwy: Union Hills to SR-74: Intersection Improvements			RARF	ROW	2011																					
Lake Pleasant Pkwy: Union Hills to SR-74: Intersection Improvements			RARF	CONST	2012						4.623															
PHOENIX																										
Avenida Rio Salado: 7th St to SR-202L	ACI-RIO-10-03	42.412																								
				Corridor Study	2007																					
			STP-MAG	DES	2011					4.045																
			STP-MAG	ROW	2011					5.352																
			STP-MAG	ROW	2012						10.234															
			STP-MAG	CONST	2013							8.017														
			STP-MAG	CONST	2014								14.763													
Black Mountain Boulevard	ACI-BMT-10-03	21.379																								
				Corridor Study	2007																					
			STP-MAG	DES	2010				2.439																	

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
			STP-MAG	ROW	2011					2.340															
			STP-MAG	CONST	2012						8.299														
			STP-MAG	CONST	2013							8.300													
Happy Valley Rd:67th Avenue to I-17	ACI-HPV-20-03	15.717																							
Happy Valley: I-17 to 35th Avenue	ACI-HPV-20-03-A		RARF	DES	2003																				0.564
Happy Valley: I-17 to 35th Avenue			RARF	ROW	2004																				0.011
Happy Valley: I-17 to 35th Avenue			RARF	CONST	2005																				4.864
Happy Valley: 35th Avenue to 43rd Avenue	ACI-HPV-20-03-B		RARF	DES	2008																				0.307
Happy Valley: 35th Avenue to 43rd Avenue			RARF	ROW	2010																				0.842
Happy Valley: 35th Avenue to 43rd Avenue			RARF	CONST	2011																				2.896
Happy Valley: 43rd to 55th Avenue	ACI-HPV-20-03-C		RARF	DES	2009																				0.434
Happy Valley: 43rd to 55th Avenue			RARF	ROW	2010																				0.203
Happy Valley: 43rd to 55th Avenue			RARF	CONST	2011																				2.896
Happy Valley: 55th to 67th Avenue	ACI-HPV-20-03-D		RARF	DES	2010																				0.434
Happy Valley: 55th to 67th Avenue			RARF	CONST	2012																				2.266
Sonoran Blvd: Central to 32nd St	ACI-SON-10-03	30.971																							
			RARF	DES	2011					3.930															
			RARF	ROW	2012						6.229														
			RARF	CONST	2013							10.406	10.406												
SCOTTSDALE																									
Carefree Hwy: Cave Creek Rd to Scottsdale Rd	ACI-CFR-10-03	8.898				A																			
			RARF	DES	2014	A																			
			RARF	ROW	2015	A									2.639										
			RARF	CONST	2016										6.259										
SR-101L North Frontage Roads: Pima/Princess Dr to Scottsdale Rd	ACI-SFN-10-03	22.073																							
SR-101L Frontage Rd: Hayden Rd to Scottsdale Rd	ACI-SFN-10-03-A		RARF	DES	2007		0.688																		
SR-101L Frontage Rd: Hayden Rd to Scottsdale Rd			RARF	ROW	2008		2.461																		
SR-101L Frontage Rd: Hayden Rd to Scottsdale Rd			RARF	CONST	2008		3.558																		
SR-101L Frontage Rd: Pima Rd/ Princess Dr to Hayden Rd	ACI-SFN-10-03-B		RARF	PRE-DES	2008		0.050																		
SR-101L Frontage Rd: Pima Rd/ Princess Dr to Hayden Rd			RARF	DES	2008		0.599																		
SR-101L Frontage Rd: Pima Rd/ Princess Dr to Hayden Rd			RARF	ROW	2008		0.584																		
SR-101L Frontage Rd: Pima Rd/ Princess Dr to Hayden Rd			RARF	CONST	2009			4.490																	
			RARF	SAVINGS	2009			9.645																	
SR-101L South Frontage Roads: Hayden to Pima	ACI-SFS-10-03	13.174																							

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
			RARF	PRE-DES	2008		0.127																		
			RARF	DES	2008		0.578																		
			RARF	ROW	2009			5.663																	
			RARF	CONST	2010				4.045																
			RARF	SAVINGS	2010				2.762																
Miller Rd/SR-101L Underpass	ACI-MLR-10-03	13.290																							
			STP-MAG	DES	2018												1.329								
			STP-MAG	ROW	2019													3.260							
			STP-MAG	CONST	2020														8.701						
Pima Rd: Happy Valley Rd to Dynamite Blvd	ACI-PMA-20-03	22.535																							
			RARF	DES	2016										2.342										
			RARF	ROW	2017											4.938									
			RARF	CONST	2018												7.627	7.627							
Pima Rd: Thompson Peak Parkway to Happy Valley & Dynamite to Cave Creek	ACI-PMA-10-03	79.046				A																			
Pima Rd: Thompson Peak Parkway to Pinnacle Peak	ACI-PMA-10-03-A		RARF	DES	2006	A				0.652															
Pima Rd: Thompson Peak Parkway to Pinnacle Peak			RARF	ROW	2006	A				1.810															
Pima Rd: Thompson Peak Parkway to Pinnacle Peak			RARF	CONST	2008	A				10.497															
Pima Rd/Happy Valley Intersection Improvement	ACI-PMA-10-03-B			CONST	2007	A																			
Pima Rd: Pinnacle Peak to Happy Valley Rd	ACI-PMA-10-03-C		RARF	DES	2011					0.652															
Pima Rd: Pinnacle Peak to Happy Valley Rd			RARF	ROW	2012						2.534														
Pima Rd: Pinnacle Peak to Happy Valley Rd			RARF	CONST	2013							5.792													
Pima Rd: Dynamite Blvd to Stagecoach Rd	ACI-PMA-10-03-D		RARF	DES	2011					2.172															
Pima Rd: Dynamite Blvd to Stagecoach Rd			RARF	ROW	2012						3.620														
Pima Rd: Dynamite Blvd to Stagecoach Rd			RARF	CONST	2013-2014							13.755	13.755												
CAREFREE; Pima Rd: Stagecoach Rd to Cave Creek	ACI-PMA-10-03-E		RARF	CONST	2014								5.171												
Project Savings			RARF	Project Savings	2014&2015								6.735	11.904											
Pima Rd: McKellips to Via Linda	ACI-PMA-30-03	29.122																							
				Pre-DES	2008																				
			RARF	DES	2009			1.955																	
			RARF	ROW	2009			3.439																	
			RARF	CONST	2010/11				12.452	11.277															
Scottsdale Airport Runway Tunnel	ACI-SAT-10-03	66.680																							
			STP-MAG	CONST												13.336	13.336	13.336	13.336	13.336					
Scottsdale Rd: Thompson Peak Pkwy to Happy Valley Rd	ACI-SCT-10-03	12.712				A																			
Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak	ACI-SCT-10-03-A		RARF	PRE DES	2007	A				0.362															
Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak			RARF	DES	2009	A				0.688															

RTP Project	RTP Code	Remn. Reg. Budget 2007\$	Fund Type	Work Phase	FY for Work	A/D/E	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak			RARF	ROW	2010	A				2.715															
Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak			RARF	CONST	2010	A				7.239															
Scottsdale Rd: Pinnacle Peak to Happy Valley	ACI-SCT-10-03-B		RARF	DES	2013							1.708													
Scottsdale Rd: Pinnacle Peak to Happy Valley			RARF	ROW	2014																				
Scottsdale Rd: Pinnacle Peak to Happy Valley			RARF	CONST	2015																				
Scottsdale Rd: Happy Valley Rd to Carefree Hwy	ACI-SCT-20-03	27.042																							
			RARF	DES	2016										3.116										
			RARF	ROW	2017											5.632									
			RARF	CONST	2018/2019												7.483	10.811							
Shea Blvd: SR-101L to SR-87	ACI-SHA-20-03	22.073				A																			
Shea Blvd at 90th St	ACI-SHA-20-03-A		RARF	DES	2006	A																			
Shea Blvd at 90th St			RARF	CONST	2006	A																			
Shea Blvd at 92nd St	ACI-SHA-20-03-B		RARF	DES	2006	A																			
Shea Blvd at 92nd St			RARF	CONST	2006	A																			
Shea Blvd at 96nd St	ACI-SHA-20-03-C		RARF	DES	2004	A																			
Shea Blvd at 96nd St			RARF	ROW	2003	A																			
Shea Blvd at 96nd St			RARF	CONST	2006	A																			
Shea Blvd at Via Linda St	ACI-SHA-20-03-D		RARF	DES	2006	A																			
Shea Blvd at Via Linda St			RARF	CONST	2006	A																			
Shea Blvd at 124th St	ACI-SHA-20-03-E		RARF	DES	2006	A																			
Shea Blvd at 124th St			RARF	CONST	2006	A																			
Shea Blvd at 134th St	ACI-SHA-20-03-F		RARF	DES	2007	A																			
Shea Blvd at 134th St			RARF	CONST	2007	A																			
Shea Blvd - SR-101L to 96th St, ITS Improvements	ACI-SHA-20-03-G		RARF	DES	2007	A																			
Shea Blvd - SR-101L to 96th St, ITS Improvements			RARF	CONST	2008	A																			
Regional Reimbursement for the advanced project			RARF	Reimbursement																					
Union Hills: Hayden to Pima	ACI-UNH-10-03	12.943				A																			
			RARF	DES	2019	A																			
			RARF	ROW	2020	A																			
			RARF	CONST	2021																				
ITS Program	AOP-ITS-10-03	57.782	CMAQ				5.559	5.441	5.467	5.494	5.521	5.548	5.575	5.601	5.628	5.656	2.294								
					TOTAL		74.829	73.171	94.144	127.185	93.448	127.384	101.951	75.393	88.593	112.015	100.657	76.616	62.939	109.3968	99.905	92.2112	79.093	81.534	0

PROGRAM TOTAL: 1670.465

ITS: 57.782

ARTERIAL STREETS: 1612.688

Appendix C
Transit Life Cycle Program

Transit Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Total
Bus Operating Projects																						
Existing Service Funded by RPTA																						
Local Service	5.06	3.85	3.85	3.42	2.85	2.73	2.49	1.13	1.13	1.13	1.13	1.13	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	35.03
Express/BRT Service	3.90	3.90	3.90	3.59	3.59	3.32	3.04	3.04	3.04	2.28	2.28	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	57.81
SCAT Paratransit	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	4.33
Total Existing Service	9.17	7.95	7.95	7.22	6.65	6.25	5.73	4.38	4.38	4.38	3.61	3.61	2.88	97.16								
Supergrid Service																						
Scottsdale Road	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	126.81
Chandler Boulevard	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	77.12
Glendale Avenue	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	52.62
Main Street		2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	47.41
Arizona Avenue/Country Club					2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	36.55
Gilbert Road			2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	45.86
Baseline Road				1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	20.10
Southern Avenue		2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	40.16
Dobson Road		2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	43.78
Camelback Road						1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	31.50
Alma School Rd.							2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	39.77
Elliot Road						3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	48.62
University Drive					3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	53.85
Dysart Road							1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	19.02
Hayden/McClintock							4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	58.64
59th Avenue													1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	12.41
Broadway Avenue						2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	42.68
Power Road			1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.61	1.61	1.60	1.61	1.61	1.61	1.61	1.61	30.49
Ray Road									2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	29.49
Tatum Boulevard/44th Street													1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	9.39
McDowell/McKellips Road							3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	53.72
Peoria/Shea Avenue								4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	60.66
Van Buren													1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	9.58
Bell Road												5.77	5.77	5.77	5.77	5.77	5.77	5.77	5.77	5.77	5.77	57.67
Waddell Road/Thunderbird												3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	31.56
99th Avenue													2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	16.26
Buckeye Road													2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	23.76
Dunlap/Olive Avenue													2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	16.68
Indian School Road													1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	13.74
Queen Creek Road												1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	14.86
Thomas Road													1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	10.79
Litchfield Road																	2.65	2.65	2.65	2.65	2.65	13.26
83rd Avenue/75th Avenue																2.30	2.30	2.30	2.30	2.30	2.30	13.81
Greenfield Road															1.87	1.87	1.87	1.87	1.87	1.87	1.87	13.09
Total Supergrid	12.22	18.78	22.80	23.92	29.24	36.91	43.15	53.03	55.29	55.29	55.29	62.55	72.27	79.35	81.22	83.53	86.18	86.18	86.18	86.18	86.18	1,215.73
Rural Route Service																						
Gila Bend connector	0.35	0.35	0.35	0.35	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	8.80
Wickenburg connector	0.24	0.24	0.24	0.24	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	6.96
Total Rural Route	0.59	0.59	0.59	0.59	0.79	15.75																
BRT/Express Service																						
North Glendale Express	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	11.40
North Loop 101 Connector	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	9.13
East Loop 101 Connector		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	8.46
Main Street Arterial BRT		1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	26.44
Papago Freeway Connector		0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	8.21
Red Mountain Express		0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	6.23
West Loop 101 Connector		0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	8.64
Desert Sky Express	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	12.27
Apache Junction Express				0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	6.39

Transit Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Total
Arizona Avenue Arterial BRT				0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	12.80
Buckeye Express								0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	4.22
Superstition Freeway Connector					0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	2.12
Grand Avenue Limited						0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	14.02
Pima Express						0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	6.39
Peoria Express						0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	6.11
Scottsdale/Rural Arterial BRT						1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	23.46
S. Central Express								0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	8.89
Black Canyon Freeway Connector								0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	4.87
Deer Valley Express	1.21	1.21	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	32.30
South Central Avenue Arterial BRT									0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	8.69
Ahwatukee Connector										0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	1.99
Anthem Express										0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	4.71
Santan Express										1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	13.93
Red Mountain Freeway Connector											0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	4.34
Superstition Springs Express											0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	8.99
Avondale Express												0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	3.86
North I-17 Express															0.48	0.48	0.48	0.48	0.48	0.48	0.48	3.39
Loop 303 Express															0.43	0.43	0.43	0.43	0.43	0.43	0.43	2.58
SR 51 Express	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	18.44
Ahwatukee Express	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	21.53
Chandler Boulevard Arterial BRT																1.25	1.25	1.25	1.25	1.25	1.25	6.27
Total BRT/Express	4.62	7.52	7.88	8.94	9.07	10.34	12.31	13.25	14.29	14.46	16.15	17.49	17.92	17.92	18.58	19.01	20.26	20.26	20.26	20.26	20.26	311.06
Other Operating																						
ADA Complementary Paratransit	4.20	5.77	6.59	6.95	8.07	9.90	11.39	13.12	13.57	13.61	13.67	14.77	15.92	16.50	16.91	17.37	17.80	17.81	17.81	17.81	17.81	277.33
Regional Customer Services	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	145.71
RPTA Planning and Administration	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	115.82
Safety and Security Programs	1.32	1.73	1.95	2.02	2.28	2.70	3.09	3.56	3.73	3.74	3.78	4.21	4.68	5.04	5.16	5.30	5.49	5.49	5.49	5.49	5.49	81.77
Total Other Operating	17.97	19.95	20.99	21.43	22.80	25.06	26.93	29.13	29.75	29.80	29.90	31.43	33.06	33.99	34.53	35.12	35.75	35.75	35.75	35.75	35.75	620.62
Operating Contingency	1.32	1.73	1.95	2.02	2.28	2.70	3.09	3.56	3.73	3.74	3.78	4.21	4.68	5.04	5.16	5.30	5.49	5.49	5.49	5.49	5.49	81.77
Total Bus Operating Projects	45.88	56.53	62.17	64.13	70.81	82.06	92.00	104.14	108.24	108.46	109.54	120.08	131.58	139.96	143.16	146.62	151.35	151.35	151.35	151.35	151.35	2,342.10
Bus Capital Projects																						
Fleet Acquisition																						
Buses	61.45	64.75	26.78	66.28	49.90	45.75	58.25	17.50	60.48	8.28	33.95	60.30	69.60	68.15	28.10	64.05	54.95	44.05	22.55	40.14	42.15	987.39
Rural Buses				0.23	0.55				0.23	0.55				0.23	0.55				0.23	0.55		3.12
Paratransit Buses	5.23	5.46	4.99	4.21	5.38	4.76	5.46	4.68	4.76	5.07	5.30	5.07	5.07	4.37	5.46	4.91	5.46	4.68	1.09	4.03	3.77	99.21
Commuter Vanpools	1.65	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	43.65
Total Fleet Acquisition	68.33	72.31	33.87	72.82	57.93	52.61	65.81	24.28	67.57	15.99	41.35	67.47	76.77	74.85	36.21	71.06	62.51	50.83	25.98	46.81	48.02	1,133.37
Park and Rides																						
East Buckeye		0.09	1.70	2.58																		4.37
Price/202	1.79	2.58																				4.37
Val Vista/202									0.09	1.70	2.58											4.37
Glendale Grand				0.09	1.70	2.58																4.37
Country Club		0.09	1.70	2.58																		4.37
Peoria Grand				0.09	1.70	2.58																4.37
Laveen/59th Ave							0.09	1.70	2.58													4.37
Elliot/I-10								0.09	1.70	2.58												4.37
Camelback/101						0.09	1.70	2.58														4.37
Happy Valley-I-17	1.70	2.58																				4.28
Cactus	1.79	2.58																				4.37
Grand/Surprise	4.37																					4.37
Loop 303														0.09	1.70	2.58						4.37
Total Park and Rides	9.66	7.91	3.41	5.33	3.41	5.24	1.79	4.37	4.37	4.28	2.58			0.09	1.70	2.58						56.71

Transit Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Total	
Transit Centers																							
Chandler Mall 4-bay	1.85																					1.85	
Downtown Chandler 4-bay	0.04	0.70	1.12																			1.85	
Glendale/Grand 4-bay				0.04	0.70	1.12																1.85	
Bell-101 6-bay										0.06	1.04	1.57										2.67	
Mesa Downtown 6-bay	0.06	1.04	1.57																			2.67	
Peoria 4-bay						0.04	0.70	1.12														1.85	
19thAveCamelback 6-bay	1.10	1.57																				2.67	
44th Cactus 6-bay						0.06	1.04	1.57														2.67	
Central Station Rehab			0.13			0.83	5.42															6.38	
Metrocenter TC Rehab		0.13	0.38	5.87																		6.38	
Scottsdale 4-bay						0.04	0.70	1.12														1.85	
South Tempe 4-bay	0.73	1.12																				1.85	
College/ASU Expansion/Rehab									0.13	0.38	0.45	5.42										6.38	
Total Transit Centers	3.79	4.55	3.20	5.90	0.70	2.08	7.85	3.81	0.13	0.44	1.49	6.98										40.92	
Operations and Maintenance Facilities																							
Paratransit EVDAR										0.64	8.57											9.21	
Rehab - Mesa							0.75	8.69														9.45	
Phoenix	12.14	14.23																				26.37	
Phoenix Heavy				0.58		31.88	13.91															46.37	
Rehab Phx-South							0.75	8.69														9.45	
Paratransit Phoenix					0.64	8.57																9.21	
Tempe	12.14	14.23																				26.37	
Fixed Route (New)																	2.32	23.48	20.58			46.37	
Rural Facility										0.05	0.75											0.80	
Vanpool											0.37	0.58	4.46									5.41	
Total O & M Facilities	24.29	28.46		0.58	0.64	40.45	15.42	17.39		0.68	9.70	0.58	4.46				2.32	23.48	20.58			189.01	
BRT Right-of-Way Improvements																							
Main Street	7.26	7.26																				14.52	
Arizona Avenue			10.15	10.15																		20.30	
Scottsdale/Rural Roads						15.65	15.65															31.29	
South Central Avenue							8.02	8.02														16.05	
Chandler Boulevard																12.54	12.54					25.08	
Total BRT ROW	7.26	7.26	10.15	10.15		15.65	23.67	8.02								12.54	12.54					107.23	
Other Capital Improvements																							
Bus Stop Amenities	1.18	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	17.22
Bus Pullouts	1.07	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	15.63
ITS/VMS	1.18	0.53	1.13		0.58	0.70	0.94	0.77	0.89	0.94	0.92	1.97	3.42	14.54	5.25	0.19	2.46	3.11	4.68	2.97	2.57	49.74	
Total Other Capital	3.43	2.06	2.66	1.53	2.11	2.23	2.47	2.30	2.42	2.47	2.45	3.50	4.95	16.07	6.78	1.72	3.99	4.64	6.21	4.50	4.10	82.59	
Contingency for Capital Projects	12.92	13.58	5.41	8.34	4.18	15.66	13.39	8.28	4.63	2.23	5.17	5.29	5.21	4.79	2.72	6.89	6.53	7.70	5.57	2.57	2.61	143.66	
Total Bus Capital Projects	129.68	136.13	58.69	104.65	68.95	133.92	130.41	68.45	79.11	26.09	62.73	83.83	91.39	95.81	47.41	94.79	87.88	86.64	58.33	53.88	54.73	1,753.50	
Light Rail Transit Capital Projects																							
Systemwide Support																							
Regional Reimbursements for MOS	47.08	48.33	43.09	30.88																		169.38	
System Plan and Design					8.88	8.63											28.70	28.70	33.18			108.09	
Systemwide Infrastructure																						7.25	
Utility Reimbursements	7.25																					7.25	
Total Systemwide Support	54.32	48.33	43.09	39.76	8.63												28.70	28.70	33.18			284.71	
LRT Extensions																							
Northwest Link - Phase 1	31.28	81.53	68.82	47.49	17.50																	246.62	
Northwest Link - Phase 2				1.23	5.02	6.38	10.61	14.31	39.04	36.76	18.74											132.09	
Central Mesa	1.52	3.24	4.59	7.07	9.16	7.49	78.18	60.83														172.09	
Tempe South	1.15	1.72	4.48	5.51	7.92	33.64	54.42	27.21														136.04	
Glendale		0.92	1.72	6.08	10.56	17.22	34.55	80.88	113.65	78.81												344.40	

Transit Life Cycle Program FY 2008 - FY 2026 (In Millions - 2007 Dollars)

	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Total
I-10 West				1.06	1.87	11.88	22.16	38.92	68.42	155.24	225.78	186.55	45.81									757.68
NE Phoenix									1.21	2.01	13.43	25.26	39.84	57.46	37.48	205.38	247.28	197.23				826.56
Total LRT Extensions	33.95	87.41	79.61	68.45	52.03	76.61	199.92	222.14	222.32	272.82	257.95	211.81	85.64	57.46	37.48	205.38	247.28	197.23				2,615.48
Total LRT Capital Projects	88.27	135.75	122.70	108.21	60.66	76.61	199.92	222.14	222.32	272.82	257.95	211.81	85.64	57.46	37.48	205.38	275.98	225.93	33.18			2,900.19
Total TLCF Expenditures	263.83	328.40	243.56	276.99	200.43	292.59	422.32	394.73	409.67	407.37	430.22	415.72	308.62	293.23	228.05	446.79	515.21	463.92	242.86	205.23	206.08	6,995.80

Notes: - Shaded areas covering FY 2027 and 2028 are not part of current Transit Life Cycle Program but have been included to provide continuity through the end of the RTP planning period, which is FY 2028.

- Funding adjustments (see Chapter 7) were implemented to reflect changes in the development schedule of the LRT Northwest Extension, which will be implemented in two phases instead of a single project. It is anticipated that the RPTA will consider this change in May 2007.

Appendix D

Planning Information Sources

PLANNING INFORMATION SOURCES

- Arizona Department of Environmental Quality
 - Air Quality Inventory (Ambient air quality data).
 - AZMAPPER: Water Quality Database.
- Arizona Department of Transportation
 - Website has a number of environmentally related resources. Templates for Categorical Exclusions and Environmental Assessments would help to identify key environmental factors and issues that may be considered. Air Quality Inventory (Ambient air quality data).
- Arizona Game and Fish Department
 - Website covering species of concern, riparian locations, wildlife environments and other related information. The Department has additional resources that would be useful in the transportation planning process, such as wildlife habitat corridors. Air Quality Inventory (Ambient air quality data).
 - Wildlife Linkages Assessment will be finalized soon. Specific linkage assessments are also being currently being performed. These documents and maps will be made available through the ADOT Linkages Website.
 - The Heritage Data Management System is a database that tracks locations of sensitive species in Arizona. This data system has GIS and database analysis for species in a particular area etc. Visit the programs web site at <http://www.azgfd.gov/hdms> for more specific information such as species abstracts, species lists, and distribution maps.
- Arizona State Historic Preservation Office
 - AZSITE Database – Arizona’s designated Cultural Resources Electronic Inventory system including a database and GIS, which includes identified properties, information about the properties, National Register eligibility, and survey areas.
 - Archeological and Historical Sites Inventory (Hardcopy listing and maps).

- Arizona State Land Department
 - Land Use GIS Database.
- Gila River Indian Community
 - Historical and Cultural Site Inventories.
- Maricopa County Air Quality Department
 - Maricopa County Point Source Emission Inventories.
 - Travel Reduction Program Commuter Travel Database.
- Maricopa County Department of Transportation
 - Environmental information resources applicable to the regional transportation planning process.
- Maricopa County Flood Control District
 - Water Course Master Plans.
 - Drainage Area Master Plans.
 - Cultural and biological inventories from water course and drainage studies
 - GIS flood plain contours and other GIS cultural and biological layers.
- National Resource Conservation Service
 - Soil and vegetation maps can be used in the long-range transportation planning process to identify potential wetland areas.
- U. S. Army Corp of Engineers
 - Los Angeles District Regulatory Web Page
 - Clean Water Act Section 404 Program Regulations (33 CFR 320-331)
- U. S. Bureau of Land Management
 - Soil and vegetation maps can be used in the long-range transportation Preliminary Draft Management Alternatives; Phoenix South and Sonoran Desert National Monument Planning Areas; Department of the Interior,

Bureau of Land Management, Phoenix Field Office; Public Workshops
February – March 2005.

- Agua Fria National Monument and Bradshaw-Harquahala Draft Resource Management Plan and Draft Environmental Impact Statement; Department of the Interior, Bureau of Land Management, Phoenix Field Office; October 2005.
- U. S. Forest Service - Tonto National Forest
 - Tonto National Forest: Forest Resources GIS Database
 - Tonto National Forest: Land Management Plan

Appendix E

Transportation Enhancement Projects

TRANSPORTATION ENHANCEMENT PROJECTS (1993 - 2006)

PROJECT DESCRIPTION	AMOUNT FUNDED	RECIPIENT	YEAR
PHOENIX SUNNYSLOPE CANAL BANK - Canal bank improvement including enhancements of 1.5 miles of non-motorized, multi-use pathways. The addition of lights, landscaping, art and other pedestrian amenities, and linkages to public transit routes are included. This is the first of five identified canal bank improvement demonstration projects in Phoenix.	\$500,000	Phoenix	1993
RIO SALADO NON-MOTORIZED PATH SYSTEM - Two miles of new multi-use paths and 1.5 miles of concrete paths, 5 acres of landscaping, 25 lighting fixtures, 6 rest area/ramadas, and visual enhancements to 2 pedestrian/equestrian crossings under the roadway at the south end of Papago Park, south of the Red Mountain Freeway on the north side of the Salt River between Southern Pacific Railroad and Rural Road.	\$500,000	Tempe	1994
DOWNTOWN CANAL BANK IMPROVEMENTS - Pedestrian and Bicycle Crossing of Canal in Downtown Scottsdale (part of waterfront Project)	\$364,000	Scottsdale	1994
PASEO MULTI-USE BRIDGE AND CONNECTING PATH AT THE ARIZONA CANAL - Bridge and bicycle path	\$34,457	Glendale	1994
ARIZONA RAILWAY MUSEUM - Electrification for historic rail car	\$16,000	Chandler	1994
PEORIA CLASS 2 BICYCLE ROUTE PLAN – Adds Striping for an on-street bicycle route.	\$90,000	Peoria	1994
3RD AVENUE BICYCLE BRIDGE OVER THE GRAND CANAL - Bridge for 3rd Avenue Commuter bicycle route	\$104,000	Phoenix	1994
TOVREA CASTLE - Acquisition of 5.7 acres of land to secure right of way for bicycle paths and trails to link to Papago Trail System.	\$500,000	Phoenix	1995
SUNNYSLOPE SAFE PEDESTRIAN ZONES - Pedestrian paths and enhancements (public art, signs, street furniture) to for Sunnyslope neighborhood core	\$80,000	Phoenix	1995
BUTTERFIELD STATE ROUTE PAINTED ROCKS PETROGLYPH SITE –Development of a site located on historic transportation route from St. Louis to San Francisco with an interpretive center, parking and pedestrian paths.	\$70,800	Bureau of Land Management	1995
CENTRAL CITY ELDERLY PEDESTRIAN DEMONSTRATION PROJECT Internally illuminated street signs, universal symbol signs at traffic signals, improvements to refuge islands for elderly pedestrians in the area between 7th Street and 7th Avenue and Camelback Road to the Downtown area.	\$180,000	Phoenix	1995
BIKE REST AREAS - 8TH ST/ADOBE - Addition of five bicycle rest areas including ramadas, drinking fountains, shade trees, bicycle racks, and identifying signs to existing bikeway system.	\$96,159	Mesa	1995
GRAND AVENUE FRONTAGE ROAD ENHANCEMENT –Construction of 15,000 linear feet of sidewalk and landscaping within the cities of El Mirage and Surprise	\$268,788	El Mirage	1995
ELECTRONIC ARCHIVES AND INTERPRETIVE PROGRAMS FOR THE TOWNS AND VILLAGES OF HOHOKAM CANAL SYSTEM II - Construction of an electronic pathway to prehistoric towns and villages located on Hohokam Canal System II sites excavated during Phoenix Freeway Construction. Archives will include 'virtual tours' of the settlements, synthesis of archaeology, and approximately 100,000 pages of reports.	\$201,500	ASU	1996
WEST FIFTH STREET MULTI-MODAL FACILITIES - Multi-modal facilities for one mile of collector street (West 5th Street) through the Riverside/Sunset Neighborhood. Neighborhood Association providing the match. Includes sidewalk widening, provision of bicycle lanes, landscaping, lighting, and public art.	\$500,000	Tempe	1996
CENTRAL AVENUE ART WALK/HEARD MUSEUM NORTH ANCHOR - ½ mile pedestrian walkway that will incorporate public art, native landscaping, and pedestrian amenities such as benches and signs. Phase I of the Art Walk linking Heard Museum to the Phoenix Art Museum and Hance Park. Match largely private funds.	\$320,000	Phoenix	1996
PHOENIX CENTRAL STATION STREETScape -1,400 linear feet of landscaping, kiosks, improved bush shelters, pedestrian lighting, benches, and sidewalk paving to complement the design elements of the Central Station. This area includes bus stops that pass by but do not enter Central Station.	\$200,000	Phoenix	1996
BUSH HIGHWAY BIKE LANE - 5.8 miles bike lane/shoulder along Bush Highway from Mesa City Limits to Usury Pass Road. Regional Bicycle Route #71.	\$250,000	Maricopa County	1996
CAVE CREEK WASH MULTI MODAL COMMUTER BICYCLE PATH - Design and Construction of gaps in a six-mile section of the 18+ mile Cave Creek non-motorized path system. Includes 10' wide pavement, underpass modifications, guide and interpretive signs, and amenities (fountains, benches, lighting). An artist will be involved in design.	\$274,625	Cave Creek	1996
CITY OF PHOENIX BIKE LANES - Bike lanes on 4.5 miles of Central Avenue from Jefferson St. to Baseline Rd. And construction of a Gateway at the Central Avenue Bridge.	\$500,000	Phoenix	1997
ASU SPENCE AVE. BIKE PATH - 610 feet of bicycle path on Spence Ave. from Rural Road to McAllister Mall	\$67,288	Arizona State University	1997

TRANSPORTATION ENHANCEMENT PROJECTS (1993 - 2006)

PROJECT DESCRIPTION	AMOUNT FUNDED	RECIPIENT	YEAR
MARICOPA COUNTY USURY RD. BIKE PATH - Six miles of bike path on Usury Rd. From Mesa City limits to Salt River Recreation Site at Bush Highway.	\$300,000	Maricopa County	1997
GUADALUPE - CALLE MAGDALENA PEDESTRIAN PATH -1,100 foot pedestrian path on Calle Magdalena from Avenida Del Yaqui to Calle Maravilla	\$180,000	Guadalupe	1997
LITCHFIELD PARK BIKE PATH - 1,386 feet of bike path	\$140,000	Litchfield Park	1997
ARIZONA DEPT. OF ADMINISTRATION 17 th Avenue Pedestrian Improvements	\$500,000	State of Arizona	1997
ARIZONA DEPT. OF TRANSPORTATION -Electronic Archive of archaeological and cultural information	\$223,721	ADOT	1997
PASEO MULTI-USE PATH - Construct a 12-foot-wide multi-use path and equestrian trail along the Consolidated Canal from Galveston St. to Pecos Rd. In Chandler. The 1.5 mile path will be for walking, jogging, roller-blading, biking and horseback riding. It will be part of a 6.5-mile trail system that will extend from Galveston St. to Riggs Rd.	\$500,000	Chandler	1998
CONSOLIDATED CANAL PATHWAY - Construct a 10-ft-wide bicycle/pedestrian path along the Consolidated Canal between 8 th St. and Meadowgreen Park.	\$500,000	Mesa	1998
DOWNTOWN PEDESTRIAN CONNECTION - Widen and connect sidewalks in a one-square-mile are of downtown Mesa and add street furniture, shade trees and public art.	\$481,503	Mesa	1998
WEST VALLEY MULTI-MODAL TRANSPORTATION CORRIDOR - Design the development of a 42-mile multi-use path along the New and Agua Fria Rivers from the town of New River to the Salt River	\$450,000	MAG	1998
MARICOPA FREEWAY ENHANCEMENT PROJECT - Restore and enhance nine underpasses along an elevated section of the Maricopa Freeway from 16 th St. to 19 th Ave. With improved lighting, safe walking and bicycling areas, and public art designed by students in adjacent schools.	\$400,000	ADOT / Phoenix	1998
HISTORIC CATLIN COURT SHARED USE ALLEYWAY - Redesign and enhance four existing alleyways for safe shared use by pedestrians and bicyclists; based on Dutch "woonerf". Includes undergrounding utilities, night safety lighting, realigning existing path to accommodate landscaping, seating walls and niches, public art alcoves, alley entry/exit features and shared alleyway etiquette and directional signage.	\$498,000	Glendale	1999
FQ STORY HISTORIC DISTRICT INTERSECTION WALKWAY - Enhance intersection and walkway safety through pedestrian crosswalks of eight foot wide red unit pavers to highlight crosswalks for pedestrians, bicyclists and motorists and historic street lighting. Matching funds provided entirely by F.Q. Story Preservation Association representing 600 homeowners.	\$213,746	Phoenix	1999
RIO SALADO/SCOTTSDALE PATHWAY LINK - Extends new multi-use paths 3/4 mile with decorative concrete, lighting, rest area ramadas, and visual enhancements for pedestrians under Loop 202. Prominent in developing Rio Salado. Critical connection for cyclists linking Indian Bend Wash and Grand Canal pathways.	\$500,000	Tempe	1999
CANAL MULTI-USE PATH -A 0.75 mile, 12' wide concrete path with landscaping, lighting and public art along Tempe Canal. Located in Apache Blvd. redevelopment area.	\$500,000	Tempe	1999
PASEO PROJECT PHASE THREE - 10' wide concrete multi-use path along the Consolidated Canal from Ryan Road to Ocotillo Road (1.5 miles). Includes separated natural earth equestrian trail. Seating and rest areas every 1/4-mile along the path. Connects origins and destinations. Has license agreement with SRP.	\$500,000	Chandler	1999
THUNDERBIRD PASEO SHARED-USE PATH - 10' wide, 1,800' concrete shared use path across Thunderbird Paseo Park from the Marshall Ranch Foot bridge to the existing Paseo bicycle path which connects with the exiting Sweetwater asphalt path. This project completes the last major linkage in Glendale's 55 th Avenue bikeway route. It will improve safety and access, and eliminate a significant distance barrier for commuters and recreationalists. Aesthetically enhanced rest area facilities, landscaping and shade trees are included.	\$272,107	Glendale	1999
HERITAGE TRAIL (CHANDLER SEGMENT) - Heritage Trail is 4.5 miles of multi-use and equestrian trails designed to provide alternative access, passive recreation and open space. This segment is 1.5 miles and is part of a comprehensive trail system in Gilbert and links to Chandler and Mesa pathways. Provides an alternative transportation route for non-motorized transportation. Completion of this link and the Chandler segment will provide continuous access from Mesa to Chandler along the 18-mile length of the Consolidated Canal.	\$500,000	Gilbert	1999

TRANSPORTATION ENHANCEMENT PROJECTS (1993 - 2006)

PROJECT DESCRIPTION	AMOUNT FUNDED	RECIPIENT	YEAR
US 60 PEORIA GRAND AVE. PEDESTRIAN - CROSSINGS - Construct 4 pedestrian crossings across Grand Avenue at 83rd Avenue and Peoria Avenue to allow safe pedestrian access from the north and south sides of Grand Avenue. Refuge areas shall include landscaping, park benches, decorative brick paving, concrete, and lighting to match Old Town Peoria landscape. Encompasses approximately 2.5 acres.	\$449,133	ADOT/ Peoria	1999
PEORIA AVENUE TO GRAND AVENUE/ LOOP 101 TRAIL - In Peoria Rivers & Trails Plan, West Valley Multi-Modal Transportation Corridor Plan. Includes 1 mile multi-use path along New River from Peoria to Grand Avenue. Part of Sun Circle Trail. Connects origins and destinations.	\$376,760	Peoria	2000
BIKE BOX PROGRAM - Comprehensive bicycle rider traffic safety education program. Each bike box contains a step-by-step train the trainer manual, instructional equipment, safety videos, a helmet, children's worksheets, etc. necessary to conduct an effective safety class. Will be distributed throughout Glendale to schools and libraries by Glendale and Phoenix Children's Hospital. If successful, PCH will take the program statewide.	\$41,050	Glendale	2000
CONNECTIONS: CREATING PEDESTRIAN AMENITIES ON 7TH AVENUE - Between Indian School and Camelback. Develop a new bicycle/pedestrian landscape to connect commercial along 7 th Ave to residents. Includes bike/ped paths, shade trees and landscaping, activity surfaces, civic and commercial display areas, street furniture and public art. Extensive community collaboration (residents, business, ASU)	\$500,000	Phoenix	2000
HERITAGE TRAIL, MESA SEGMENT - 1.5-mile concrete path along Consolidated Canal. Part of a 4.5-mile system. Last remaining link on the Consolidated Canal to provide access from Brown Road in Mesa to Riggs Road in south Chandler, which is nearly the 18-mile length of the Consolidated Canal.	\$500,000	Gilbert	2000
SUN CIRCLE TRAIL AT GUADALUPE BRIDGE - Project will close gap over I-10. 10' path on a 290' addition and 1450' approaches, 800' retaining wall. Important connection for multi-use Sun Circle Trail.	\$797,080	ADOT/ Maricopa County	2000
HISTORIC RAILROAD STATION IN THE NEW GOODYEAR CITY CENTER - Acquire and move Old Litchfield Train Depot to Estrella Pkwy and Yuma Rd, future site of Town Center. Current owner wishes to sell to city. Is eligible for listing on National Register of Historic Places.	\$125,000	Goodyear	2001
2ND AVENUE BICYCLE, PEDESTRIAN & LANDSCAPING ENHANCEMENT - Improve the streetscape along 2 nd Ave. from Monroe to Fillmore by reducing street width; adding landscaping, wider sidewalks, street furniture, and historic street lighting. Connects Roosevelt Historic District to downtown Phoenix.	\$500,000	Phoenix	2001
COLDWATER PARK TO COMMUNITY PARK 2 AGUA FRIA CONNECTOR ROUTE - Two 12' wide under crossings at I-10 and Van Buren, two miles of safety railing along the west side of the Agua Fria, and a trail that crosses the Agua Fria River near McDowell Rd.	\$433,786	Avondale	2001
POWERLINE TRAIL MULTI-MODAL PATH - 10' path to provide access across SRP utility easement to link Eastern, Consolidated, Western and Roosevelt Conservation District Canals. Includes lighting, landscaping, drinking fountains, etc. Links origins and destinations.	\$500,000	Gilbert	2001
PRESERVING HISTORIC VISTAS/STATE ROUTE 202/TOVREA CASTLE - Acquisition of up to 24 acres to complete creation of historic park adjacent to Loop 202 and preserve historic vistas.	\$500,000	ADOT/ Phoenix	2001
US 60 MULTI-USE PATH - Demonstration project within US 60 in Wickenburg. 2.9 miles from Los Altos Drive to Sunset Park.	\$507,626	ADOT/ Wickenburg	2001
CAMELBACK CORE PEDESTRIAN ENHANCEMENT PROJECT - Enhance 2 intersections at 20 th Street and 24 th Street to promote bike and pedestrian use. Includes enlarged pedestrian/bike refuge areas and ramps to the crosswalks, shade structures, way-finding markers at intersections, new "pedestrian countdown" traffic signals.	\$392,491	Phoenix	2002
GLENDALE'S BICYCLE/PEDESTRIAN REST AREA - Rest area for bicyclists & pedestrians at 43 rd and Peoria Avenues. Includes decorative walkways and seating areas, shade, landscaping, drinking fountains, water feature. Near multi-use paths and underpass.	\$336,826	Glendale	2002
GUADALUPE ROAD (1-10 TO TEMPE LIMITS) - Construct concrete curb and gutter with bike lanes (both sides) and sidewalk (north side) and trail (south side) of Guadalupe Rd. Completes Sun Circle Trail link from Highline Canal to I-10 bridge crossing. Also includes landscaping and irrigation.	\$471,500	Guadalupe	2002
CANAL CROSSING PROJECT - Install 4 AASHTO approved bridges along the Consolidated (Heritage Trail) and Eastern (Santan Vista Trail) Canals. Will improve connectivity to neighborhoods and safety.	\$180,000	Gilbert	2002

TRANSPORTATION ENHANCEMENT PROJECTS (1993 - 2006)

PROJECT DESCRIPTION	AMOUNT FUNDED	RECIPIENT	YEAR
BICYCLE LANES ON SR 87 (ARIZONA AVE.) SOUTH OF OCOTILLO RD. TO HUNT HWY.– Extend bike lanes. Bike lanes exist already to Ocotillo Rd. Existing roadway is in milled condition, creating a rough surface for cyclists. Connects to origins and destinations, and to paths on Consolidated Canal.	\$440,803	ADOT/City of Chandler	2002
2ND AVENUE: FILLMORE TO ROOSEVELT PEDESTRIAN AND LANDSCAPE ENHANCEMENTS– Continue TE funded project along 2 nd Avenue. Includes landscaping, new sidewalks, street furniture and lighting. New improvements will meet ADA.	\$500,000	Phoenix	2003
PEDESTRIAN SCHOOL SAFETY ZONES PROJECT – Phase I – Provide pedestrian improvements at high-risk school crosswalks. At 10 sites, provide countdown pedestrian signals. At 10 sites, provide speed monitor radar units. At two sites, narrow road crossing length by providing pedestrian refuge islands. Sites will be selected based on engineering analysis and community and school input.	\$500,000	Phoenix	2003
ARCADIA PORTAL - PAPAGO MULTI-USE CANAL TRAIL ENHANCEMENT Improves safety and amenities for pedestrians and bicyclists and completes a critical link of the Papago Trail, spanning Phoenix, Scottsdale and Tempe.	\$500,000	Phoenix	2004
HISTORIC STREETLIGHT RESTORATION PROJECT - The restoration of over a hundred historic concrete and metal streetlights in three Historic Neighborhood Districts located in central Phoenix.	\$328,133	Phoenix	2004
TEMPE BIKE STATION AT THE DOWNTOWN TRANSIT CENTER - An attended, indoor, secure bicycle parking facility that includes service amenities. The Bike station concept is an integral part of the Downtown Tempe Transit Center. 2,000 sf. of the 20,000 sf. Downtown Tempe Transit Center will be dedicated to the Bike Station Concept.	\$500,000	Tempe	2004
OLD ROMA ALLEY PEDESTRIAN ENHANCEMENTS AND LANDSCAPE BEAUTIFICATION Transforms an existing service alley in downtown Glendale into an attractive, pedestrian-friendly walkway and green space. It contains a 170' long and 20' wide walkway connecting the Old Town retail district to civic areas.	\$500,000	Glendale	2004
CYCLE TO THE SALT - Adds a bicycle lane on both sides of the Bush highway from Usery Path Road to Stewart Mountain Dam Road. Construction provides an additional 10' (5' of paved shoulders on both sides) of area for 4.6 miles, and adds 3 left turn lanes into the Salt River recreational sites.	\$500,000	Maricopa County	2005
CROSSCUT CANAL MULTI-USE PATH PHASE II - A one-mile, non-motorized path facility that will connect to the recently completed, award-winning 1.25 mile Crosscut Canal Multi-Use Path (Phase I). Includes a paved path facility, landscaping, lighting, the construction of 3 bridges over the canal, and a public art element.	\$500,000	Tempe	2005
CROSSCUT CANAL MULTI-USE PATH: THOMAS ROAD TO INDIAN SCHOOL ROAD- Design and construction of a 10' to 12' path along the east bank of the Crosscut Canal (approximately 64 th St.) from Thomas to Indian School Roads. Provides improved path links to Tempe and Phoenix. Includes ADA ramps, lighting, landscaping, benches, and signage.	\$500,000	Scottsdale	2005
City of Avondale Pedestrian Safety Education Program - Will allow the city to procure materials and equipment to implement a pedestrian safety education program.	\$11,316	Avondale	2006
South Mountain Community College Pedestrian Crossing - This project will provide a 40-foot long by 10' wide pedestrian bridge over the Western Canal linking the South Mountain Community College, the Legacy Village Shopping Center, and the Arizona Agribusiness Equine Science Center. Located near the intersection of 24th street and Baseline Rd. Also includes a crosswalk, landscaping, and ADA ramp.	\$491,151	Phoenix	2006
Grand Canal Pedestrian Pathway Between Loop 101 and N. 107th Avenue - The Grand Avenue Canal is a 10' wide, 1.3 mile long Multiuse path to be built along the existing canal maintenance roads on the W. Bethany Home Rd. alignment, between Loop 101 and North 107th Avenue. Includes pedestrian and bicycle amenities, lighting and landscaping. This project is the link in Western Glendale's trail system.	\$500,000	Glendale	2006
Gilbert Heritage District Downtown Pedestrian Project - Will improve pedestrian access in Gilbert's downtown Heritage District by installing a total of 1.25 miles of 6' wide, ADA-compliant concrete sidewalks and shade trees north of Elliot Road, between Gilbert Road and North Oak Street. Provides linkages between downtown destinations, including a park-and-ride lot, the Gilbert Senior Center and the Boys and Girls Club. Existing sidewalks are inadequate, and the project will enhance safety and connectivity. Also includes benches, bike racks, trash receptacles and signage.	\$500,000	Gilbert	2006

TRANSPORTATION ENHANCEMENT PROJECTS (1993 - 2006)

PROJECT DESCRIPTION	AMOUNT FUNDED	RECIPIENT	YEAR
US 60 Multi-Use Path - Involves the construction of a 10' wide, multi-use path within the right-of-way of US 60 within the Town of Wickenburg, from the Vulture Mine Road crossing to Los Altos Drive, a distance of 1.4 miles. Phase II of the original master plan for pedestrian access from the Town Core to Sunset Park. Includes landscaping (seeding) and signage.	\$855,708	Wickenburg/	2006
Total Funds Awarded: 1993 - 2006	\$25,515,057		