2008 ANNUAL REPORT

on the status of the implementation of

MARICOPA ASSOCIATION of GOVERNMENTS

October 2008

PROPOSITION 400

REGIONAL TRANSPORTATION PLAN
MARICOPA ASSOCIATION of GOVERNMENTS

PLANNING PUBLIC INVOLVEMENT ACTION

ON THE MOVE
PARTNERS IN PROGRESS

Maricopa Association of Governments

2008 ANNUAL REPORT ON THE STATUS OF THE IMPLEMENTATION OF PROPOSITION 400

October 2008

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SUMMARY OF FINDINGS AND ISSUES

The *Draft 2008 Annual Report on the Status of the Implementation of Proposition 400* has been prepared by the Maricopa Association of Governments (MAG) in response to Arizona Revised Statue (ARS) 28-6354. ARS 28-6354 requires that MAG annually issue a report on the status of projects funded through Proposition 400, addressing project construction status, project financing, changes to the MAG Regional Transportation Plan, and criteria used to develop priorities. In addition, background information is provided on the overall transportation planning, programming and financing process. The key findings and issues from the 2008 Annual Report are summarized below.

MAG REGIONAL TRANSPORTATION PLAN

The MAG Regional Transportation Plan (RTP) provides the blueprint for the implementation of Proposition 400. By Arizona State law, the revenues from the half-cent sales tax for transportation must be used on projects and programs identified in the RTP adopted by MAG. The RTP identifies specific projects and revenue allocations by transportation mode, including freeways and other routes on the State Highway System, major arterial streets, and public transportation systems.

- The Update of the Regional Transportation Plan Update was postponed to FY 2009.

  During FY 2008, a decision was made to postpone the update of the RTP until FY 2009. This was due to uncertainties regarding Federal policies for programming CMAQ funds and the completion date of a cost review of the Freeway/Highway Life Cycle Program. It is anticipated that the 2009 RTP Update will be developed consistent with the usual planning and programming cycle during FY 2009.

- A revised Freeway/Highway Acceleration Policy was adopted.

  On February 27, 2008, the MAG Regional Council adopted a revised MAG Highway Acceleration Policy. This revision will replace the policy adopted in March 2000, and includes improvements and clarifications that bring the policy in line with Proposition 400, resulting in a more effective process.

- The study findings from the Interstate 10 / Hassayampa Valley Transportation Framework Study were accepted.

  On February 27, 2008 the MAG Regional Council accepted the findings of the Interstate 10 / Hassayampa Valley Transportation Framework Study. While the study the recommendations are not funded, the action to accept the

study's findings allow the planning process to move forward in an illustrative manner. This will provide guidance to MAG and the affected agencies in the Hassayampa Valley for future activities, including updates to the Regional Transportation Plan.

- The study findings from the MAG Commuter Rail Strategic Plan were accepted.

  On April 23, 2008, the MAG Regional Council accepted the findings of the MAG Commuter Rail Strategic Plan. The action by the Regional Council included accepting the findings of the Commuter Rail Strategic Plan as the guiding implementation framework for commuter rail. At this time, the RTP does not include funding to build and operate commuter rail in the MAG region.

HALF-CENT SALES TAX AND OTHER TRANSPORTATION REVENUES

The half-cent sales tax for transportation approved through Proposition 400 is the major funding source for the MAG Regional Transportation Plan (RTP), providing over half the revenues for the Plan. In addition to the half-cent sales tax, there are a number of other RTP funding sources, which are primarily from State and Federal agencies.

- Fiscal Year 2008 receipts from the Proposition 400 half-cent sales tax were 3.1 percent lower than receipts in FY 2007.

  During FY 2008, receipts from the Proposition 400 half-cent sales tax for transportation totaled $379 million. This amount is 3.1 percent lower than the receipts from the half-cent tax in FY 2007, which totaled $391 million. This represents the first decline in year-over-year revenues in the history of the half-cent sales tax for transportation since its inception in 1985.

- Forecasts of Proposition 400 half-cent revenues are 2.7 percent lower for the period FY 2009 through FY 2026, compared to the 2007 Annual Report.

  Future half-cent revenues for the period FY 2009 through FY 2026 are forecasted to total $13.7 billion. This amount is 2.7 percent lower than the forecast for the same period presented in the 2007 Annual Report. ADOT will update the half-cent forecasts in the latter part of calendar 2008, taking into account recent slowing in revenue collections as appropriate.

- Forecasts of total ADOT Funds dedicated to the MAG area for FY 2009 through FY 2026 are unchanged from the 2007 Annual Report estimate.

  The forecast for ADOT funds totals $7.4 billion for FY 2009 through FY 2026, which is unchanged from the 2007 Annual Report forecast. This funding

source represents nearly one-half of the total funding for the Freeway/Highway Life Cycle Program.

- Forecasts of total MAG Federal Transportation Funds for FY 2009 through FY 2026 are unchanged from the 2007 Annual Report estimate.

  MAG Federal Transportation Funds for FY 2008 through FY 2026 are forecasted to total $5.3 billion. This estimate is unchanged from the amount projected in the 2007 Annual Report. These funding sources have been allocated to arterial street, transit and highway projects in the Regional Transportation Plan.

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM

The Freeway/Highway Life Cycle Program extends through FY 2026 and is maintained by the Arizona Department of Transportation (ADOT) to implement freeway/highway projects listed in the MAG Regional Transportation Plan (RTP). The program utilizes funding from the Proposition 400 half-cent sales tax extension, as well as funding from State and Federal revenue sources.

- The final segment in the Proposition 300 - Regional Freeway Program was completed.

  The Red Mountain Freeway (Loop 202) was completed between University Dr. and Power Rd. This segment was under construction during FY 2008 and opened to traffic on July 21, 2008. This project represents the final segment in the Proposition 300 - Regional Freeway Program.

- A number of major freeway/highway construction projects were completed, underway, or advertised for bids during FY 2008.

Completed

- Higley Rd./US 60: T.I. improvements.
- 43rd Ave.-51st Ave./I-10: T.I. improvements.
- Dixileta Dr./I-17: New T.I.
- Bullard Ave./I-10: New T.I.
- Bethany Home Rd./Loop 101: New T.I.

Under Construction

- Carefree Hwy./I-17: T.I. improvements.
- Jomax Rd./I-17: New T.I.
- 64th St./101L: New T.I.
- I-10 (101L to Sarival Ave): New HOV and general purpose lanes.
- I-10 (SR 143 to US 60): WB auxiliary lane.

- I-17 (101L to Jomax Rd.): New HOV and general purpose lanes.
- I-17 (Jomax Rd. to SR 74): New HOV and general purpose lanes.
- SR 51 (Shea Blvd. to Loop 101): New HOV lanes, including HOV ramp connections at Loop 101.
- Loop 101 (Princess Dr. to Red Mountain Fwy.): New HOV lanes.
- SR 85 (MC 85 to Southern Ave. and MP 139.01 to 141.71): Widen to four lanes.
- SR 87 (Forest Bndry. to New Four Peaks Rd.): Road improvements.
- SR 93 (Wickenburg Bypass): New roadway.

Advertised for Bids

- US 60 (I-10 to Loop 101): New general purpose lanes.
- Loop 101 (Tatum Blvd. to Princess Dr.): New HOV lanes.
- Loop 101/Thunderbird Rd.: T.I. improvements.
- Loop 101 (202L/Red Mt. Fwy. To 202L/Santan Fwy.): New HOV lanes.
- Loop 202 (Mill Ave. and Washington St.): Bridge widening.
- Loop 202 (SR 51 to 101L): Design-build freeway widening.
- Loop 303 (Cactus Rd., Waddell Rd., and Bell Rd.) T.I. structures.

- Material cost increases were experienced for a number of FY 2008 projects and projects in the FY 2009-2026 Life Cycle Program.

  During FY 2008, the MAG Regional Council approved cost increases identified by ADOT and MAG totaling $22 million for freeway/highway projects that were programmed for FY 2008. It was determined that the cost increases could be accommodated within available cash flow. Also, cost increases for certain projects in FY 2009-2026 Life Cycle Program totaled $214 million.

- Based on unadjusted costs, the estimated future costs for the Freeway/Highway Life Cycle Program are in balance with projected revenues.

  Funding available for use on freeway and highway projects through FY 2026 has been estimated to total $10.3 billion (2008 $'s). The estimated future costs identified in the Life Cycle Program for the period covering FY 2009 through FY 2026 total $10.0 billion. Therefore, the estimated future costs are in balance with the projected future funds available, with available funds exceeding costs by $264 million.

  However, it is important to note that these project costs are currently being updated and revised. These cost revisions indicate that the Freeway/Highway Life Cycle Program will require major adjustments in

order to achieve a balance between estimated costs and projected revenues during the life cycle period.

- ADOT and MAG are cooperatively evaluating the impacts of construction cost increases and project scope changes on the cost, scheduling and delivery of the Freeway/Highway Life Cycle Program.

  A Cost Estimate Assessment is underway to analyze the current status of the RTP Freeway Program including the following items:

  - Evaluation of the growth in construction and right-of-way costs between 2003 and 2008, and future trends for these project costs.

  - Evaluation of project costs to determine how these costs have increased since the inception of the RTP Freeway Program.

  - Determination of the portion of additional costs attributable to recent escalation of costs for construction labor, materials and right-of-way acquisition.

  - Evaluation of freeway projects to determine if cost increases occurred due to unforeseen conditions (scope changes) resulting from updated design concept reports and expanded environmental studies.

  - Updating RTP Freeway Program costs for each project based upon refined project requirements and updated construction and right-of-way costs.

  The results of this evaluation will provide the cost and schedule data to evaluate potential adjustments to the RTP Freeway program.

- The Freeway/Highway Life Cycle Program will potentially require major revisions in order to achieve a balance between estimated costs and projected revenues during the life cycle period.

  Two factors -- price inflation and detailing of project scopes -- have resulted in a significantly higher total cost for the Freeway/Highway Life Cycle Program. ADOT and MAG are reviewing the Life Cycle Program in light of higher construction costs and additions to original project scopes. The new preliminary estimated program cost totals $14.9 billion (2008 $'s). This compares to a 2003 planning estimate of $9.4 billion ($8.5 billion without contingency allowance). Funding available for construction over the full life cycle program period is currently estimated to total $11.6 billion. Therefore, the new program estimate exceeds available funding by approximately $3.3 billion. This difference could be subject to future increases, depending on the

outlook for inflation, facility design contingencies, further cost estimate refinements, and updated revenue forecasts.

It is estimated that the new total program cost of $14.9 billion consists of approximately the following components:

- $8.5 billion: 2003 planning cost estimate (without contingency allowance).

- $3.7 billion: Inflation 2003-2008.

- $2.7 billion: Scope detailing (includes original contingency allowance plus additional scope enhancements).

Given the potential deficit of approximately $3.3 billion for the Freeway/Highway Life Cycle Program, a major effort to achieve a balance between future program costs and available revenues will be required. This effort would include effective financing and cash flow management, phasing of project scopes, and plan and program adjustments as may be appropriate. Assumptions regarding future inflation and design contingencies also warrant thorough review, in view of the potential for continuing construction cost increases.

Potential approaches to achieving program balance could include: enhanced financing methods, project phasing, extension of the programming period, and adjustment of project schedules.

ARTERIAL STREET LIFE CYCLE PROGRAM

The Arterial Street Life Cycle Program (ALCP) extends through FY 2026 and is maintained by the Maricopa Association of Governments (MAG) to implement arterial street projects in the MAG Regional Transportation Plan (RTP). The Program receives major funding from both the Proposition 400 half-cent sales tax and Federal highway programs. 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 level revenues. MAG provides the regional share of the funding on a reimbursement basis.

- <u>The Arterial Street Life Cycle Program Policies and Procedures and Project Listing were updated during FY 2008.</u>

  On December 19, 2007, MAG adopted changes to the Arterial Life Cycle Program Policies and Procedures to facilitate efficient administration of the

Program. In addition, on June 25, 2008 the FY 2009 ALCP project listing was adopted to reflect updated information regarding project development status.

- During FY 2008, $28 million in reimbursements were distributed to local governments from the Arterial Street Life Cycle Program, and work is continuing for reimbursements in FY 2009.

  Five jurisdictions received reimbursements for project work during FY 2008 totaling over $28 million. This brings the total reimbursements to $50 million since the initiation of the Program. A total of eight project agreements were executed in FY 2008. This brings the total of project agreements executed to date to 26. It is anticipated that an additional 17 agreements will be executed during FY 2009. During FY 2009, it is anticipated that a total of six jurisdictions will receive reimbursements amounting to approximately $119 million.

- Work will be proceeding on a broad range of projects in the Arterial Street Life Cycle Program.

  During the period FY 2009 through FY 2013, work will be proceeding on 104 different arterial street segments. Various stages of work will be conducted on these projects, including 79 with design activity, 80 with right-of-way acquisition, and 81 with construction work at some time during the five-year period.

- The total estimated future regional revenue disbursements for Arterial Street Life Cycle Program projects are in balance with projected revenues.

  For the remainder of the Arterial Street Life Cycle Program, which covers the period FY 2009 through FY 2026, projected revenues are in balance with estimated future projects disbursements, with revenues exceeding costs by approximately ten percent through FY 2026. Since the ALCP is based on the principle of project budget caps, with a fixed amount of regional funding allocated to individual projects (on an inflation adjusted basis), it is anticipated that the balance between estimated future disbursements and projected revenues can be maintained in the future.

- Project implementing agencies have deferred $46 million in Federal and regional funding from FY 2008 to later years.

  Cost pressures and other implementation issues have resulted in the deferral of arterial projects by implementing agencies, due to the inability to provide matching funds, or other scheduling and resource issues. Lead agencies have deferred $46 million in federal and regional funding from FY 2008 to later years. It is anticipated that project scope changes and rescheduling may

continue to occur in the future, as local jurisdictions continue to face a variety of fiscal issues.

- MAG staff has developed Draft MAG Federal Fund Programming Principles that will help guide the FY 2009 programming process.

  During FY 2008, MAG staff has continued to work closely with ADOT and member agencies to document and improve the review process for projects receiving Federal funds. MAG has developed Draft MAG Federal Fund Programming Principles that will help guide the FY 2009 programming process. The purpose of the Principles is to establish a transparent set of programming principles that clarify the application and programming process and ensure consistency with Federal Regulations.

TRANSIT LIFE CYCLE PROGRAM

The Transit Life Cycle Program is maintained by the Regional Public Transportation Authority (RPTA) and implements transit projects identified in the MAG Regional Transportation Plan. The RPTA maintains responsibility for administering half-cent sales tax revenues deposited in the Public Transportation Fund for use on transit projects, including light rail transit (LRT) projects. Although RPTA maintains responsibility for the distribution of half-cent funds for light rail projects, the nonprofit corporation of Valley Metro Rail, Inc. was created to oversee the design, construction and operation of the light rail starter segment, as well as future corridor extensions planned for the system.

- Bus service improvements continue on schedule.

  New express and local/supergrid services continue to be implemented on schedule, despite the recent decline in excise tax revenues. Every effort has been made to ensure that the implementation schedule for services is not impacted by the downturn in the economy, especially given that transit demand has increased significantly due to the increase in gas prices. However, if revenues continue to decline, service implementation may be impacted in the future. Additionally, services that have been implemented will be reviewed to ensure that productivity goals are met. Unproductive services will be analyzed in detail to determine whether they should be modified, reduced or eliminated.

- Work is continuing on schedule on the construction of the Light Rail Minimum Operating Segment (MOS).

  This facility will extend from Spectrum Mall to west Mesa. Construction and system testing and start-up are scheduled to be completed in 2008. Service is scheduled to begin for the entire system on December 27, 2008. Half-cent sales tax money from Proposition 400 will not be utilized to pay for major

route construction or operation of the MOS, but is allocated toward certain elements of the support infrastructure (regional park-and-rides, bridges, vehicles, and for the cost to relocate utilities).

- RPTA continued planning studies in FY 2008.

  The RPTA has a number of bus planning studies underway that will help define project and service concepts in greater detail and provide improved future cost estimates. The timely completion of these planning efforts will be essential for the continued implementation of regionally funded transit service.

  The Main Street Bus Rapid Transit (BRT) design study was substantially completed. The construction is being bid out and is not expected to be completed by the beginning of service operations in December 2008. The service will begin to coincide with the opening of the MOS light rail operations. Temporary stops/stations will be used in the interim. RPTA has submitted a "Very Small Starts" application to the Federal Transit Administration (FTA) for federal funding of this project.

  RPTA continues work on the Arizona Avenue Design Concept Report and the Comprehensive Arterial BRT Study. Arizona Avenue will be the second BRT line implemented under the RTP. Service on this line is scheduled to begin in FY 2011. RPTA will be submitting a Very Small Starts application to the FTA for federal funding for this project in 2009. The Comprehensive Arterial BRT Study will define the operational parameters of the arterial BRT network. It will also define how the system will integrate with Supergrid, fixed route bus, and LRT service to maximize the operational efficiencies of these transit networks.

- Valley Metro Rail Planning continued with necessary planning studies to implement future LRT service.

  The LRT Configuration Study will evaluate the operational characteristics and needs of the full 57.7 mile LRT system identified in the Regional Transportation Plan. Phase I of the study was completed in 2007. Phase II of the study began in February 2008. Phase II includes modeling for the candidate corridors to estimate ridership and assess the cost effectiveness.

  The Glendale Extension Study has compiled a notebook with three alignment options for the Glendale LRT extension identified in the RTP. The alignment options being evaluated include service from I-10 to the stadium complex north of Bethany Home Road, service to downtown Glendale, or service to the ASU west campus on Thunderbird Avenue. The affected cities are reviewing the technical information.

The Alternatives Analysis (AA) for the Central Mesa Extension, the I-10 West Extension and the Tempe South Extension are in progress.

- Estimated future costs for the Transit Life Cycle Program are in balance with projected revenues.

  For the remainder of the Transit Life Cycle Program, which covers the period FY 2009 through FY 2026, projected revenues are in balance with future projects costs but with very little left at the end of the program. Several capital projects were eliminated, including the vanpool maintenance facility, the rural bus maintenance facility and the Phoenix dial-a-ride maintenance facility. Additionally, many of the contingencies in the program were eliminated or reduced in order to ensure that revenues exceeded expenditures. Costs continue to rise faster than anticipated and revenues are not expected to keep pace, at least in the short term.

- Transit service and capital cost increases will represent an ongoing challenge for the Transit Life Cycle programming process.

  Given recent trends of escalating wages and fuel prices, pressure will increase to balance operations costs with available revenues. Similarly, recent increases for right-of-way and construction materials will continue to drive up costs for transit capital facilities, as they have in the freeway and arterial programs. Costs for the Transit Life Cycle Program will need to be evaluated on a continuing basis as the program is implemented, and program adjustments made as warranted in order to maintain the cost/revenue balance.

  RPTA will be examining closely the assumptions used in estimating both revenues and expenditures for the Transit Life Cycle Program during FY 2009. The issues include inflation assumptions, federal revenue estimates, bus fare revenue estimates, service costs and contingencies. If transportation excise tax revenue estimates decline, it is likely that service implementation will be affected. Financing for capital projects is assumed in the program, however the cost of borrowing will be considered carefully against the cost of delaying capital facilities construction to ensure that funds are expended appropriately.

- The outlook for Federal discretionary funding for transit will require continuous monitoring.

  A large part of the funding for the LRT system extensions and for bus purchases is assumed to be from awards by the US Department of Transportation through the discretionary program. This funding is over-and-above the Federal funding contained in the 20-mile starter system Full Funding Grant Agreement. The timing and amounts of light rail transit New

Start monies coming to the MAG region will be subject to a highly competitive process at the federal level. The prospects for awards from this program will require careful monitoring. Discretionary funding for the bus capital program is also highly competitive and the assumptions in the Transit Life Cycle Program will be reviewed carefully to ensure they are not overly aggressive. The pending reauthorization of SAFETEA-LU will also impact when and how FTA funding flows to the region.

PERFORMANCE MONITORING PROGRAM

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.

- <u>During FY 2008, MAG initiated the Performance Measurement Framework consultant study for the regional roadway network.</u>

  In June 2008, MAG initiated the Performance Measurement Framework consultant study to further refine and focus the performance monitoring approach for the regional roadway network. Based on the findings of this study and input from the Transit Performance Report, it is anticipated that MAG will annually produce a Transportation System Monitoring and Performance Report.

CHAPTER ONE

INTRODUCTION

Proposition 400 was passed by the voters of Maricopa County on November 2, 2004, authorizing a 20-year extension of a half-cent sales tax for transportation projects in Maricopa County. The extension was initiated on January 1, 2006 and will be effective through December 31, 2025. The half-cent tax was originally approved by the voters in 1985 through Proposition 300.

Arizona Revised Statue (ARS) 28-6354 requires that the Maricopa Association of Governments (MAG) annually issue a report on the status of projects funded through Proposition 400. MAG produced the first *Annual Report on the Status of the Implementation of Proposition 400* in 2005 and will produce an updated report yearly during the life of the tax. The annual reporting process addresses project construction status, project financing, changes to the MAG Regional Transportation Plan (RTP), and criteria used to develop priorities. In addition, information is provided on the overall transportation planning, programming and financing process.

The Annual Report addresses project status and tabulates expenditures through the fiscal year ending June 30th. In addition, the overall program outlook through FY 2026 for each transportation mode is reviewed, with an emphasis on the balance between projected costs and forecasted revenues. All projects for the major transportation modes (freeways/highways, arterial streets, public transit), as defined in the RTP, are monitored, whether they specifically receive half-cent funding or not. This ensures that progress on the entire RTP is monitored and trends for all revenue sources are tracked. Any amendments to the RTP are also identified as part of the annual reporting process. A database of RTP projects by mode is maintained to track costs, expenditures and accomplishments on a continuing basis.

The following 2008 Annual Report covers progress through the fiscal year ending June 30, 2008, and reviews the program outlook through June 30, 2026.

CHAPTER TWO

PROPOSITION 400 LEGISLATION

Proposition 400 was enabled by House Bill 2292 and House Bill 2456, which were signed by the Governor of Arizona on May 14, 2003 and on February 5, 2004, respectively. These two pieces of legislation were enacted to guide the process leading up to the Proposition 400 election on November 2, 2004 and establish the features of the half-cent tax sales extension. Key elements of House Bills 2292 and 2456 are described below.

2.1 HOUSE BILL 2292

Arizona House Bill 2292, which was passed during the Spring 2003 session of the Arizona Legislature, recognized MAG's establishment of a Transportation Policy Committee (TPC). The TPC, which was tasked with the development of the Regional Transportation Plan (RTP), is a public/private partnership and consists of 23 members. Seventeen seats are from the membership of MAG and six are members who represent region-wide business interests. The MAG members include 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, as well as 13 representatives from a geographic cross-section of MAG cities and towns. The bill required the TPC to develop the RTP in cooperation with the Regional Public Transportation Authority (RPTA) and ADOT, and in consultation with the County Board of Supervisors, Native American Indian Communities, and cities and towns in the County.

The legislation identified the consultation process to be followed by the TPC in developing the RTP, and established a formal procedure for reviewing the Draft Plan. This included reviews at the alternatives stage and final draft stage of the planning process. As part of this process, the TPC was required to vote on, and provide written responses to, individual agency comments on the Draft Plan. After this extensive review and consultation process, the TPC was required to recommend a Plan to the MAG Regional Council for final approval.

Arizona House Bill 2292 also set forth the factors to be considered during the development of the RTP, such as the impact of growth on transportation systems and the use of a performance-based planning approach. It identified key features required in the final Plan, including a twenty-year planning horizon, allocation of funds between highways and transit, and priorities for expenditures. This legislation also established the process for authorizing the election to extend the existing half-cent county transportation excise tax. This existing tax was originally approved by Maricopa County voters under Proposition 300 in October 1985 and expires on December 31, 2005.

In addition, House Bill 2292 contained the requirement that MAG issue an annual report on the status of projects funded through the half-cent sales tax for transportation. This includes a public hearing within thirty days after the report is issued. Specific items to be addressed in the annual report cover the status of projects, changes to the RTP, changes to corridor and corridor segment priorities, project financing and project options, and criteria used to establish priorities.

2.2 HOUSE BILL 2456

House Bill 2456 was passed by the Arizona Legislature and signed by the Governor of Arizona in February 2004. This legislation authorized the election to extend the half-cent sales tax for transportation, known as Proposition 400, which was placed on the November 2, 2004 ballot by the Maricopa County Board of Supervisors. In addition to calling the election, this legislation included a number of requirements regarding the nature of the tax extension and its administration. Several of the key provisions are reviewed below.

2.2.1 Revenue Distribution

House Bill 2456 addresses the allocation of revenues from the collection of sales tax monies from January 1, 2006, to December 31, 2025, among the eligible transportation modes. In accordance with the legislation, the net revenues collected are to be distributed as follows:

- 56.2 percent to the regional area road fund for freeways and other routes in the State Highway System, including capital expense and maintenance.

- 10.5 percent to the regional area road fund for major arterial street and intersection improvements, including capital expense and implementation studies.

- 33.3 percent to the public transportation fund for capital construction, maintenance and operation of public transportation classifications, and capital costs and utility relocation costs associated with a light rail public transit system.

2.2.2 Revenue Firewalls

The legislation creates three “firewalls”, which prohibit the transfer of half-cent funding allocations from one transportation mode to another. These firewall divisions correspond to the categories established for the distribution of revenues and include:

- Freeways and highways (including sub-accounts for capital and maintenance).

- Arterial streets.

- Public transportation (with sub-accounts for capital, maintenance and operations, and light rail).

- Half-cent revenues cannot be moved among transportation modes (freeway/highway, arterial and transit).

2.2.3 Five-Year Performance Audit

As specified in House Bill 2456, beginning in 2010 and every fifth year thereafter, the Auditor General shall contract with a nationally recognized independent auditor with expertise in evaluating multimodal transportation systems and in regional transportation planning, to conduct a performance audit of the Regional Transportation Plan and all projects scheduled for funding during the next five years. The audit will make recommendations regarding whether further implementation of a project or transportation system is warranted, warranted with modification, or not warranted.

2.2.4 Major Amendment Process

House Bill 2456 recognized that the Regional Transportation Plan may be updated to introduce new transportation projects or to modify the existing plan. To ensure that the amendment process receives broad exposure and careful consideration, the concept of a major amendment was established. A major amendment of the Regional Transportation Plan means:

- The addition or deletion of a freeway, a route on the State Highway System, or a Fixed Guideway Transit System.

- The addition or deletion of a portion of a freeway; route on the State Highway System; or a Fixed Guideway Transit System that either exceeds one mile in length, or exceeds an estimated cost of forty million dollars as provided in the Regional Transportation Plan.

- The modification of a transportation project in a manner that eliminates a connection between freeways or fixed guideway facilities.

A major amendment is required if:

- An audit finding recommends that a project or system in the Regional Transportation Plan is not warranted, or requires a modification that is a major amendment.

- The MAG Transportation Policy Committee (TPC) recommends to the Regional Planning Agency a modification of the Regional Transportation Plan that is a major amendment.

The consideration and approval of a major amendment must adhere to a specific and rigorous consultation and review process set forth in the legislation. A major amendment requires that alternatives in the same modal category, which will relieve congestion and improve mobility in the same general corridor, are to be addressed. The TPC may recommend that funds be moved among projects within a mode, but half-cent revenues cannot be moved among transportation modes (freeway/highway, arterial and transit).

2.2.5 Life Cycle Programs

The legislation required that the agencies implementing the regional freeway, arterial, and transit programs are to adopt a budget process ensuring that the estimated cost of the program of improvements does not exceed the total amount of revenues available. These "life cycle programs" are the management tools used by the implementing agencies to ensure that transportation program costs and revenues are in balance, and that project schedules can be met. Responsibilities for maintaining these programs are as follows:

- Freeway/Highway Life Cycle Program: Arizona Department of Transportation.

- Arterial Life Cycle Program: Maricopa Association of Governments.

- Transit Life Cycle Program: Regional Public Transportation Authority.

The life cycle programs develop a schedule of projects through the life of the half-cent sales tax, monitor progress on project implementation, and balance annual and total program costs with estimated revenues. The MAG Annual Report draws heavily on life cycle program data and other life-cycle progress documentation.

2.2.6 Regional Transportation Plan: Enhancements and Material Changes

House Bill 2456 requires that any change in the Regional Transportation Plan and the projects funded that affect the MAG Transportation Improvement Program, including priorities, be approved by the MAG Regional Council. Requests for changes to projects funded in the Regional Transportation Plan that would materially increase costs are also required to be submitted to the MAG Regional Council for approval. If a local authority requests an enhancement to a project funded in the Regional Transportation Plan, the local authority is required to pay all costs associated with the enhancement.

CHAPTER THREE

REGIONAL ROLES AND RESPONSIBILITIES

The responsibility for implementing and monitoring projects and programs funded through Proposition 400 is shared by several regional and State entities. These organizations include:

- Maricopa Association of Governments.
- Transportation Policy Committee.
- Arizona Department of Transportation.
- State Transportation Board.
- Regional Public Transportation Authority.
- Valley Metro Rail.
- Citizens Transportation Oversight Committee.

A brief description of each agency and committee, and their role in implementing freeway/highway, arterial street and transit programs is provided below. It should be noted that local governments also design and construct projects covered in the regional arterial street program, and manage and operate elements of the bus transit system. These agencies are not discussed here.

3.1 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 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.

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

- Multi-modal Transportation Planning.
- Air Quality.

- Wastewater.
- Solid Waste.
- Human Services.
- Socioeconomic Projections.

MAG strives to develop plans that are comprehensive and that are consistent and compatible with one another. For example, the Regional Transportation Plan 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 Regional Transportation Plan and MAG Transportation Improvement Program. Any change in the Regional Transportation Plan or the projects funded that affect the Transportation Improvement Program, including priorities, must be approved by the MAG Regional Council.

3.2 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 and it was adopted unanimously 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 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.

3.3 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 the 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 Regional Transportation Plan. Although MAG is responsible for the development of the Arterial Street 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 Street Program.

3.4 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 Regional Transportation Plan and the MAG Transportation Improvement Program. 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 than what would be possible on a pay-as-you-go basis.

3.5 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 consisting of an elected official from each member jurisdiction. Membership is open to all municipalities in Maricopa County and to the County government. Currently, the 14 participating communities are Avondale, Chandler, El Mirage, Gilbert, Glendale, Goodyear, Mesa, Peoria, Phoenix, Scottsdale, Surprise, Tempe, Queen Creek, and Maricopa County. 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 Regional Transportation Plan and the MAG Transportation Improvement Program.

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 transit public information, 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 former amount of approximately two percent of total half-cent sales tax revenues ($5 million annually inflated), to a figure of over 33 percent, which will begin on January 1, 2006. Over the 20-year life of the half-cent sales tax as approved by Proposition 400, it is anticipated that approximately $5.0 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, identified in the MAG Regional Transportation Plan. 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.

3.6 VALLEY METRO RAIL

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

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 Regional Transportation Plan and the MAG Transportation Improvement Program

3.7 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 provides a special assistant to provide staff support to 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 Regional Transportation Plan, the Transportation Improvement Program, 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 Regional Transportation Plan.

CHAPTER FOUR

REGIONAL TRANSPORTATION PLAN

The MAG Regional Transportation Plan (RTP) provides the blueprint for the implementation of Proposition 400. By Arizona State law, the revenues from the half-cent sales tax for transportation must be used on projects and programs identified in the RTP adopted by MAG. The RTP identifies specific projects and revenue allocations by transportation mode, addressing freeways and other routes on the State Highway System, major arterial streets and intersection improvements, and public transportation systems. An overview of the RTP is provided below, including plan elements, priority criteria, and changes to the RTP during FY 2008.

4.1 PLAN OVERVIEW

The MAG Regional Transportation Plan (RTP) is a comprehensive, performance based, multi-modal and coordinated regional plan, covering all major modes of transportation, 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 and air quality conformity analysis.

4.1.1 Plan Development Process

The Regional Transportation Plan was developed through a comprehensive, performance-based process, consistent with State legislation. This process followed a specific methodology and evaluated the Plan relative to a range of performance measures. Through the application of computer modeling techniques, this process took into account the effects of population growth on travel patterns to identify future demand for transportation facilities. The steps in the process were: 1) goals and objectives, 2) needs assessment, 3) evaluation methodologies, 4) scenario evaluation, 5) scenario refinement, and 6) phasing and funding.

The transportation planning process also includes broad-based public input, which has been received as the result of an extensive public involvement process that included an aggressive public outreach effort. Public involvement meetings and events are held to accommodate citizens throughout the MAG Region. Additional input is also received through the MAG Web Site. In addition, MAG is committed to ensuring that communities of concern as defined and included in the Title VI Act of 1964, Executive Order 12898 addressing environmental justice, and other Federal directives are specifically considered during the transportation planning and programming process.

As required by the Clean Air Act, air quality conformity analyses are conducted on the RTP and the associated Transportation Improvement Program (TIP). Analyses are conducted on carbon monoxide, volatile organic compounds, and particulate matter (PM-10). These conformity analyses have demonstrated that the RTP and TIP are in conformance with regional air quality plans and will not contribute to air quality violations.

4.1.2 Freeway/Highway Element

The RTP calls for new freeway corridors, as well as improvements to existing freeways and highways. Operation and maintenance of the freeway/highway system are also addressed. All projects are on the State Highway System.

New Freeway/Highway Corridors: New corridors in the RTP add approximately 490 lane miles to the network and include: Loop 202/South Mountain Freeway, Loop 303 Freeway, State Route 801/I-10 Reliever Freeway, and State Route 802/Williams Gateway Freeway.

Freeway/Highway Widening and Other Improvements: These improvements include an additional 530 lane-miles of general-purpose lanes and 300 lane-miles of HOV lanes, covering essentially the entire existing freeway system. Improvements to US 60/Grand Avenue, State Route 85 and other State Highways are also funded. In addition to new travel lanes, additional interchanges with arterial streets on existing freeways are included, as well as improvements at freeway-to-freeway interchanges to provide direct connections between HOV lanes.

Freeway/Highway Maintenance, Operations, Mitigation and System-wide Programs: The RTP provides funding for maintenance of the freeway system, directed at litter pickup, landscaping, and noise mitigation. System-wide programs, such as freeway operations management, are also identified.

Freeway/Highway Priorities: The RTP includes the ADOT Freeway/Highway Life Cycle Program, which is a 20-year schedule of projects that implements the freeway/highway priorities identified in the RTP (see Chapter Six).

4.1.3 Arterial Street Element

The RTP includes a component for major arterial streets in the MAG Region. While MAG is responsible for developing the RTP, local jurisdictions are primarily responsible for design, right-of-way acquisition, construction and maintenance of arterial facilities as identified in the RTP.

New Arterial Facilities, Widening and Intersection Improvements: The RTP provides regional funding for widening existing streets, improving intersections, and constructing new arterial segments. As growth extends into new areas,

widening and extension of the arterial street network will be needed in order to keep up with growing traffic volumes. Congestion on the arterial street network is often caused by inadequate intersection capacity. The RTP calls for a number of intersection improvements, which enhance traffic flow and reduce congestion.

Intelligent Transportation System (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.

Arterial Street Priorities: The RTP includes the MAG Arterial Life Cycle Program, which is a 20-year listing of street projects that have been identified in the RTP for regional funding (see Chapter Seven).

4.1.4 Transit Element

The RTP calls for a range of transit facilities and services throughout the region. A regional bus network is included to ensure that reliable service is available on a continuing basis. In addition, light rail corridors are identified to provide a high-capacity backbone for the transit network. Other transit services are included to provide a full range of options, such as paratransit and rural transit service.

Regional Bus: Regional bus services include both arterial grid and express type services that are designed to provide regional connections. Regional bus service consists of three categories of service: Supergrid routes, which provide local fixed route service on the arterial street grid system; Arterial Bus Rapid Transit (BRT) Routes, which operate as express overlays on streets served by local fixed route service; and Freeway BRT Routes, which use freeways to connect remote park-and-ride lots with major activity centers. Funding for both capital and operating needs is identified in the RTP.

Light Rail Transit: The RTP includes a 57.7-mile Light Rail Transit (LRT) system, which incorporates the 20-mile minimum-operating segment (MOS) as designated in the Central Phoenix/East Valley Major Investment Study (MIS); a five-mile Northwest extension; 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. The technology on the latter segment has not been determined. Funding for LRT capital needs, only, is identified in the RTP. The RTP also provides for the continued investigation of commuter rail implementation strategies for the region.

Other Transit Services: Other transit services provided in the RTP include rural/non-fixed route transit, commuter vanpools, and paratransit transportation.

Transit Priorities: The RTP includes the RPTA Transit Life Cycle Program, which is a 20-year schedule of bus and light rail projects that implements the transit priorities identified in the RTP (see Chapter Eight).

4.1.5 Plan Funding

The half-cent sales tax for transportation is the major funding source for the MAG RTP. In addition, there are other funding sources from State and Federal agencies. These revenue sources, and the half-cent tax, have been termed regional revenues in the RTP. In addition to regional revenues, local governments provide certain funding allocations that support the implementation of the RTP. The regional revenue sources are discussed in detail in Chapter Five.

4.2 PRIORITY CRITERIA

Arizona Revised Statute 28-6354 B. directs MAG to develop criteria that 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. The discussion below describes how these kinds of criteria have been applied in the MAG regional transportation planning process, both for the development and the implementation of the Regional Transportation Plan (RTP).

4.2.1 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 for major street projects, including ITS elements.
- 30 percent for 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.

4.2.2 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.

4.2.3 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 Regional Transportation Plan. 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 area. 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 area.

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.

4.2.4 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 area 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 area. 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.

<u>Facility/Service Performance Measures:</u> 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

4.2.5 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.

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.

4.2.6 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.

4.3 REGIONAL TRANSPORTATION PLAN CHANGES AND OUTLOOK

The RTP is a long range plan for transportation improvements in the region, covering a period of over two decades. During a program of this length, inevitably, new information will be obtained and changing conditions will be faced as the implementation effort proceeds. As a result, the RTP and the MAG Transportation Improvement Program (TIP) must necessarily be updated periodically to reflect factors such as changes in costs, project schedules, and the outlook for future revenues.

4.3.1 System-Level Activities

No RTP Update in FY 2008: MAG has generally updated the RTP annually, even though Federal regulations allow metropolitan transportation plans to be updated only every four years. However, during FY 2008 there were certain factors that led to a decision to aim for an RTP update in FY 2009, and forego one in FY 2008. First, due to uncertainties regarding Federal policies for programming CMAQ funds, a fifth year (FY 2013) was not added to the FY 2008-2012 TIP. This TIP will be amended only as necessary to reflect project changes, and the process for development of a FY 2010-2014 will be initiated during FY 2009. Second, during FY 2008 ADOT conducted a comprehensive update of cost information in the Freeway/Highway Life Cycle Program. The availability of this information was such that the required MAG decision-making process for updating the RTP carried over into FY 2009. It is anticipated that the 2009 RTP Update and the FY 2010-2014 TIP will be developed consistent with the usual programming cycle during FY 2009.

Revised Highway Acceleration Policy: On February 27, 2008, the MAG Regional Council adopted a revised MAG Highway Acceleration Policy. This revision will replace the policy adopted in March 2000, and includes improvements and clarifications that bring the policy in line with Proposition 400, resulting in a more effective process. Below are some of the key features of the revised policy:

- The Transportation Policy Committee will review any request to accelerate a highway project and will make a recommendation to the MAG Regional Council, which must approve or disapprove the acceleration request.

- The jurisdiction or jurisdictions requesting the acceleration (sponsoring jurisdictions) must provide a resolution of support and demonstration of financial commitment for the request from the governing body of the jurisdiction, before the Transportation Policy Committee and the MAG Regional Council take formal action.

- Accelerated projects will not be included in the TIP or RTP or used in air quality conformity analyses until the parties have entered into an IGA.

- Sponsoring jurisdiction(s) must enter into an agreement with the Arizona Department of Transportation (ADOT) that includes the parameters of the approval from MAG, and MAG shall be a party to the agreement to ensure it conforms to this policy.

- Eligible projects covered by the MAG Highway Acceleration Policy include all projects on the State Highway System that are included in the ADOT Highway Life-cycle Program for the MAG Region and included in the adopted MAG Transportation Improvement Program (TIP) or the MAG Regional Transportation Plan (RTP).

- Since the primary sources of regional transportation funding have been included in the MAG RTP, funds that are the result of specific earmarks of either federal or state funds that have already been accounted for in the RTP ("below the line funding") are not eligible to be used to accelerate highway projects in the MAG region.

- Fifty percent (50%) of the interest expense will be reimbursed by the jurisdiction and the balance will be paid by regional program revenues if it is determined that the program cash flow is adequate. Interest expense is based on the actual interest expense of the financing plus the costs of issuance, if any, or the imputed interest cost based on documented market rates if cash balances are used.

- No highway project, portion or segment in the adopted TIP or RTP is to be adversely impacted, delayed, reduced or removed as a result of the acceleration of another project, portion or segment.

4.3.2 Corridor-Level, Sub-Area and Modal Activities

Interstate 10 / Hassayampa Valley Transportation Framework Study: On February 27, 2008 the MAG Regional Council accepted the findings of the Interstate 10 / Hassayampa Valley Transportation Framework Study. MAG, in association with ADOT, the Maricopa County Department of Transportation, the Town of Buckeye, and the Cities of Goodyear and Surprise, funded and developed the study. The study began in May 2006 for an area bounded by SR-

74 on the north, SR-303L on the east, the Gila River on the south, and 459th Avenue on the west.

The action to accept the study included: (1) accept the findings of the Interstate 10-Hassayampa Valley Transportation Framework Study as the surface and public transportation framework for the Hassayampa Valley; (2) adopt the traffic interchange locations for the Interstate 10/Papago Freeway from SR-303L/Estrella Freeway to 459th Avenue, (3) adopt a two-mile traffic interchange spacing policy for new freeway facilities within the Hassayampa Valley with appropriate planning for non-access crossings of the freeway facilities to facilitate local transportation movements; (4) adopt a new functional classification as a parkway, recognizing the Arizona Parkway as a type of parkway with unique operating characteristics for congestion and air quality planning purposes; (5) accept the findings and implementation strategies as describe in the study for inclusion as illustrative corridors in the Regional Transportation Plan; and (6) recommend the affected jurisdictions within the Hassayampa Valley study area incorporate this study's recommendations into future updates of their general plans.

While the study provides a significant milestone in transportation planning for the Hassayampa Valley, the recommendations are not funded. Therefore, the Regional Council was requested to accept the study's findings versus actually adopting them. In taking this action, the planning process can be moved forward in an illustrative manner, thereby providing guidance to MAG and the affected agencies in the Hassayampa Valley for future activities, including updates to the Regional Transportation Plan.

Interstate 8 & 10 / Hidden Valley Transportation Framework Study: The study area covers portions of both Maricopa and Pinal Counties, and is generally bounded by: Overfield Road on the east, I-8 on the south, 459th Avenue on the west, and the Gila River and/or the north boundary of the Gila River Indian Community on the north. The purpose of the study is to identify a long-range transportation network within the study area, determine operational and safety improvements, and form a framework for regional connections and roadways in the study area. This study process includes examining both roadway and alternative transportation modes, funding source options, and access management approaches. The study has also pursued an extensive community and stakeholder outreach and involvement program. It is anticipated that the study will be completed in the fall of 2008.

MAG Commuter Rail Strategic Plan: On April 23, 2008, the MAG Regional Council accepted the findings of the MAG Commuter Rail Strategic Plan. MAG launched the commuter rail strategic planning process in February 2007. The purpose of the planning process was to develop an implementation strategy for commuter rail service in Maricopa County and northern Pinal County. The strategic plan builds upon technical information from the High Capacity Transit

Study and ongoing passenger rail planning by the Arizona Department of Transportation (ADOT) to provide a framework for implementing commuter rail service in the MAG region.

The action by the Regional Council included accepting the findings of the Commuter Rail Strategic Plan as the guiding implementation framework for commuter rail, and for MAG to proceed with the first four implementation steps identified on page nine of the Executive Summary: 1) Ongoing Coordination; 2) Union Pacific Passenger Rail Coordination; 3) Burlington Northern Santa Fe Railway Coordination; and 4) Regional Transit Planning.

The RTP does not include funding to build and operate commuter rail in the MAG region. The RTP indicates that population densities sufficient to warrant an investment in commuter rail may not occur within the twenty year planning horizon. Recognizing that population expansion may occur at a higher rate than currently projected, the RTP allocates funding to continue developing commuter rail concepts for the region.

Statewide Intrastate Mobility Reconnaissance Study: During FY 2008, the "Statewide Intrastate Mobility Reconnaissance Study" was completed. MAG managed this study as a partner with ADOT, as well as the Councils of Governments and Metropolitan Planning Organizations covering all of Arizona. Among other results, the study identified areas for future transportation framework studies throughout Arizona, and developed a statewide traffic modeling tool. ADOT has provided $7 million to fund framework studies across the state, which are expected to be completed in 2009. MAG is funding three of the framework studies involving the MAG area, as well as the update of the MAG Regional Transportation Plan. As part of the Reconnaissance Study, a computer travel demand forecasting tool was developed to provide a consistent method of analysis to identify transportation needs.

CHAPTER FIVE

HALF-CENT SALES TAX FOR TRANSPORTATION AND OTHER REGIONAL REVENUES

The half-cent sales tax for transportation approved through Proposition 400 is the major funding source for the MAG Regional Transportation Plan (RTP), providing over half the revenues for the Plan. In addition to the half-cent sales tax, there are a number of other RTP funding sources, which are primarily from State and Federal agencies. These revenue sources and the half-cent tax have been termed regional revenues in the RTP. The specific regional revenue sources are:

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

In addition to regional revenues, local governments provide funding that supports implementation of the RTP. These 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. An additional block of funding from State sources, the Statewide Transportation Acceleration Needs (STAN) Account, is also applied to projects in the RTP, and may be available on a periodic basis.

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. The effect of inflation is accounted for separately through an allowance for inflation that is applied when comparing project costs and revenues, which is included in the modal chapters. In these chapters, costs reflect currently available, real dollars estimates as of 2008, but may not have been specifically factored, in every case, to a 2008 base year.

5.1 HALF-CENT SALES TAX *(Maricopa County Transportation Excise 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 and went into affect on January 1, 2006.

The revenues collected from the half-cent sales tax extension 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. Table 5-1 displays the actual and projected Proposition 400 half-cent sales tax revenues for the period FY 2006-2026. As specified in ARS 42-6105.E, 56.2 percent of all sales tax collections are 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). The use of PTF monies must be separately accounted for based on allocations to: (1) light rail transit, (2) capital costs for other transit, and (3) operation and maintenance costs for other transit.

As displayed in Table 5-1, actual receipts from the Proposition 400 half-cent sales tax totaled $154 million during FY 2006, $391 million for FY 2007, and $387 million for FY 2008. (The FY 2006 amount reflects the initiation of the tax on January 1, 2006 and the normal lag in receipt of revenues by the fund. During the first half of FY 2006, the half-cent tax was being implemented under Proposition 300.) As indicated, the receipts for FY 2008 were 3.0 % lower than those for FY 2007. This represents the first decline in year-over-year revenues in the history of the half-cent sales tax for transportation since its inception in 1985.

Future half-cent revenues for the period FY 2009 through FY 2026 are forecasted to total $13.7 billion. This amount is 2.7 percent lower than the forecast for the same period presented in the 2007 Annual Report. Of the $13.7 billion total included in the current forecast, $7.7 billion will be allocated to freeway/highway projects; $1.4 billion to arterial street improvements; and $4.5 billion to transit projects and programs. The total revenues for the FY 2009-2026 period reflect ADOT's sales tax forecast of September 2007. However, the forecasted annual amounts in Table 5-1 were adjusted by ADOT in May 2008 to reflect recent trends in revenue collections. ADOT will update the half-cent forecasts in the latter part of calendar year 2008, taking into account recent slowing in revenue collections as appropriate.

5.2 ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT) FUNDS

ADOT funding sources include the Arizona State Highway User Revenue Fund (HURF) monies allocated to ADOT to support the State Highway System, ADOT Federal Aid Highway Funds, and other miscellaneous sources.

TABLE 5-1
MARICOPA COUNTY TRANSPORTATION EXCISE TAX: FY 2006-2026
(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%)		
Actual (2)				
2006 (1)	86.3	16.1	51.1	153.6
2007	219.7	41.1	130.2	391.0
2008	213.2	39.8	126.3	379.4
Subtotal	**519.3**	**97.0**	**307.7**	**924.0**
Forecasted				
2009	219.3	41.0	129.9	390.2
2010	229.0	42.8	135.7	407.5
2011	244.1	45.6	144.6	434.3
2012	260.8	48.7	154.5	464.1
2013	278.8	52.1	165.2	496.1
2014	304.0	56.8	180.1	540.9
2015	334.4	62.5	198.1	595.0
2016	367.9	68.7	218.0	654.6
2017	401.0	74.9	237.6	713.5
2018	437.1	81.7	259.0	777.8
2019	472.0	88.2	279.7	839.9
2020	509.8	95.2	302.1	907.1
2021	550.6	102.9	326.2	979.7
2022	589.1	110.1	349.1	1,048.2
2023	630.4	117.8	373.5	1,121.7
2024	674.5	126.0	399.7	1,200.2
2025	720.9	134.7	427.2	1,282.7
2026 (3)	448.9	83.9	266.0	798.8
Subtotal	**7,672.6**	**1,433.5**	**4,546.2**	**13,652.3**
Total				
Totals	**8,191.9**	**1,530.5**	**4,853.9**	**14,576.3**

(1) Represents Proposition 400 tax revenues, which began on January 1, 2006.
(2) Fiscal Year totals reflect the lag in actual receipt of revenues by the fund.
(3) Reflects end of Proposition 400 half-cent sales tax on December 31, 2025.

5.2.1 ADOT Funding Overview

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. Of the total 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.

ADOT, Arizona counties and cities and towns, and the Department of Public Safety (DPS) receive an allocation from HURF. Of the funds remaining after the allocation for DPS, ADOT receives 50.5 percent, 19 percent is allocated to counties, and 27.5 percent is allocated to Arizona cities and towns. The remaining three percent is allocated to cities with populations over 300,000. For the purposes of revenue forecasting, total HURF funds are projected based on forecasted population and economic growth, assuming that there would no change in tax rates. Total forecasted HURF funds are 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 and maintenance and debt service on outstanding bonds. This includes funds for the Motor Vehicle Division, administration, highway maintenance and additional funding for DPS. 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”.

5.2.2 ADOT Funding in the MAG Area

Table 5-2 summarizes ADOT funds applicable to projects in the MAG Regional Transportation Plan. As displayed in Table 5-2, actual receipts from ADOT Funds through FY 2008 totaled $784 million, and forecasted revenues for the period FY 2009 through FY 2026 total $7.4 billion.

TABLE 5-2
ADOT FUNDING IN MAG AREA: FY 2006-2026
(Year of Expenditure Dollars in Millions)

Fiscal Year	15% Funds	ADOT Discretionary	Total Funding
Actual			
2006	72.8	110.9	183.7
2007	76.9	161.4	238.3
2008	77.1	285.3	362.4
Subtotal	**226.8**	**557.6**	**784.4**
Forecasted			
2009	85.9	354.2	440.1
2010	90.0	165.7	255.7
2011	94.7	185.0	279.7
2012	99.5	203.7	303.2
2013	104.7	193.0	297.7
2014	110.3	220.3	330.6
2015	116.1	229.1	345.2
2016	122.1	238.3	360.4
2017	128.5	247.8	376.3
2018	135.5	257.7	393.2
2019	142.8	268.0	410.8
2020	150.5	278.7	429.2
2021	158.6	289.9	448.5
2022	167.5	304.5	472.0
2023	176.1	313.5	489.6
2024	185.9	326.1	512.0
2025	196.3	339.1	535.4
2026	207.1	567.9	775.0
Subtotal	**2,472.1**	**4,982.5**	**7,454.6**
Total			
Totals	**2,698.9**	**5,540.1**	**8,239.0**

15 Percent Funding: The MAG area receives annual funding from the Arizona Department of Transportation (ADOT) in the form of 15 Percent Funds, which are allocated from the Highway User Revenue Fund (HURF). This source represents about one-third of the total ADOT funding in the Freeway/Highway Life Cycle Program. These funds are spent for improvements on limited access facilities on the State Highway System.

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 Regional Transportation Plan 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.

5.3 MAG AREA FEDERAL TRANSPORTATION FUNDS

In addition to the half-cent sales tax revenues and ADOT funding, Federal transportation funding directed to the MAG region is available for use in implementing projects in the MAG Regional Transportation Plan. These sources are summarized in Table 5-3, which displays actual and forecasted receipts. As displayed in Table 5-3, actual receipts from Federal sources totaled $261 million through FY 2008. The forecasted revenues for the period FY 2009 through FY 2026 total $5.3 billion. This forecast is essentially unchanged from the figure provided in the 2007 Annual Report. It is anticipated that MAG will be conducting a thorough review and updating of this forecast in the latter part of 2008.

5.3.1 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 $1.6 billion for transit development from FY 2009 through FY 2026.

5.3.2 Federal Transit (5309) Funds Federal

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, during FY 2009 through FY 2026. 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.

5.3.3 Federal Highway (MAG STP) Funds

MAG Surface Transportation Funds (STP) are the most flexible Federal transportation funds and may be used for highways, transit or streets. During the period from FY 2009 through FY 2026, it is estimated that $1.2 billion will be available from STP funds. Of this amount, approximately $34 million per year has been allocated through FY 2015 to retire debt related to the completion of the Proposition 300 program, and the remainder is dedicated to the RTP arterial program.

TABLE 5-3
MAG FEDERAL TRANSPORTATION FUNDS: FY 2006-2026
(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	
Actual													
2006	9.1	0.0	9.1	34.1	3.2	37.3	0.0	0.0	1.3	0.0	0.0	1.3	47.7
2007	33.8	4.0	37.8	34.1	13.5	47.6	0.0	0.0	0.0	0.0	0.0	0.0	85.4
2008	23.8	28.9	52.7	34.1	13.2	47.3	5.6	5.9	15.7	7.5	6.4	41.1	141.1
Subtotal	**66.7**	**32.9**	**99.6**	**102.3**	**29.9**	**132.2**	**5.6**	**5.9**	**17.0**	**7.5**	**6.4**	**42.4**	**274.2**
Forecasted													
2009	25.5	17.6	43.0	34.1	13.5	47.6	11.2	5.9	15.9	7.5	6.5	47.0	137.7
2010	27.3	5.7	33.0	34.1	16.0	50.1	8.7	6.1	16.4	7.8	6.7	45.7	128.8
2011	43.6	23.3	66.9	34.1	17.8	51.9	9.0	6.3	17.0	8.1	6.9	47.3	166.1
2012	46.6	44.3	90.9	34.1	19.6	53.7	9.4	6.6	17.6	8.3	7.2	49.1	193.6
2013	60.7	59.8	120.6	34.1	21.3	55.4	9.7	6.8	18.2	8.6	7.4	50.7	226.7
2014	64.7	82.4	147.1	34.1	23.1	57.2	10.0	7.0	18.9	8.9	7.7	52.5	256.8
2015	69.0	105.0	174.0	34.1	24.9	59.0	10.4	7.3	19.5	9.2	7.9	54.3	287.3
2016	73.5	171.1	244.6	12.7	48.1	60.8	10.7	7.5	20.2	9.6	8.2	56.2	361.6
2017	94.3	178.8	273.1		62.9	62.9	11.1	7.8	20.9	9.9	8.5	58.2	394.2
2018	90.2	184.4	274.7		65.1	65.1	11.5	8.1	21.6	10.2	8.8	60.2	400.0
2019	95.9	163.1	259.0		67.4	67.4	11.9	8.4	22.4	10.6	9.1	62.4	388.8
2020	94.6	112.9	207.5		69.8	69.8	12.3	8.6	23.2	11.0	9.4	64.5	341.7
2021	100.7	94.6	195.3		72.2	72.2	12.8	9.0	24.0	11.4	9.8	67.0	334.5
2022	113.0	110.4	223.4		74.7	74.7	13.2	9.3	24.8	11.8	10.1	69.2	367.4
2023	128.9	111.3	240.2		77.3	77.3	13.7	9.6	25.7	12.2	10.4	71.6	389.1
2024	141.3	112.1	253.4		80.0	80.0	14.1	9.9	26.6	12.6	10.8	74.0	407.5
2025	164.2	113.1	277.2		82.9	82.9	14.6	10.3	27.5	13.0	11.2	76.6	436.7
2026	159.2	35.0	194.2		85.8	85.8	15.2	10.6	28.5	13.5	11.6	79.4	359.3
Subtotal	**1,593.1**	**1,725.0**	**3,318.1**	**251.4**	**922.4**	**1,173.8**	**209.5**	**145.1**	**388.9**	**184.2**	**158.2**	**1,085.9**	**5,577.8**
Total													
Totals	**1,659.8**	**1,757.9**	**3,417.7**	**353.7**	**952.3**	**1,306.0**	**215.1**	**151.0**	**405.9**	**191.7**	**164.6**	**1,128.3**	**5,852.0**

5.3.4 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. MAG CMAQ funds are projected to generate $1.1 billion from FY 2009 through FY 2026.

5.4 STATEWIDE TRANSPORTATION ACCELERATION NEEDS (STAN) ACCOUNT

As part of the budget process in the Spring 2006 Arizona Legislative Session, the Legislature passed, and the Governor signed, HB 2865, which included the creation of the Statewide Transportation Acceleration Needs (STAN) Account. The 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 for projects on the State Highway System. On December 13, 2006, the MAG Regional Council approved a set of projects to be funded from the Statewide Transportation Acceleration Needs (STAN) Account in the MAG area. MAG's share of the STAN funding for the period FY 2009-2026 is forecasted to total $189 million, which includes estimated interest earnings.

5.5 REGIONAL REVENUES SUMMARY

Actual and forecasted regional revenue sources for the MAG RTP between FY 2006 and FY 2026 are summarized in Table 5-4. Actual receipts from all regional revenue sources through FY 2008 totaled $2.0 billion. Future regional revenues are projected to total $26.9 billion for the period FY 2009 through FY 2026. Total revenues for the period FY 2006 through FY 2026 amount to $28.9 billion, which is equivalent to the estimate in the 2007 Annual Report for this period .

In addition to the funding sources listed in Table 5-4, bonding and other debt financing assumptions, as well as allowances for inflation, are applied in each modal life cycle program. These amounts are listed in the respective modal chapters (see Chapters Six, Seven and Eight).

TABLE 5-4
REGIONAL REVENUES SUMMARY
(Year of Expenditure Dollars in Millions)

Sources	FY 2006 - 2008 Actual	FY 2009 - 2026 Forecast	Total
Proposition 400: Half Cent Sales Tax Extension	924.0	13,652.3	14,576.3
ADOT Funds	784.4	7,454.6	8,239.0
Statewide Transportation Acceleration Needs (STAN)	14.2	189.3	203.5
Federal Transit (5307 Funds)	66.7	1,593.1	1,659.8
Federal Transit (5309 Funds)	32.9	1,725.0	1,757.9
Federal Highway (MAG STP)	132.2	1,173.8	1,306.0
Federal Highway (MAG CMAQ)	42.4	1,085.9	1,128.3
Total	1,996.8	26,874.0	28,870.8

CHAPTER SIX

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM

The Freeway/Highway Life Cycle Program extends through FY 2026 and is maintained by the Arizona Department of Transportation (ADOT) to implement freeway/highway projects identified in the MAG Regional Transportation Plan (RTP). The program utilizes funding from the Proposition 400 half-cent sales tax extension, as well as funding from State and Federal revenue sources.

6.1 STATUS OF FREEWAY/HIGHWAY PROJECTS

The Freeway/Highway Life Cycle Program includes both new freeway corridors to serve growth in the region and improvements to the existing system to address current and future congestion. In addition, effective operation and maintenance of the existing and future system are addressed. Figure 6-1, as well as appendix Tables A-1 through A-7, provide information on the locations and costs associated with Freeway/Highway Life Cycle projects. The projects depicted in Figure 6-1 are cross-referenced with the data in the tables by the code associated with each project.

6.1.1 New Corridors

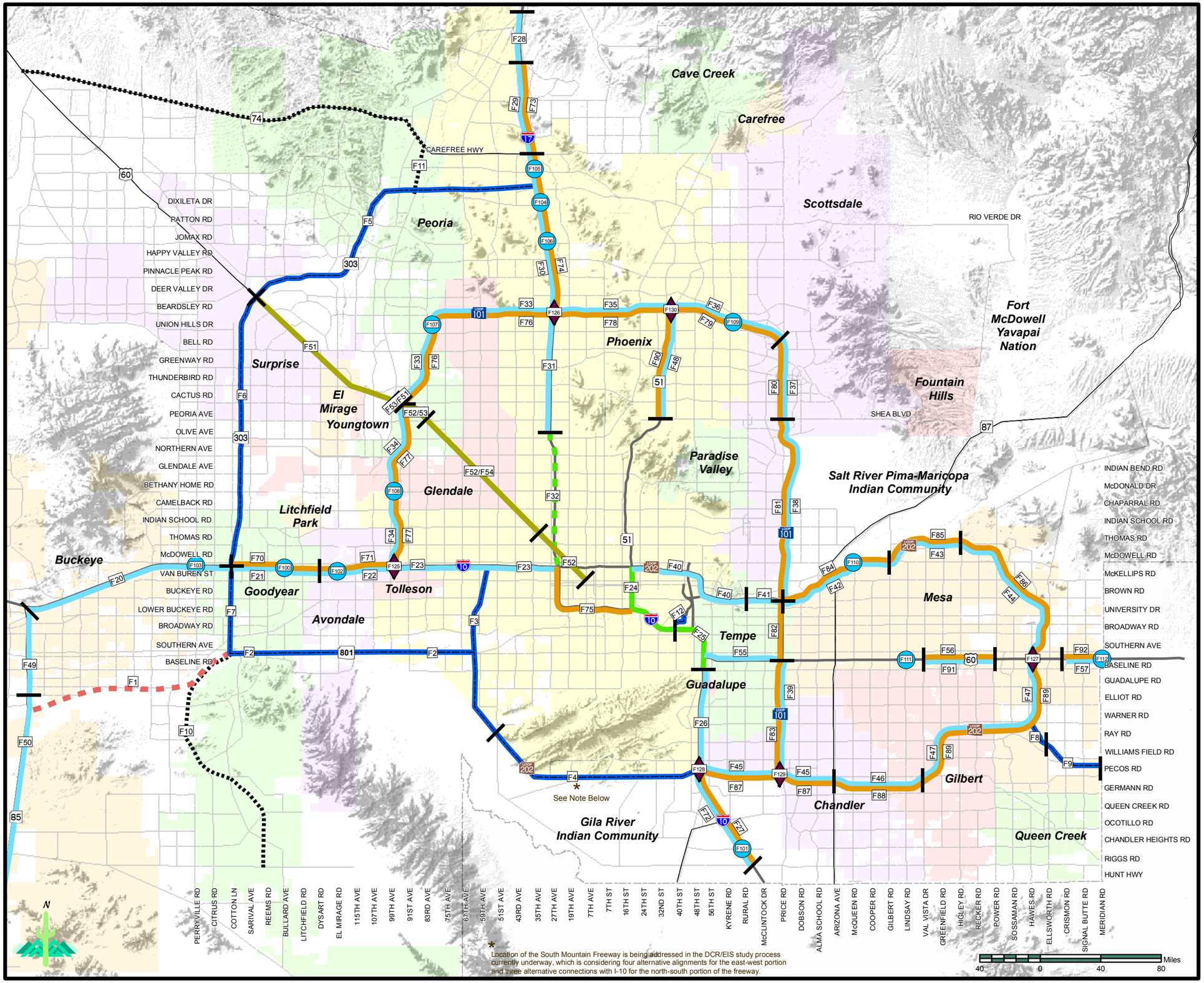
SR 153 (Sky Harbor Expressway)

- On July 25, 2007, the MAG Regional Council deleted SR 153/Sky Harbor Expressway from the RTP, and shifted the funding to improvements on SR 143/Hohokam Expressway. This action was taken in accordance with the requirements of Arizona Revised Statute (A.R.S.) 28-6353 and met applicable Federal air quality conformity requirements. In December 2007, SR 153 was deleted from the Arizona State Highway System and transferred to the City of Phoenix.

Loop 202 (South Mountain Freeway):

- The South Mountain Freeway is planned as a loop facility south of the central area of the region, connecting the western terminus of the Santan Freeway with I-10 in the West Valley. The RTP identifies funding through FY 2015 for construction of a six-lane freeway between I-10 (west) and I-10 (east).

- A Design Concept Report (DCR) and an Environmental Impact Statement (EIS) are currently progressing for the South Mountain Freeway corridor. Completion and approval of a final EIS, as well as a U.S. Department of Transportation “Record-of-Decision” on the recommended alternative for the corridor, are anticipated sometime during calendar year 2009.



* Location of the South Mountain Freeway is being addressed in the DCR/EIS study process currently underway, which is considering four alternative alignments for the east-west portion and three alternative connections with I-10 for the north-south portion of the freeway.

Figure 6-1

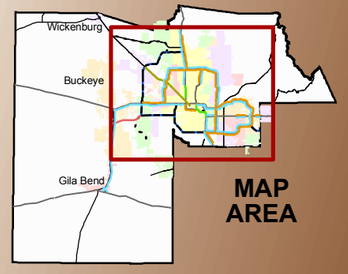
MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2008 Annual Report on Proposition 400

Freeways/Highways

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

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.



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.

- $915 million has been programmed from FY 2009 through FY 2013 to cover design, right-of-way, and construction for the South Mountain Freeway.

- Preliminary information from ongoing engineering studies on the South Mountain Freeway indicate that the total cost of the facility may exceed the total future funding currently allocated to this project ($1.1 billion) by as much as $1.0 billion.

Loop 303 (Estrella Freeway):

- Loop 303 is planned to extend west from I-17 at Lone Mountain Rd., swinging southwest to Grand Ave., running south in the vicinity of Cotton Lane to I-10, and then terminating at MC 85 (Buckeye Rd.). The RTP identifies funding through FY 2015 for construction of a six-lane freeway between I-10 and I-17. The segment between MC 85 and I-10 is targeted for construction by the end of FY 2020.

- An interim facility has been constructed between Grand Ave. and Happy Valley Rd. by Maricopa County, and full freeway right-of-way has also been acquired along most of this segment.

- DCRs and Environment Assessments (EAs) on the segments between I-10 and Grand Ave. (US 60), and between I-10 and MC 85, are scheduled for completion by December 2008 and August 2009, respectively.

- It is anticipated that a bid advertisement for interim construction between Happy Valley Rd. and Lake Pleasant Rd. will be published in September 2008, and for interim construction between Lake Pleasant Rd. and I-17 in January 2009.

- The "Construction Manager at Risk" for an interchange structure at Bell Rd., and preliminary interchange work at Cactus Rd. and Waddell Rd. was selected in FY 2008, and work is scheduled to begin in September 2008

- A total of $1.2 billion has been programmed from FY 2009 through FY 2013 for design, right-of-way, and construction between I-17 and I-10.

- Preliminary information from ongoing engineering studies on Loop 303 indicate that the total cost of the facility may exceed the total future funding currently allocated to this project ($1.8 billion) by as much as $1.0 billion.

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 (Loop 202) and SR 85. In the RTP, the route is funded for construction as a six-lane freeway between Loop 202

and Loop 303; and as a two-lane roadway, with right-of-way preservation for a freeway facility, between Loop 303 and SR 85. Construction of the facility is targeted for the period 2021 through 2026.

- Preliminary engineering and environmental analysis for the segment between Loop 202 and Loop 303 are anticipated to be completed in November FY 2008. Final engineering and environmental analysis for the segment between Loop 303 and SR 85 are due in July 2010.

- $30 million has been programmed from FY 2009 through FY 2013 for early right-of-way protection. The amounts programmed for right-of-way will increase in later years prior to construction.

- Preliminary information from ongoing engineering studies on SR 801 indicate that the total cost of the facility may exceed the total future funding currently allocated to this project ($820 million) by as much as $1.1 billion.

SR 802 (Williams Gateway Freeway):

- The Williams Gateway Freeway is planned as a six-lane facility extending from Loop 202 south to the Williams Gateway Airport, and east to the Pinal County line. In the RTP, final construction of the facility is targeted to occur by the end of 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 for the entire corridor (including the Pinal County portion) are anticipated to continue through FY 2009.

- $8 million has been programmed from FY 2009 through FY 2013 for early right-of-way protection. The amounts programmed for right-of-way increase in later years prior to construction.

Other Right-of-Way Protection on SR 74 and Loop 303 (Buckeye Rd. to Riggs Rd.):

- $1 million per year has been programmed during the period from FY 2009 through FY 2013 for right-of-way protection on SR 74. This level is maintained and enhanced in future years, in an effort to meet potentially growing right-of-way protection requirements in this area.

- Funding for right-of-way is also identified for Loop 303 (MC 85 to Riggs Rd.) in later years. The precise alignment for Loop 303 south of MC 85 has not yet been defined.

6.1.2 Widen Existing Facilities: General Purpose Lanes and HOV Lanes

I-10:

- The RTP includes the addition of general purpose lanes along essentially the entire length of I-10, between State Route 85 on the west and Riggs Rd. on the east (no additional lanes are planned between I-17 and SR 51). HOV lanes will also be added along several segments to provide continuous HOV service on I-10, between Loop 303 on the west and Riggs Rd. on the east. Improvements are generally scheduled from FY 2009 through FY 2015.

- A Design Concept Report (DCR) and Environmental Impact Statement (EIS) on local/express lanes that would ease congestion between State Route 51 and Baseline Rd. are scheduled for completion in December 2009. A total of $526 million has been programmed from FY 2009 through FY 2013 for design, right-of-way and construction work on this project.

- Preliminary information from ongoing engineering studies on the I-10 local/express lanes indicate that the total cost of the ultimate facility concept may exceed the total future funding currently allocated to this project ($534 million) by as much as $870 million.

- A total of $63 million has been programmed from FY 2009 through FY 2011 to complete the widening between Sarival Ave. and Loop 101. Construction work is underway to add HOV and general purpose lanes in the median of the facility and will be completed by June 2010. The addition of general purpose lanes adjacent to the outside of the existing facility between Sarival Ave. and Dysart Rd. is scheduled for the bid process in March 2009.

- A total of $43 million has been programmed in FY 2009 for the construction of general purpose lanes between Sarival Ave. and Verrado Way. This project was advanced from 2023 to 2009 by making use of the STAN funding approved by the Legislature in FY 2006.

- Preliminary analysis for general purpose lanes on the segment between I-17 and Loop 101 (Agua Fria) is expected to be completed in December 2008. 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. A total of $72 million has been programmed during FY 2009 and FY 2010 for design and construction on this segment.

- $69 million has been programmed during FY 2009 and FY 2010 for the design and construction of both general purpose and HOV lanes between Loop 202 (Santan Freeway) and Riggs Rd. Preliminary engineering and environmental studies were reinitiated in FY 2007.

I-17:

- The RTP includes construction of additional general purpose lanes on I-17 between McDowell Rd. on the south and New River Rd. on the north. HOV lanes are also being added to fill gaps, and to extend the HOV system along I-17 from I-10 (in the area of Sky Harbor), to Anthem Way. Improvements are programmed through FY 2024.

- Construction work is underway to widen the segment between Loop 101 and Carefree Highway. HOV lanes and general purpose lanes will be completed along this segment by January 2010.

- A total of $31 million has been programmed in FY 2009 for the construction of general purpose lanes between Carefree Highway and Anthem Way. It is anticipated that this project will be advertised for bids in October 2008.

- A total of $51 million has been programmed in FY 2012 and FY 2013 to design and construct additional general purpose lanes between the Arizona Canal and Loop 101.

SR 51 (Piestewa Freeway):

- The RTP includes construction of additional general purpose and HOV lanes on SR 51 between Shea Boulevard and Loop 101. The HOV improvements were programmed in FY 2007, with funding for the general purpose lanes identified in FY 2023.

- The project to construct the HOV lanes includes ramps at the system interchange between SR 51 and Loop 101. Construction is currently underway and is anticipated to be completed by December 2008.

- Preliminary engineering and environmental analysis for the addition of general purpose lanes on SR 51 will begin in FY 2020, with construction to follow in FY 2023.

US 60 (Grand Ave.):

- The RTP identifies a series of improvement projects along various segments of Grand Ave. between Loop 303 and McDowell Rd., including the addition of general purpose lanes, grade separations and other improvements. The implementation of these projects will span the planning period through FY 2026.

- A project to widen the segment between 99th Ave. and 83rd Ave. will be advertised in July 2008. A project to widen Grand Ave. to six lanes between Loop 303 and 99th Ave. will be advertised for bids in March 2009.

- Preliminary engineering and environmental analysis for corridor improvement projects between Loop 101 and McDowell Rd. will be completed in October 2008. A total of $33 million has been programmed in FY 2009 and FY 2010 for design and construction on this segment.

- It is anticipated that a feasibility study on the grade separation projects identified for Grand Ave. between Loop 303 and Loop 101 will be completed in October 2008.

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 Loop 202 by FY 2007, and to Meridian Rd. by FY 2020.

- Construction on the addition of both general purpose and HOV lanes from Gilbert Rd. to Power Rd. was completed in FY 2007, and was opened in June 2007.

- Bids were requested for general purpose lanes between I-10 and Loop 101 in March 2008. A total of $21 million was been programmed in FY 2008 for design and construction of this segment.

- Preliminary engineering and environmental analysis for the addition of general purpose lanes and HOV lanes between Crismon Rd. and Meridian Rd. will begin in FY 2014/2015.

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. A total of $115 million has been programmed during FY 2009 through FY 2010 to complete the widening to Gila Bend. Construction is underway on frontage roads between MC 85 and Southern Ave., and the construction of frontage roads between Southern Ave. and I-10 is scheduled for bids in August 2008.

SR 87:

- A project for improvements between Forest Boundary and New Four Peaks Rd. is currently under construction, including an interchange at Bush Hwy. Construction is anticipated to be completed in late 2008.

- $23 million is programmed in FY 2010 for construction of a climbing lane and shoulder widening between New Four Peaks Rd. (MP 204.3) and Dos S Ranch Rd. (MP 209.7)

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.

- $32 million was programmed for construction in FY 2007 and the project is currently under construction, with completion expected during FY 2010.

Loop 101:

- The RTP calls for constructing additional general purpose lanes and HOV lanes along most of the length of Loop 101 (the Agua Fria, Pima, and Price Freeways) by the end of FY 2026. Only additional general HOV lanes are planned between the Red Mountain Freeway and Baseline Rd. The early focus of the improvements is to provide additional HOV lanes, with general purpose lanes scheduled after FY 2011.

- The construction of HOV lanes between Princess Dr. and Loop 202 (Red Mountain Fwy.) is currently underway and is expected to be completed by January 2009. Bids were received in February 2008 for the construction of HOV lanes from Tatum Boulevard to Princess Dr.

- A request for bids for the construction of HOV lanes between Loop 202 (Red Mountain) and Loop 202 (Santan Freeway) was advertised in March 2008.

- Preliminary engineering and environmental analysis for the addition of general purpose and HOV lanes on the remainder of the Pima and Price Freeways will occur after FY 2011, and will be initiated after FY 2016 for the Agua Fria Freeway.

Loop 202:

- The RTP identifies the construction of additional general purpose and HOV lanes along essentially the entire length of Loop 202 (Red Mountain and Santan Freeways) by the end of FY 2026. The segment from SR 51 to Loop 101 already has HOV lanes. Also, this does not include the portion of Loop 202 covered by the South Mountain Freeway, which will be constructed as a new corridor. Generally, 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.

- As part of the project to widen Loop 202 between State Route 51 and Loop 101, a request for bids was advertised in March 2008 for the widening of structures at Washington Ave. and Mill Ave. The remainder of the project will be constructed through a design/build contract, which was finalized in FY 2009.

- It is anticipated that a request for bids to construction HOV lanes between Loop 101 and Gilbert Rd. will be advertised in October 2008.

- 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 occur after FY 2012.

6.1.3 New Interchanges and New HOV Ramps on Existing Facilities

New Interchanges at Arterial Streets:

- The RTP identifies a total of thirteen new traffic interchanges (TIs) to be constructed on existing freeways at arterial street crossings. These projects are located along most of the major segments of the regional freeway system, including I-10, I-17, Loop 101, Loop 202, and US 60 (Superstition Freeway). Implementation of these new interchanges will be phased over the entire planning period through FY 2026. In addition, at this time privately funded interchanges are programmed for construction at Desert Creek Rd. in FY 2010 and at 395th Ave. in FY 2009.

- During FY 2008 construction of new interchanges at Dixeleta Dr./I-17, Bethany Home Rd./Loop 101, and Bullard Ave./I-10 were completed. New interchanges are under construction at Jomax Rd./I-17 and 64th St./Loop 101, and are anticipated to be completed in August 2008 and December 2008, respectively. Reconstruction of the interchange at Carefree Hwy./ I-17 is also underway and should be completed by December 2008.

- A request for bids to construct a new interchange at Dove Valley Rd./I-17 was advertised in July 2008. A total of $95 million has been programmed from FY 2009 through FY 2013 for design and/or construction of new interchanges at the following locations:

    - Beardsley Rd.-Union Hills/101L
    - Desert Creek/I-10 (Private Funds)
    - 395th Ave./I-10 (Private Funds)
    - Perryville Rd./I-10
    - Lindsay Rd./US 60

- Meridian Rd./US 60

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 are located at major connections among components of the Regional Freeway System, including I-10, I-17, Loop 101, Loop 202, US 60 (Superstition Freeway) and SR 51. Implementation of these new interchanges is phased over the entire planning period through FY 2026.

- Construction of new HOV ramps at the SR 51/101L freeway-to-freeway interchange, which was programmed in FY 2007 as part of the addition of HOV lanes on SR 51, is currently under construction as part of that project and is anticipated to be completed by December 2008.

Other Interchange Improvements:

- A total of $39 million has been programmed in FY 2009 and FY 2010 for the design and construction of improvements to the interchange between SR 143/Hohokam Expressway and the Loop 202 access to Sky Harbor Airport. Funding for this project was shifted from a project to complete SR 153, which has been deleted from the RTP.

6.1.4 Maintenance, Operations and Mitigation Programs

Freeway Management System:

- The RTP identifies a block of funding for the freeway management system (FMS) in the MAG area. 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.

- $43 million has been programmed from FY 2009 through FY 2013 for the design and implementation of FMS projects on I-17, SR 51, Loop 101 and Loop 202, as well as system-wide preservation and rehabilitation of FMS.

Maintenance:

- The RTP includes a block of funding for maintenance of the regional freeway system in the MAG area. This funding will be dedicated only to litter pick-up, landscaping maintenance and landscaping restoration.

- A total of $66 million has been programmed from FY 2009 through FY 2013 for system-wide litter pick-up and landscape maintenance.

Noise Mitigation:

- The RTP identifies a block of funding for noise mitigation projects on the freeway system in the MAG area. This funding will be used for mitigation projects such as rubberized asphalt overlays and noise walls.

- The bulk of the funding originally identified for noise mitigation has been utilized with the installation of approximately 195 miles of rubberized asphalt overlays. For FY 2009 through FY 2013, a total of $6 million has been programmed from for additional noise mitigation projects.

6.1.5 System-wide 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 of the development process include: (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 risk of litigation.

- $180 million has been programmed from FY 2009 through FY 2013 for system-wide preliminary engineering, advance right-of-way acquisition, property management/plans and titles, risk management and other system-wide programs.

6.1.6 Proposition 300 - Regional Freeway Program

- The Proposition 300 - Regional Freeway Program is in its final stages, with the last freeway segment in this program opening to traffic in July 2008. Although sales tax collections for Proposition 300 ended on December 31, 2005, work utilizing State and Federal funding sources continued through FY 2008 to complete the last segment of the program. In addition, certain debt service requirements and other financial obligations for the program continue through FY 2026. These obligations have been taken fully into account in the planning process for the new Freeway/Highway Life Cycle Program, so that there are no conflicting demands on revenues.

- The segment between University Dr. and Power Rd. was under construction during FY 2008 and opened to traffic on July 21, 2008. This project represents the final segment in the Proposition 300 - Regional Freeway Program.

6.2 FREEWAY/HIGHWAY PROGRAM CHANGES

Arizona Revised Statue 28-6353 requires that MAG approve any change in the RTP, and projects funded in the RTP that affect the agency's transportation improvement program, including priorities. In addition, requests for changes to transportation projects funded in the RTP that would materially increase costs must be submitted to MAG for approval.

6.2.1 FY 2008 Material Cost Increases

Generally, material cost increases that affect projects programmed in the current fiscal year are approved individually prior to the projects going to bid**.** According to the MAG Material Cost Change Policy, a material cost change is defined as: "An increase in the cost of a project that is more than five (5) percent of the adopted budget, but not less than $500,000, or any increase greater than $2.5 million." During FY 2008, the MAG Regional Council approved cost increases requested by ADOT totaling approximately $22 million for the freeway/highway projects shown in Table 6-1, which were programmed for FY 2008. It was determined that the cost increases could be accommodated within available cash flow.

TABLE 6-1
FY 2008 FREEWAY/HIGHWAY MATERIAL COST INCREASES

		Budget (000 $'s)		
Route	**Project**	**From**	**To**	**Increase**
10	Sarival Ave. to Dysart Rd. - Right-of-Way	$3,000	$3,500	$500
60	I-10 to Loop 101 - Construction	$19,500	$27,000	$7,500
85	MP 130.71 to MP 137.00 - Construction	$20,900	$27,000	$6,100
101	Red Mt. Fwy. to Santan Fwy. - HOV Lanes	$62,500	$57,600	($4,900)
202	Power Rd. to University Dr. - Construct Lanscape	$5,400	$6,400	$1,000
801	Loop 303 to Loop 202 - R/W Protection	$3,000	$15,000	$12,000
			TOTAL:	**$22,200**

6.2.2 Project Advancements

On March 26, 2008, the MAG Regional Council approved a request to accelerate the widening of the Union Hills traffic interchange bridge at Loop 101 from FY

2012 to FY 2009. This will allow the project to be constructed concurrently with a project for a Beardsley Rd. connector with Loop 101, resulting in significant cost savings and increased driver convenience. The City of Peoria is seeking a HELP loan of $9.91 million to finance the acceleration and requested that the interest expense be shared in accordance with the MAG Highway Acceleration Policy.

6.2.3 FY 2009-2026 Program Changes

For projects programmed in later years, cost increases and schedule changes are normally addressed through approval of the Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP) at the beginning of the program period. However, for the FY 2009 planning cycle, a fifth year was not added to the TIP and the existing FY 2008-2012 program was only amended as necessary. In addition, the RTP was amended to reflect any TIP changes, rather than being completely updated. Therefore, the FY 2009-2026 program changes will not be fully reflected in the RTP until the next update cycle, which is anticipated in the spring of 2009.

Table 6-2 identifies significant cost and schedule changes that were identified for projects in the FY 2009 - 2026 program. These changes are based on the total project cost, as estimated in the 2007 Annual Report, versus the total cost as estimated in the 2008 Annual Report. The net total of these project cost changes amounts to $214 million. It should be noted that these changes may not fully reflect the results of ongoing design concept and environmental studies.

In addition, it should be noted that Tables 6-1 and 6-2 are not comprehensive in their coverage of program changes and are not designed to provide a financial accounting reconciliation between totals reported in past and the current Annual Report. Instead, they are intended to alert decision-makers and the public to significant cost trends in projects included in the Life Cycle Program.

6.3 FREEWAY/HIGHWAY PROGRAM EXPENDITURES, ESTIMATED FUTURE COSTS, AND FISCAL STATUS

6.3.1 Program Expenditures and Estimated Future Costs

Table 6-3 provides a summary of past expenditures, estimated future costs and total costs by major program category for the Freeway/Highway Life Cycle Program. Detailed data on costs at the project level is included in Tables A-1 through A-7 in the appendix. In the Life Cycle Program, future costs reflect currently available, real dollars estimates as of 2008, but may not have been specifically factored, in every case, to a 2008 base year. As indicated in Table 6-3, expenditures through FY 2008 equal $776 million (YOE $'s) and estimated future costs covering the period FY 2009-2026 amount to $10.0 billion (2008 $'s).

TABLE 6-2

FY 2009-2026 SIGNIFICANT FREEWAY/HIGHWAY PROJECT COST AND SCHEDULE CHANGES

(2008 and Year of Expenditure Dollars in Millions)

		FY Programmed for Final Construction		Estimated Total Costs			
Route	**Project**	**From**	**To**	**From**	**To**	**Change**	**Comments**
10	Loop 303 to Loop 101	--	--	146.8	174.5	27.7	
10	Loop 202/Santan to Riggs Road	2010	2011	--	--	--	
17	Dove Valley Rd. (T.I.)	2008	2009	18.4	28.8	10.4	
17	Peoria Ave./Cactus Rd. (Drainage improvements)	2009	2013	--	--	--	
60 G	99th Avenue to 83rd Avenue	2008	2009	--	--	--	
60 S	I-10 to Loop 101	2010	2008	21.1	29.2	8.1	
60 S	Gilbert Rd. to Power Rd.	2006	2007	--	--	--	
60S	Lindsay Rd. (Half T.I.)	--	--	4.6	8.8	4.2	
60S	Meridian Rd. (Half T.I.)	--	--	4.6	8.8	4.2	
85	I-10 to I-8	--	--	193.5	209.3	15.8	
87	MP 211.8 - MP 213.0	2008	2010	--	--	--	
88	Fish Creek Hill (Improvements)	2008	2009	--	--	--	
143	Sky Harbor Blvd. (T.I.)	--	--	0.0	39.1	39.1	Project added in FY 2008.
154	Superior to University					(16.7)	Project deleted in FY 2008.
202 RM	I-10/SR 51 to Loop 101	2011	2009	--	--	--	
202 RM	Loop 101 to Gilbert Rd.	--	--	31.5	35.5	4.0	
202 SM	I-10 (West) to 51st Avenue	--	--	507.0	539.0	32.0	
202 SM	51st Avenue to Loop202/I-10	--	--	578.3	588.3	10.0	
303	US 60 (Grand Avenue) to I-10	--	--	675.0	741.6	66.6	
303	I-17 to US 60 (Grand Ave.)	--	--	837.6	807.8	(29.8)	
801	Loop 303 to Loop 202	--	--	723.0	739.0	16.0	
	Maintenance (Landscaping and litter pickup)	--	--	279.0	282.0	3.0	
	Preliminary Engineering, Fwy. Service Patrol, and Risk Management.	--	--	368.1	384.7	16.6	
	Ramp Meters, T.I. Improvements, Park & Ride Lots, Utility Relocations (Various locations)	--	--	22.8	25.8	3.0	
Total						**214.2**	

6.3.2 Future Fiscal Status

Table 6-4 summarizes the future funding sources and uses for the Freeway/Highway Life Cycle Program between FY 2009 and FY 2026. Sources for the Life Cycle Program between FY 2009 through FY 2026 include the Proposition 400 half-cent sales tax extension ($7.8 billion); ADOT funds, including STAN monies ($7.6 billion); Federal Highway funds ($461 million); bond and loan proceeds ($3.6 billion); and other income ($221 million). Expenses totaling $6.3 billion are deducted from these sources, which includes an RTP implementation allowance identified in legislation, estimated future debt service,

TABLE 6-3
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM
SUMMARY OF EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Category	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009 -2026 (2008 Dollars)	Total Cost: FY 2006-2026 (2008 and YOE Dollars)
	Design	Right-of-Way	Construction	Total		
New Corridors	25.0	27.6	0.0	52.6	4,117.4	4,170.0
Widen Existing Facilities: Add General Purpose Lanes	26.3	118.9	181.5	326.7	3,905.8	4,232.5
Widen Existing Facilities; Add HOV Lanes	18.4	0.0	54.1	72.5	662.8	735.3
New Interchanges on Existing Facilities: Freeway/Arterial	11.8	8.3	111.5	131.6	146.7	278.3
New HOV Ramps on Existing Facilities: Freeway/Freeway	0.0	0.0	0.0	0.0	172.8	172.8
Maintenance, Operations, Mitigation and Systemwide Programs	78.1	12.3	41.2	131.6	913.3	1,044.9
Other Projects	0.7	0.0	59.8	60.5	80.2	140.7
Total	**160.3**	**167.1**	**448.1**	**775.5**	**9,999.0**	**10,774.5**

and repayment of other financing. In addition, an allowance for inflation of $3.5 billion is deducted. Including a beginning balance of $461 million, there is a net total of $10.3 billion (2008 $'s) for use on freeway and highway projects through FY 2026.

Table 6-4 also lists the estimated future uses identified in the Life Cycle Program for the period covering FY 2009 through FY 2026, which total $10.0 billion. As shown, Life Cycle Program costs are in balance with the projected future funds available, with available funds exceeding costs by $264 million.

However, it is important to note that Table 6-4, as well as Appendix A, are based on costs that are currently undergoing major updating and revision. These cost revisions are discussed in the next section of the report (6.4 Freeway/Highway Program Outlook), and indicate that the Freeway/Highway Life Cycle Program will require major adjustments in order to achieve a balance between estimated costs and projected revenues during the planning period.

TABLE 6-4
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM
FUTURE SOURCES AND USES OF FUNDS: FY 2009-2026
(2008 and Year of Expenditure Dollars in Millions)

SOURCES OF FUNDS	
Source	**Projected Future Funding: FY 2009-2026 (YOE Dollars)**
Proposition 400: One-Half Cent Sales Tax Extension	7,672.6
ADOT Funds	7,454.6
MAG CMAQ and STP (Federal Highway)	460.9
Statewide Transportation Acceleration Needs (STAN)	189.3
Other Income	221.4
Bond and Loan Proceeds	3,570.3
Plus Beginning Balance	460.8
Less Debt Service and Other Expenses	(6,271.1)
Less Inflation Allowance	(3,486.1)
Total (2008 $'s)	**10,272.7**
USES OF FUNDS	
Category	**Estimated Future Costs: FY 2009-2026 (2008 Dollars)**
New Corridors	4,117.4
Widen Existing Facilities: Add General Purpose Lanes	3,905.8
Widen Existing Facilities: Add HOV Lanes	662.8
New Interchanges on Existing Facilities: Freeway/Arterial	146.7
New HOV Ramps on Existing Facilities: Freeway/Freeway	172.8
Maintenance, Operations, Mitigation and Systemwide Programs	913.3
Other Projects	80.2
Subtotal Proposition 400 Program	9,999.0
Proposition 300 Project Completion	9.3
Total (2008 $'s)	**10,008.3**

6.4 FREEWAY/HIGHWAY PROGRAM OUTLOOK

As discussed in previous Annual Reports, during the past several years major cost increases for the construction of roads, buildings and other capital facilities have been experienced in Arizona, and throughout the United States as well. While the rate of these increases has recently moderated incrementally, unit costs for right-of-way, construction materials, and project bids continue to be significantly in excess of what they were just a few years ago.

6.4.1 Program Cost Evaluation

Maricopa County has experienced an unprecedented escalation of construction costs for labor, petroleum products, construction materials and right of way between 2003 and 2008 which significantly increased the cost for individual projects in the Freeway/Highway Life Cycle Program.

Additionally, the current slowdown in Maricopa County's economy has resulted in substantially lower revenue collections than projected for both the Regional Area Road Fund (RARF) and Highway User Revenue Fund (HURF) revenues, which are used to fund the Freeway/Highway Life Cycle Program.

The Arizona Department of Transportation and MAG are cooperatively evaluating the cumulative impacts of these economic factors to determine the significance of their effects upon the cost, scheduling and delivery of the Life Cycle Program. A Cost Estimate Assessment is underway to analyze the current status of the RTP Freeway Program including the following items:

- Evaluation of the growth in construction and right-of-way costs between 2003 and 2008, and future trends for these project costs.

- Evaluation of project costs to determine how these costs have increased since the inception of the RTP Freeway Program.

- Determination of the portion of additional costs attributable to recent escalation of costs for construction labor, materials and right-of-way acquisition.

- Evaluation of freeway projects to determine if cost increases occurred due to unforeseen conditions (scope changes) resulting from updated design concept reports and expanded environmental studies.

- Updating RTP Freeway Program costs for each project based upon refined project requirements and updated construction and right-of-way costs.

The results of this evaluation will provide the cost data to evaluate potential adjustments to the RTP Freeway program.

6.4.2 Program Cost Trends

For the five-year period between 2003, when the Regional Transportation Plan was first adopted, and 2008, the Highway Construction Cost Index experienced a price increase of approximately 52 percent. For this same period, it has been estimated that, right-of-way costs have increased in the range of 82 percent, while the Consumer Price Index increased 16 percent. The overall inflation

factor for the Freeway/Highway Life Cycle Program is estimated to be in the range of 40 to 45 percent. During the original planning process in 2003, an overall inflation factor of 16 percent was assumed. In addition to the effects of price inflation, the refinement and, in some cases, enhancement of project design features have also resulted in cost increases. These design changes have been identified, as ADOT has proceeded with detailed engineering and environmental studies for projects contained in the Freeway/Highway Life Cycle Program.

These two components, price inflation and detailing of project scopes, have resulted in a significantly higher total cost for the Freeway/Highway Life Cycle Program. It has recently been estimated that the total cost of the program is now approximately $14.9 billion, compared to a planning estimate of $9.4 billion representing 2003 estimates. Funding available for construction over the full life cycle program period is currently estimated to total $11.6 billion. Therefore, the new program estimate exceeds available funding by approximately $3.3 billion (2008 $'s). This difference could be subject to future increases, depending on the outlook for inflation, facility design contingencies, further cost estimate refinements, and updated revenue forecasts.

It is estimated that the new total program cost of $14.9 billion consists of approximately the following components:

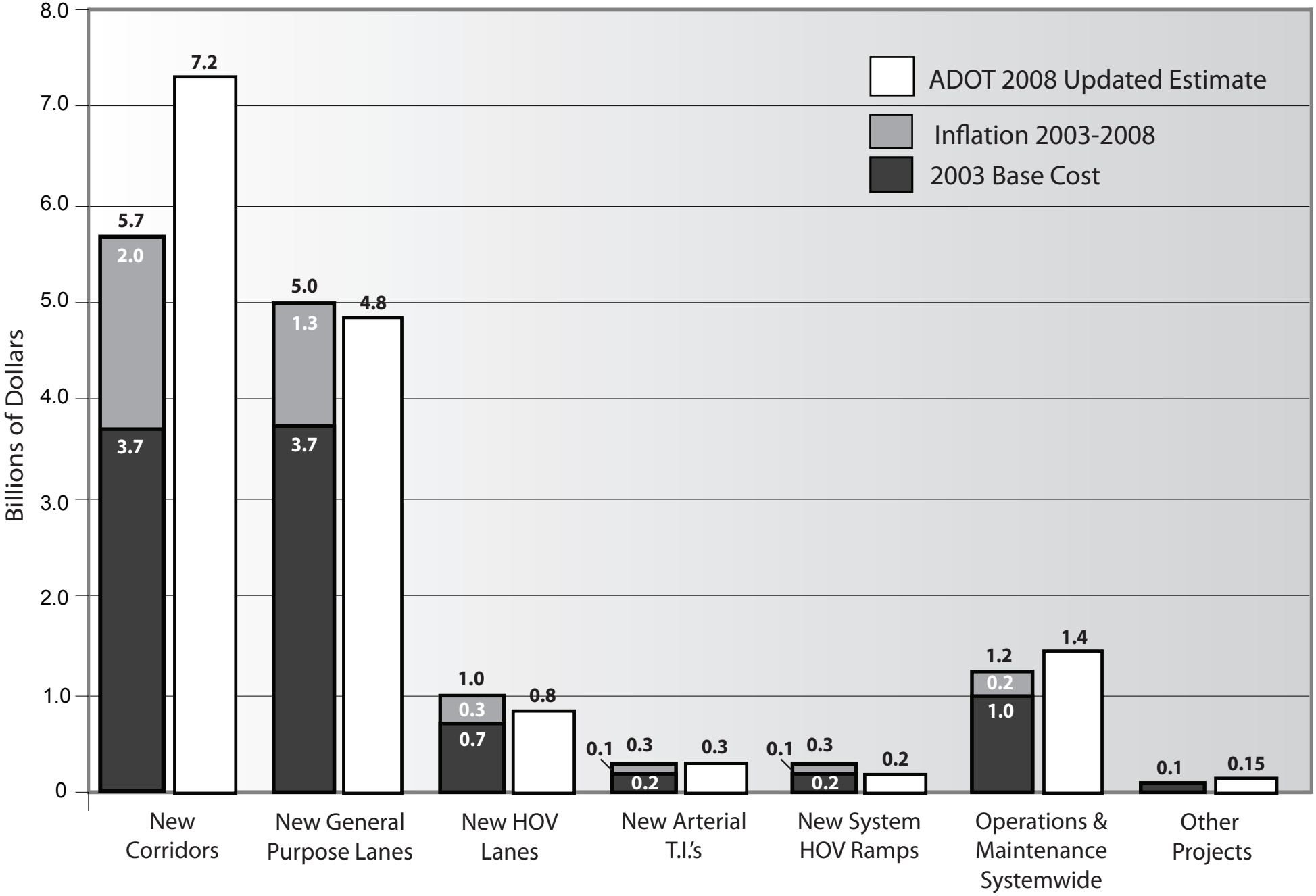
- $8.5 billion: 2003 planning level cost estimate. This figure reflects deduction of a 11.7 percent contingency, which was included in the 2003 planning level estimate. The contingency levels varied by project type with an overall level of 11.7 percent. The scope detailing amount below includes this original contingency allowance, plus additional scope enhancements.

- $3.7 billion: Inflation 2003 to 2008. This figure corresponds to the effects of price inflation on the 2003 planning cost estimate. The estimated overall inflation factor for the period 2003 to 2008 is 44 percent. During the original planning process a factor of 16 percent was utilized.

- $2.7 billion: Scope detailing. As part of the updating of costs, it has been estimated that the detailing of project scopes contributed $2.7 billion (2008 $'s) to the total cost increase. The contingency identified as part of the preparation of the 2003 planning level cost estimates was intended to cover future scope uncertainties. The $2.7 billion in scope detailing exceeded this provision by approximately $1.4 billion (2008 $'s). Viewed from another perspective, the scope detailing represents about 18 percent of the total updated cost of $14.9 billion, compared to the 11.7 percent contingency in 2003. As part of the scope detailing process, capacity improvements on I-10 between SR 51 and Loop 202/Santan Freeway and on I-17 between McDowell Rd. and the Arizona Canal were targeted at project budgets of $700 million and $1 billion, respectively. Figure 6-2

FIGURE 6-2

FREEWAY COST ASSESSMENT



shows the relationship of inflation, scope detailing and the updated Freeway/Highway Life Cycle Program estimates by project type. For each project type, the left bar indicates the original 2003 estimate plus inflation, while the right bar shows the revised 2008 estimate, which includes scope detailing. As may be observed, there is considerable variation in the relationship between these two estimates. This variation is due to the relative amount of uncertainty in design features and corridor conditions for the various project types.

For example, new corridors are highly complex undertakings that are affected greatly by factors that could not have been fully foreseen in planning level estimates. Therefore, projects connected with the development of totally new freeways have experienced the greatest effect from scope detailing, with the 2008 updated costs exceeding the 2003 inflated estimate by 27 percent. On the other hand, projects to add HOV lanes are relatively simple in nature and involve less uncertainty regarding design and corridor conditions. Accordingly, for projects connected with the addition of new HOV lanes, the 2008 updated costs are actually lower than the 2003 inflated estimate, by 22 percent. This also indicates that the original estimates were, perhaps, more conservative for this project type. For all project types taken together, the 2008 updated costs exceed the 2003 inflated estimate by about 9 percent.

6.4.3 Future Program Revisions

Given the potential deficit of approximately $3.3 billion for the Freeway/Highway Life Cycle Program, a major effort to achieve a balance between future program costs and available revenues will be required. This effort would include effective financing and cash flow management, phasing of project scopes, and plan and program adjustments as may be appropriate. Potential strategic approaches to achieving program balance could include:

- Financial approaches that enhance revenues during the program period, such as more aggressive bonding of future revenues and public/private partnerships.

- Project phasing strategies that produce project scopes and designs that are in scale with available funding, so that plan elements can be implemented within future funding levels.

- Extension of the planning and programming period using adopted priorities, which provides further funding for project implementation.

- Adjustment of project schedules, due to the extensive time required to complete environmental and design studies in certain corridors.

- In addition, assumptions regarding future inflation and design contingencies warrant thorough review, in view of the potential for continuing construction cost increases.

CHAPTER SEVEN

ARTERIAL LIFE CYCLE PROGRAM

The Arterial Life Cycle Program extends through FY 2026 and is maintained by the Maricopa Association of Governments (MAG) to implement arterial street projects in the MAG Regional Transportation Plan (RTP). The Program meets the requirements of State legislation calling on MAG to conduct a budget process to ensure the estimated costs of the programmed arterial street improvements does not exceed the total amount of revenues available for these improvements.

The Arterial Life Cycle Program (ALCP) provides MAG with a management tool to administer regional funding for arterial street improvements. The Program receives major funding from both the Proposition 400 half-cent sales tax extension and Federal highway programs. 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 level revenues.

Figure 7-1, as well as Appendix Tables B-1 and B-2, provides information on the locations and costs associated with Arterial Street Life Cycle projects. The projects depicted in Figure 7-1 are cross-referenced with the data in the tables by the code associated with each project.

7.1 STATUS OF ARTERIAL PROJECTS

The ALCP provides regional funding to widen existing streets, improve intersections, and construct new arterial segments. The program also provides information on MAG planning studies and project implementation of the regional arterial Intelligent Transportation System (ITS) Plan funded in the program.

It should be noted that the funding for the construction of arterial improvements is spread throughout the 20-year period covered by the Life Cycle Program. In certain cases, local governments plan to construct projects sooner than originally scheduled in the Regional Transportation Plan in response to local priorities and development issues. When this occurs, the local jurisdiction implementing the project will be reimbursed according to the original arterial street program schedule identified in the RTP adopted in November 2003, even though construction occurs earlier. In cases when a project is deferred, the reimbursement does not occur until work is completed.

The following sections provide an overview of the status of the projects in the Arterial Life Cycle Program (ALCP). In the discussion, emphasis is placed on reviewing work anticipated during the five year period from FY 2009 through 2013.

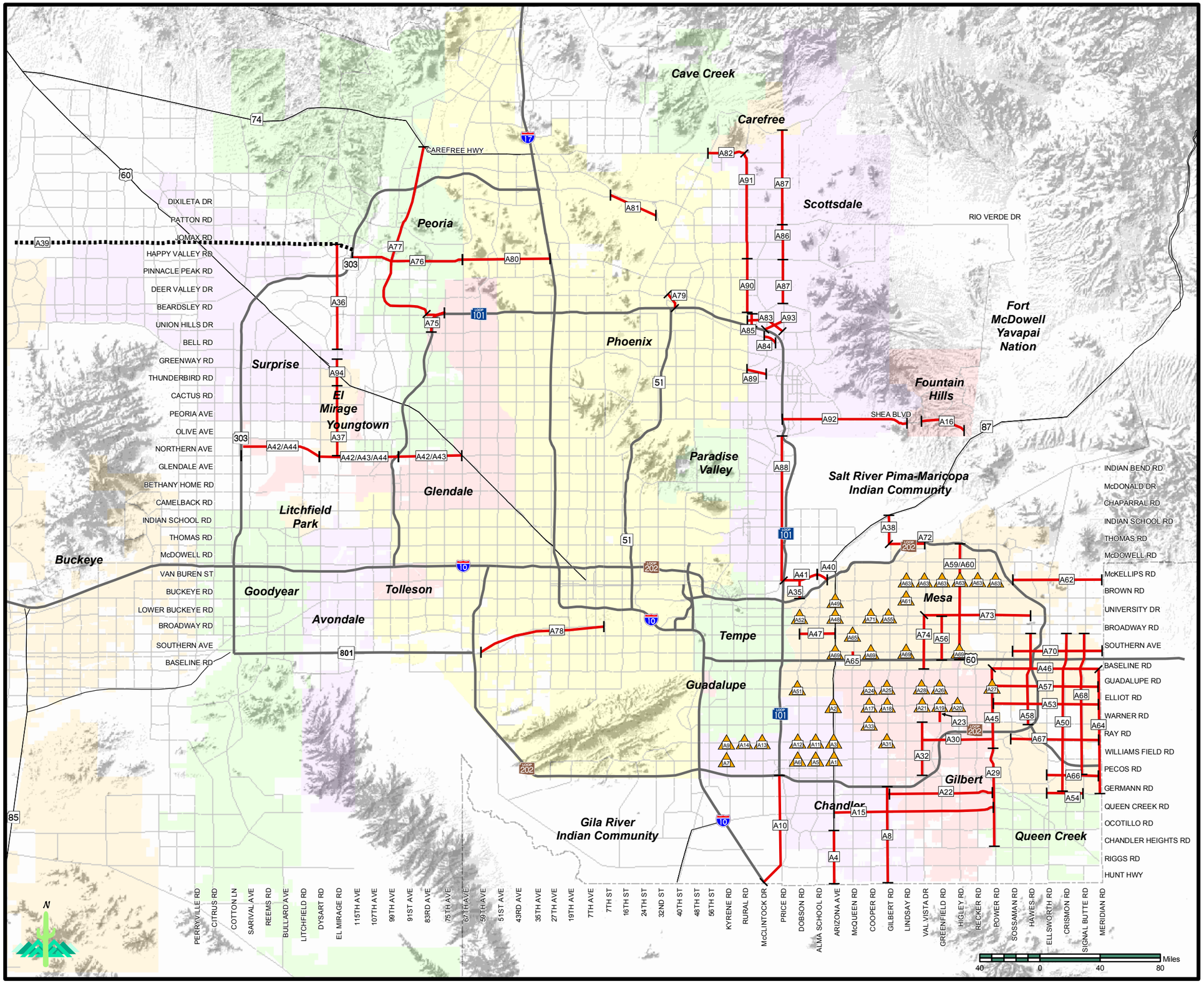


Figure 7-1

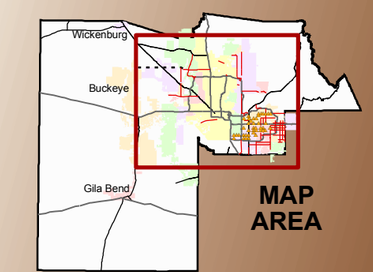
MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2008 Annual Report on Proposition 400

New/Improved Arterials

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

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.



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.

7.1.1 Arterial Capacity/Intersection Improvements

A total of 94 arterial capacity/intersection improvement projects were originally identified in the RTP and included in the Arterial Life Cycle Program. As the engineering process proceeds, the specific types of improvements are defined and detailed designs are prepared. The improvements may include: (1) widening of existing arterial streets (some of these projects will focus on intersection improvements); (2) extensive upgrading of facilities, such as the development of a parkway along Northern Avenue in the West Valley; (3) constructing new facilities on new alignments, such as the Sonoran Parkway in north Phoenix; and/or (4) improving individual intersections. After the detailing of project concepts and phasing, the original 94 projects have been segmented into a total of 178 individually defined projects.

During the period FY 2009 through FY 2013, work will proceed on 104 arterial street project segments. Various stages of work will be conducted on the projects and all segments may not be completed during this period. Arterial street segments that will undergo work (design, right-of-way acquisition or construction), including projects advanced by local governments from later stages of the program, are listed in Table 7-1. Of the 104 project segments underway between FY 2009 and FY 2013, 79 projects will have design activity, 80 projects will have right-of-way acquisition, and 81 projects will undergo construction at some time during the five-year period. Of these projects, 53 will undergo all three activities; i.e. design, right-of-way acquisition, and construction.

TABLE 7-1

ARTERIAL STREET PROJECTS UNDERWAY FY 2009 - 2013

PROJECT/SEGMENT	PROJECT/SEGMENT
Arizona Ave: Ocotillo Rd to Hunt Hwy	Northern Parkway: Agua Fria Bridge
Avenida Rio Salado: 7th St to SR 202L (So.Mt. Fwy.)	Northern Parkway: Corridorwide ROW Protection
Beardsley Connection: 101L to Beardsley/Lk. Plea. Pkwy.	Northern Parkway: Dysart to 111th
Black Mountain Blvd: SR-51 and 101L to Deer Valley Rd	Northern Parkway: Litchfield Overpass
Broadway Rd: Dobson Rd to Country Club Dr	Northern Parkway: Reems Overpass
Chandler Blvd at Kyrene Rd	Northern Parkway: Sarival Overpass
Chandler Blvd at Alma School Rd	Northern Parkway: Sarival to Dysart
Chandler Blvd at Dobson Rd	Pecos Rd: Ellsworth Rd to Meridian Rd
Country Club at Brown Rd	Pima Rd: Dynamite Blvd to Stagecoach Pass
Country Club at University Dr	Pima Rd: McKellips Rd to Via Linda
Dobson Rd at Guadalupe Rd	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd
Dobson Rd at University Dr	Pima Rd: Thompson Peak Pkwy to Pinnacle Peak Rd

TABLE 7-1 (continued)

Dobson Road Bridge over the Salt River	Power Rd at Pecos: Intersection Improvement
El Mirage Rd: Bell Rd to South of Beardsley Rd	Power Rd: Baseline Rd to East Maricopa Floodway
El Mirage Rd: South of Beardsley Rd to Deer Valley Rd	Power Rd: E. Maricopa Fldwy. to Santan Fwy/Loop 202
El Mirage Rd: Thunderbird Rd to Bell Rd	Power Rd: Santan Fwy to Pecos Rd
El Mirage Rd: Thunderbird to Northern Ave.	Queen Creek Rd: Arizona Ave to McQueen Rd
El Mirage Rd: Deer Valley Dr. to L303	Queen Creek Rd: Greenfield to Higley
Elliot Rd at Greenfield Rd	Queen Creek Rd: Lindsay Rd to Val Vista Drive
Elliot Rd at Val Vista Dr	Queen Creek Rd: McQueen Rd to Lindsay Rd
Germann Rd: Gilbert Rd to Val Vista Rd	Queen Creek Rd: Val Vista to Greenfield
Germann Rd: Val Vista Dr to Higley	Ray Rd at Alma School Rd
Gilbert Rd at University Dr	Ray Rd at Dobson Rd
Gilbert Rd: Chandler Heights Rd to Hunt Hwy	Ray Rd at McClintock Dr
Gilbert Rd: Queen Creek Rd to Chandler Heights Rd	Ray Rd at Rural Rd
Gilbert Rd: SR202L/Germann Rd to Queen Creek Rd	Ray Rd: Sossaman Rd to Ellsworth Rd
Gilbert Road Bridge over the Salt River	Ray Rd: Val Vista Dr to Power Rd
Greenfield Rd: Baseline Rd to Southern Ave	Scottsdale Rd: Pinnacle Peak to Happy Valley Rd
Greenfield Rd: Elliot Rd to Ray Rd	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Rd
Greenfield Rd: Southern Ave to University Dr	Shea at 120/124th Streets
Guadalupe Rd at Gilbert Rd	Shea at Via Linda (Phase 2)
Guadalupe Rd at Cooper Rd	Shea Auxiliary Lane from 90th St to Loop 101
Guadalupe Rd: Crismon Rd to Meridian Rd	Shea Blvd - 96th St to 144th St ITS Improvements
Guadalupe Rd: Hawes Rd to Crismon Rd	Shea Blvd - SR-101L to 96th St, ITS Improvements
Guadalupe Rd: Power Rd to Hawes Rd	Shea Blvd at 114th Street
Happy Valley Rd: 35th Ave to 43rd Ave	Shea Blvd at 115th Street
Happy Valley Rd: 43rd Ave to 55th Ave	Shea Blvd at 125th Street
Happy Valley Rd: 55th Ave to 67th Ave	Shea Blvd at 135th Street
Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave	Shea Blvd at 136th Street
Hawes Rd: Santan Fwy to Ray Rd	Shea Blvd at Frank Lloyd Wright Blvd
Kyrene Rd at Ray Rd	Shea Blvd: Palisades Blvd. to Fountain Hills Blvd.
Lake Pleasant Pkwy: Dynamite Blvd to L303	Shea Blvd: Technology Dr to Cereus Wash
Lindsay Rd at Brown Rd	Sonoran Blvd: Central Ave to 32nd St
Loop 101 North Frontage Rd: Hayden Rd to Scottsdale Rd	Southern Ave at Country Club Dr
McKellips Rd at Higley Rd	Southern Ave at Higley Rd
McKellips Rd at Lindsay Rd	Southern Ave at Lindsay Rd
McKellips Rd at Power	Southern Ave at Stapley Dr
McKellips Rd at Val Vista Dr	Stapley Dr at University Dr
McKellips Rd: Loop 101 to SRP-MIC/Alma School Rd	Thomas Rd: Gilbert Rd to Val Vista Dr
McKellips Road Bridge over the Salt River	Val Vista Dr: Baseline Rd to Southern Ave
Mesa Dr at Broadway Rd	Val Vista Dr: Southern Ave to University Dr
Mesa Dr: US60 to Southern Ave	Warner Rd at Greenfield Rd

7.1.2 Intelligent Transportation Systems (ITS)

The RTP allocates funding to assist in the implementation of projects identified in the Regional ITS Plan. The ITS projects smooth traffic flow and help the transportation system to operate more efficiently (see Appendix Table B-2 for project listing). An estimated $29 million (2008 $'s) in reimbursements from regional funds will be made for ITS projects between FY 2009 and FY 2013.

The focus of the arterial ITS program is to assist MAG member agencies with the development of their arterial traffic management systems to better address jurisdictional needs. The process for identifying and recommending arterial ITS projects for funding is overseen by the MAG ITS Committee. In the past, the ITS Committee has used an objective project rating system, which is linked to the region's ITS Strategic Plan and Regional ITS Architecture, to provide guidance in prioritizing projects.

7.2 ARTERIAL STREET PROGRAM CHANGES

During FY 2008, a number of fiscal adjustments were made to the Arterial Life Cycle Program (ALCP). Lead agencies deferred $46 million in federal and regional funding from FY 2008 to later years. Over $19 million is STP-MAG funds and almost $27 million of Proposition 400 half-cent sales tax extension revenues were deferred.

In addition to the fiscal adjustments to the ALCP, scheduling changes were also made in response to various project factors encountered by the implementing agencies. The changes are documented in Appendix Table B-3. Consistent with MAG ALCP Policies and Procedures, none of the changes affected total reimbursements by jurisdiction. Significant ALCP project scope changes that occurred in FY 2008 are listed below.

- SR101L South Frontage Rd. from Pima Rd./Princess Dr. to Hayden Rd.: Project was deleted from the ALCP at the request of the lead agency. The project was removed from the City of Scottsdale's Transportation Master Plan approved in January 2008. The programmed funds were allocated the Pima Rd. ALCP Project in Scottsdale.

- Pima Rd. from Thompson Peak Parkway to Cave Creek Rd.: Project segment limits extended to include Pima Rd from SR101 Loop to Thompson Peak Parkway. The funds programmed for the SR101L South Frontage Rd. project ($13 million) were allocated to the Pima Rd.: SR101L to Thompson Peak Parkway segment.

- Northern Parkway from Sarival Ave. to Grand Ave.: Project was re-scoped and re-segmented to correspond with the Design Concept Report approved

by the Northern Parkway Management Committee. Funding amounts programmed per project in the RTP were not affected.

- Shea Blvd. from SR101 Loop to SR87: Additional intersection improvements were added to the project and other intersection improvements were consolidated. Funds were reallocated from project savings to the additional intersection improvements. The amount of funding for the project did not change.

Appendix Table B-3 also lists completed ALCP projects. Completed projects include the following intersection improvements: Arizona Ave. at Chandler Blvd., Shea Blvd. at Mayo Blvd./134th St., and Shea Blvd. at 90th/92nd/96th Streets. Completed arterial street widening and capacity improvement projects occurred on Happy Valley Rd. from I-17 to 35th Ave., Val Vista Rd from Warner Rd. to Pecos Rd., and Lake Pleasant Parkway from Union Hills Dr. to Dynamite Rd.

7.3 ARTERIAL PROGRAM REIMBURSEMENTS AND FISCAL STATUS

7.3.1 Program Reimbursements

The Arterial Life Cycle Program (ALCP) is based on the principle of project budget caps. Under this approach, regional funding allocated to a specific project is fixed (on an inflation adjusted basis) in the Regional Transportation Plan. The budgeted amount must be matched by the implementing, or lead, agency with a 30 percent minimum contribution to the total project costs. Any project costs above the amount budgeted are the responsibility of the lead agency. Under this funding scheme, program administration focuses on tracking actual project expenditures and determining the corresponding regional share. As a result, data monitoring is primarily directed at regional funding reimbursements and total project expenditures.

The ALCP Policies and Procedures details the three required documents for each ALCP project - the Project Overview, the Project Agreement, and Project Reimbursement Requests. The Project Overview describes the general design features of the project, the implementation schedule, estimated costs, and the relationships among participating agencies. The Project Overview provides the basis for the preparation of the Project Agreement, which must be executed before the lead agency may be reimbursed from the program.

The Project Agreement is signed by the project's lead agency and MAG. The agreement is developed jointly between the lead agency and MAG and determines the responsibilities of each party. Generally, the Project Agreement is initiated by MAG once a Project Overview is submitted.

Project Reimbursement Requests may be submitted by jurisdictions once a Project Agreement has been executed. The Project Reimbursement Request

requires an invoice, progress report, and request for payment signed by the lead agency and MAG. The signed request for payment form is submitted to the Arizona Department of Transportation, who, in turn, reimburse the lead agency.

Table 7-2 provides a summary of past and estimated future regional funding reimbursements and total project expenditures for the Arterial Life Cycle Program. Detailed data showing regional funding reimbursements and estimated total expenditures at the project level is included in Appendix Tables B-1 and B-2. Future regional funding reimbursements have been factored to represent 2008 dollars. Local match elements of total future expenditures reflect currently available, real dollar estimates as of 2008, but may not have been specifically factored, in every case, to a base year of 2008.

As indicated in Table 7-2, a total of $50 million (YOE$) has been disbursed through FY 2008 for projects in the Arterial Life Cycle Program. An estimated $1.7 billion (2008 $'s) will be disbursed during the remainder of the program (FY 2009 through FY 2026). It should be noted that actual future project reimbursement amounts will be adjusted for inflation based on the Consumer Price Index, as adopted in the MAG Arterial Life Cycle Program Policies and Procedures. Total expenditures for projects, including local government expenditures, amounted to $107 million through FY 2008. The total future expenditures for the remainder of the program (FY 2009 through FY 2026) are estimated to reach $2.9 billion.

TABLE 7-2
ARTERIAL STREET LIFE CYCLE PROGRAM
SUMMARY OF EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Category	Regional Funding Disbursements			Total Expenditures		
	Disburse. through FY 2008 (YOE Dollars)	Estimated Future Disburse.: FY 2009-2026 (2008 Dollars)	Total Disburse.: FY 2006-2026 (2008 and YOE Dollars)	Expenditures through FY 2008 (YOE Dollars)	Estimated Future Expenditures: FY 2009-2026 (2008 Dollars)	Total Expenditures: FY 2006-2026 (2008 and YOE Dollars)
Capacity / Intersection Improvements	44.0	1,648.4	1,692.4	99.4	2,717.8	2,817.2
Intelligent Transportation Systems	5.6	54.1	59.7	7.9	77.3	85.2
Total	**49.6**	**1,702.5**	**1,752.1**	**107.3**	**2,795.1**	**2,902.4**

7.3.2 Future Fiscal Status

Table 7-3 summarizes the future funding sources and uses applicable to the Arterial Life Cycle Program for FY 2009 through FY 2026. Sources for the Life Cycle Program include the Proposition 400 half-cent sales tax extension ($1.4 billion); Federal Highway Congestion Mitigation and Air Quality (CMAQ) funds ($145 million); Federal Highway Surface Transportation Program (STP) funds ($922 million); and bond proceeds ($472 million).

(Note that the bonding program is still being adjusted with the objective of lowering the overall level of bonding for the Arterial Street Program.) Expenses totaling $619 million are deducted from the funding sources, representing estimated future debt service and repayment of other financing.

TABLE 7-3
ARTERIAL STREET LIFE CYCLE PROGRAM
FUTURE SOURCES AND USES OF FUNDS: FY 2009-2026
(2008 and Year of Expenditure Dollars in Millions)

SOURCES OF FUNDS	
Source	**Projected Future Regional Funding FY 2009-2026 (YOE Dollars)**
Proposition 400: One-Half Cent Sales Tax Extension	1,433.5
Federal Highway / MAG CMAQ	145.1
Federal Highway / MAG STP	922.4
Other Income	-
Bond and Loan Proceeds	472.1
Plus Beginning Balance	85.8
Less Debt Service	(619.4)
Less Inflation Allowance	(575.2)
Total (2008 $'s)	**1,864.3**
USES OF FUNDS	
Category	**Estimated Future Regional Disbursements: FY 2009-2026 (2008 Dollars)**
Capacity / Intersection Improvements	1,648.4
Intelligent Transportation Systems	54.1
Total (2008 $'s)	**1,702.5**

In addition an allowance for inflation of $575 million has been deducted (a discount factor of 3.0% was used for all years). Including a beginning balance of $86 million, this yields a net total of $1.9 billion (2008 $'s) for use on arterial street projects through FY 2026.

Table 7-3 also lists the estimated future regional funding reimbursements identified in the Life Cycle Program for the period FY 2009 through FY 2026. As shown, Life Cycle Program reimbursements are in balance with the projected available future funds, with funding in excess of disbursements by about ten percent.

7.4 ARTERIAL STREET PROGRAM OUTLOOK

The Arterial Life Cycle Program (ALCP) is based on the principle of project budget caps, with a fixed amount of regional funding allocated to individual projects (on an inflation adjusted basis). The total estimated future regional revenue reimbursements for ALCP projects are in balance with projected revenues, and it is anticipated that this balance can be maintained in the future.

On December 19, 2007, MAG adopted changes to the Arterial Life Cycle Program Policies and Procedures to facilitate smooth administration of the Arterial Street Program. Issues addressed included Regional Area Road Fund (RARF) Closeout, progress report content, and timelines to submit project overviews. In addition, on June 25, 2008 the FY09 ALCP project listing was adopted to reflect updated information regarding project development status. This version of the ALCP is reflected in the 2008 Annual Report.

During FY 2008, project overview reports were prepared by the lead agencies for 15 projects in the ALCP. Since the inception of the program, 40 project overviews have been submitted to MAG. These reports describe the general design features of the project, estimated costs, implementation schedules and relationships among participating agencies. The project overview reports provide the basis for preparation of project agreements, which must be executed before agencies may receive any reimbursements from the program.

A total of eight project agreements were executed in FY 2008. In all, 26 project agreements have been executed to date. For FY 2009, MAG Staff anticipates the execution of 17 additional agreements. Five jurisdictions received reimbursements for project work during FY 2008 totaling over $28 million. During FY 2009, MAG anticipates the reimbursement of $119 million to six jurisdictions for eligible project expenditures.

As a result of cost pressures and other implementation issues, the projects in the ALCP undergo continuing review by the implementing agencies. This has

resulted in revised project scopes on certain projects, such as the construction of intersection improvements instead of continuous widening of a facility, and/or adjustments in project limits. It has also resulted in the deferral of projects by implementing agencies (see Appendix Table B-3), due to the inability to provide matching funds, or other scheduling and resource issues. As indicated previously, lead agencies deferred $46 million in federal and regional funding from FY 2008 to later years. It is anticipated that project scope changes and deferments may continue to occur in the future, as local jurisdictions continue to face a variety of fiscal issues.

Another project implementation issue, which has been identified in the past, is the ADOT review process for projects receiving Federal funds. Concerns have been raised regarding the potential effects of this complex process on project implementation schedules. During FY 2008, MAG staff has continued to work closely with ADOT and member agencies to document and improve this process. MAG has developed a set of Draft MAG Federal Fund Programming Principles that will help guide the FY 2009 programming process. The purpose of the Principles is to establish a transparent set of programming principles for the competitive project selection process for MAG Federal funds, which clarify the application and programming process, ensure consistency with the SAFETEA-LU and CMAQ Federal Regulations, comply with the Regional Transportation Plan (RTP) policy directives, and encourage project completion.

CHAPTER EIGHT

TRANSIT LIFE-CYCLE PROGRAM

The Transit Life Cycle Program is maintained by the Regional Public Transportation Authority (RPTA) and implements transit projects in the MAG Regional Transportation Plan (RTP). The Program meets the requirements of state legislation calling on the RPTA to conduct a budget process that ensures the estimated cost of the Regional Public Transportation System does not exceed the total amount of revenues expected to be available. This includes expenses such as bus purchases and operating costs, passenger facilities, maintenance facilities, park-and-ride lot construction, light rail construction and other transit projects.

The Transit Life Cycle Program will receive major funding from the Proposition 400 half-cent sales tax extension, as well as federal transit funds and local sources. The half-cent sales tax extension started on January 1, 2006 and revenues from the tax were available beginning in March 2006. The RPTA maintains responsibility for administering half-cent revenues deposited in the Public Transportation Fund (ARS 48-5103) for use on transit projects, including light rail transit (LRT) projects as identified in the MAG RTP. The RPTA Board must separately account for monies allocated to light rail transit, capital costs, and operation and maintenance costs for other transit modes.

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 a partnership among the cities of Phoenix, Tempe, Mesa and Glendale to implement the 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. It should be noted that the RPTA often uses the term "*Valley Metro*" for the agency, having adopted the name in 1993 as the marketing identity for the regional transit system.

8.1 STATUS OF BUS PROJECTS

The Transit Life Cycle Program includes funding for operations, vehicle fleet and new capital facility improvements to the regional bus network. This includes Freeway Bus Rapid Transit (BRT)/Express, Arterial BRT, Supergrid, and other bus service. The following sections provide an overview of the status of the bus operations and capital projects in the Transit Life Cycle Program. In these discussions, the emphasis is placed on reviewing ongoing activities, as well as service additions anticipated during the next five years (FY 2009 through FY 2013).

8.1.1 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 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 and suburb to central city connections using the regional freeway system and intermediate stops. Figure 8-1 and Table C-1 provide information on the locations and costs associated with BRT/Express Transit Services. The routes depicted in Figure 8-1 are cross-referenced with the data in Table C-1 by the code associated with each route. Table 8-1 lists route termini as an aid in interpreting Figure 8-1.

Collectively, the Regional BRT/Express transit services account for a total of $231 million (2008 and YOE $'s) in regional funding for operating costs for the period FY 2006 through FY 2026 (see Table 8-4). This total represents approximately four percent of the total regional funding budget allocated for transit. There are a total of 31 BRT/Express routes identified for funding during the RTP planning period from FY 2006 through 2026. Since funding became available only during the latter part of FY 2006, no routes were implemented during that period. Two routes were implemented in FY 2008 and during the next five years, FY 2009 through FY 2013, an additional 9 routes are planned for implementation. These routes will generally operate in the peak direction at 30-minute intervals, during the three-hour morning and afternoon commute periods.

<u>Routes Implemented During FY 2008</u>

- North Glendale Express (T16); Service start: FY 2008.
- North Loop 101 Connector/Surprise to Scottsdale Airpark (T18); Service start: FY 2008.

<u>Routes Planned for Implementation During FY 2009 through FY 2013</u>

- East Loop 101 Connector (T12); Service start: FY 2009.
- Main Street Arterial BRT (T15); Service start: FY 2009.
- Papago Freeway Connector (T19); Service start: FY 2009.

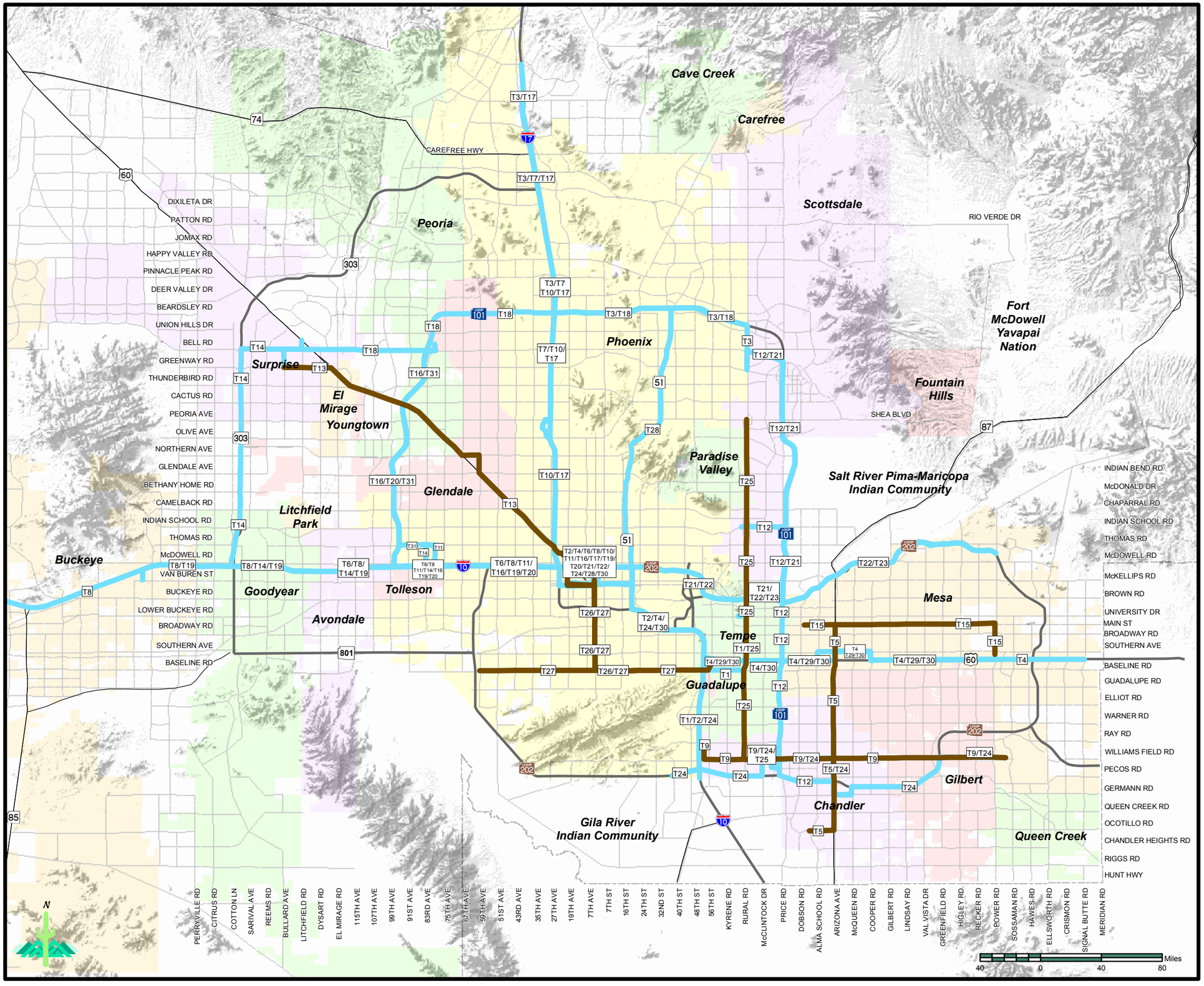


Figure 8-1

MARICOPA ASSOCIATION of GOVERNMENTS

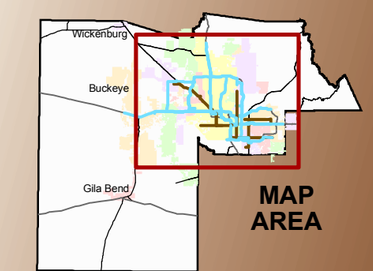
MAG 2008 Annual Report on Proposition 400

Bus Rapid Transit (BRT)

- Light Rail Transit Minimum Operating Segment
- Arterial BRT Routes
- Freeway BRT Routes
- Freeways
- Highways
- Other Roads
- County Boundary

Routes are conceptual and subject to change. Contact Valley Metro to obtain current status. Ongoing operational planning includes an extensive public outreach component.

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.



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
BUS RAPID TRANSIT/EXPRESS ROUTE TERMINI

Note: Route termini are listed as an aid in interpreting maps. Final routing subject to operational planning.

T1 Ahwatukee Connector

South terminus: 40th Street park & ride lot in Ahwatukee. North terminus: College Avenue Transit Center.

T2 Ahwatukee Express

South terminus: 40th Street park & ride lot in Ahwatukee. North terminus: State Capitol.

T3 Anthem Express

North terminus: Future park & ride lot at Anthem Master Planned Development. South terminus: Scottsdale Airpark.

T4 Apache Junction Express

East terminus: Future park & ride lot near Signal Butte Road and US60. West terminus: State Capitol.

T5 Arizona Avenue Arterial Bus Rapid Transit

South Terminus: Future Snediger Transit Center near Alma School Road and Ocotillo Road. North terminus: Sycamore & Main St LRT Station.

T6 Avondale Express

West terminus: Dysart Road park & ride lot in vicinity of Interstate 10. East terminus: State Capitol.

T7 Black Canyon Freeway Connector

North terminus: Park & ride lot at future regional shopping center at Carefree Highway and I-17. South terminus: Metro Center Transit Center.

T8 Buckeye Express

West terminus: Future park & ride lot located north of I-10 and approximately three miles west of the Sun Valley Parkway TI. East terminus: State Capitol.

T9 Chandler Boulevard Arterial Bus Rapid Transit

East terminus: Williams Gateway/ASU East Campus. West terminus: Galveston Street (Coyotes Ice Rink).

T10 Deer Valley Express (I-17 RAPID)

North terminus: Happy Valley Road park & ride lot. South terminus: State Capitol.

T11 Desert Sky Express (I-10 West RAPID)

West terminus: Desert Sky Transit Center. East terminus: State Capitol.

T12 East Loop 101 Connector

North terminus: Scottsdale Airpark. South terminus: Future Park & Ride near Germann Road & McQueen Road.

T13 Grand Avenue Limited

East terminus: Phoenix Central Station. West terminus: Surprise park & ride lot at Bullard Avenue.

T14 Loop 303 Express

North terminus: Arrowhead Towne Center. South terminus: Desert Sky Mall Transit Center.

T15 Main Street Arterial BRT

East terminus: Broadway and Power Road. West terminus: Light rail station at Sycamore Street.

T16 North Glendale Express

North terminus: Interim Arrowhead Towne Center. South terminus: State Capitol.

T17 North I-17 Express

North terminus: Future park & ride lot at Anthem Master Planned Development. South terminus: State Capitol.

T18 North Loop 101 Connector (Surprise to Scottsdale)

East terminus: Loop 101 and Scottsdale Road. West terminus: Surprise park & ride lot at Bullard Avenue.

T19 Papago Fwy Connector (to Buckeye)

West terminus: Future East Buckeye park & ride lot in the vicinity of Verado Way and Van Buren Street. East terminus: State Capitol.

T20 Peoria Express

North terminus: Peoria park & ride lot (south of Peoria Avenue, near Loop 101). South terminus: State Capitol.

T21 Pima Express

North terminus: Scottsdale Airpark. South terminus: State Capitol.

T22 Red Mountain Express

East terminus: Future Park & ride lot near Power Road and Loop 202. West terminus: State Capitol.

T23 Red Mountain Fwy Connector

East terminus: Future Park & ride lot near Power Road and Loop 202. West terminus: College Avenue Transit Center.

T24 San Tan Express

East terminus: Williams Gateway/ASU East Campus. West terminus: State Capitol.

T25 Scottsdale/Rural Arterial BRT

North terminus: Scottsdale Road and Shea Blvd. South terminus: Chandler Mall Transit Center.

T26 South Central Avenue

North terminus: State Capitol. South terminus: South Mountain Community College campus.

T27 South Central Avenue Arterial BRT (A Pattern)

North terminus: Phoenix Central Station. South terminus: Arizona Mills Transit Center.

South Central Avenue Arterial BRT (B Pattern)

North terminus: Phoenix Central Station. South terminus: 59th Avenue and Baseline Rd.

T28 SR 51 Express (SR51 RAPID)

North terminus: Desert Ridge park & ride lot. South terminus: State Capitol.

T29 Superstition Fwy Connector

East terminus: Superstition Springs Center. West terminus: Arizona Mills Transit Center.

T30 Superstition Springs Express

East terminus: Superstition Springs Center. West terminus: State Capitol.

T31 West Loop 101 Connector (to North Glendale P&R)

North terminus: Arrowhead Towne Center. South terminus: Desert Sky Transit Center.

- Red Mountain Express (T22); Service start: FY 2009.
- West Loop 101 Connector (T31); Service start: FY 2009.
- Desert Sky Express (T11); Service start: FY 2010.
- Arizona Avenue Arterial BRT (T5); Service start: FY 2011.
- Apache Junction Express (T4); Service start: FY 2011.
- Superstition Freeway Connector (T29); Service start: FY 2012.

8.1.2 Bus Operations: Supergrid

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 network addresses a major weakness of the current fixed route bus network. The operational efficiency of the current bus network is hampered by varying service levels across routes and jurisdictions, which is a direct result of the variability of local funding from jurisdiction to jurisdiction. The supergrid addresses this problem by regionally funding key routes at 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 current funding limitations at the local level. Figure 8-2 and Table C-2 provide information on the locations and costs associated with the regional bus grid. The routes depicted in Figure 8-2 are cross-referenced with the data in Table C-2 by the code associated with each route. Table 8-2 lists route termini as an aid in interpreting Figure 8-2.

Regional Grid bus operations account for a total of $1.2 billion (2008 and YOE $'s) in regional funding for the period FY 2006 through FY 2026 (see Table 8-4). This represents approximately 18.6 percent of the total regional funding budget allocated for transit. There are a total of 34 Regional Grid routes identified for funding during the RTP planning period from FY 2006 through 2026. Since funding became available only during the latter part of FY 2006, no routes were implemented during that period. One supergrid route was implemented during FY 2007 and two during FY 2008. During the next five years, FY 2009 through FY 2013, 8 routes are planned for implementation. In most cases these routes will operate in the peak direction at 15-minute intervals during the two-hour morning and afternoon commute periods, and at 30-minute intervals during the rest of the service day. In addition, 30-minute service on Saturday and Sunday would be provided.

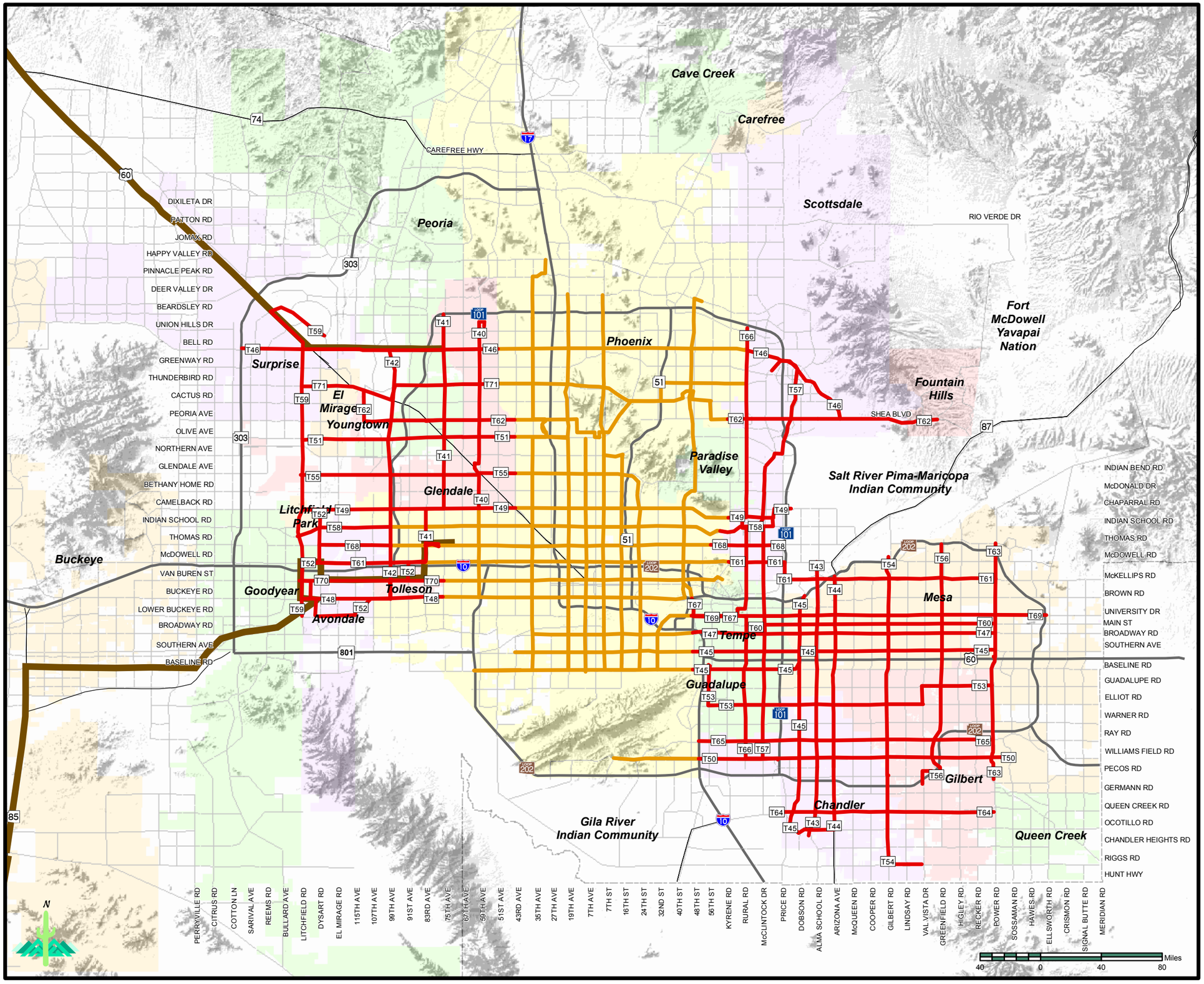


Figure 8-2

MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2008 Annual Report on Proposition 400

Super Grid Bus System

- Regional Grid Routes
- Grid Routes Funded by City of Phoenix
- New Rural Routes
- Freeways
- Highways
- Other Roads
- County Boundary

Routes are conceptual and subject to change. Contact Valley Metro to obtain current status. Ongoing operational planning includes an extensive public outreach component.

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.

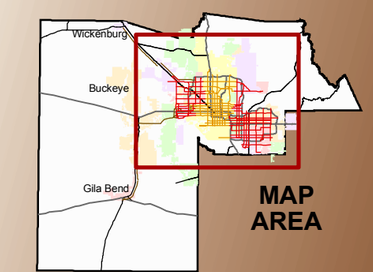


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TABLE 8-2
REGIONAL GRID BUS ROUTE TERMINI

Note: Route termini are listed as an aid in interpreting maps. Final routing subject to operational planning.

T40 59th Avenue

South terminus: Buckeye Road. North terminus: Midwestern University campus.

T41 83rd Avenue/75th Avenue

South terminus: Desert Sky Mall Transit Center. North terminus: Arrowhead Towne Center.

T42 99th Avenue

South terminus: Buckeye Road. North terminus: Bell Road.

T43 Alma School Road

South terminus: Future Snediger Transit Center near Alma School Road and Ocotillo Road. North terminus: McDowell Rd and Alma School Road.

T44 Arizona Avenue/Country Club Drive

South terminus: Future Snediger Transit Center near Alma School Road and Ocotillo Road. North terminus: McKellips Road and Center Street.

T45 Baseline Road

West terminus: 59th Avenue. East terminus: Dobson Rd.

Southern Avenue

West terminus: 43rd Avenue. East terminus: Superstition Springs Center.

Dobson Road

North terminus: Mesa Riverview near Dobson Road and Loop 202. South terminus: Future Snediger Transit Center near Alma School Road and Ocotillo Road.

T46 Bell Road

West terminus: Loop 303. East terminus: Shea Boulevard and Frank Lloyd Wright.

T47 Broadway Road

West terminus: Manzanita Speedway near 35th Avenue. East terminus: Superstition Springs Center.

T48 Buckeye Road

West terminus: Litchfield Road. East terminus: LRT station at 44th Street and Washington Street.

T49 Camelback Road

West terminus: Litchfield Road. East terminus: Scottsdale Community College.

T50 Chandler Boulevard

West terminus: Desert Foothills Parkway. East terminus: Williams Gateway Airport/ASU East Campus.

T51 Dunlap Avenue /Olive Avenue

West terminus: Litchfield Road. East terminus: Metrocenter Transit Center.

T52 Dysart Road

East terminus: Desert Sky Transit Center. West terminus: Camelback Road and Litchfield Road.

T53 Elliot Road

West terminus: Arizona Mills Transit Center. East terminus: Superstition Springs Center.

T54 Gilbert Road

South terminus: Riggs Road and Val Vista Drive. North terminus: McDowell Road.

T55 Glendale Avenue

West terminus: Litchfield Road. East terminus: State Route 51.

T56 Greenfield Road

South terminus: Val Vista Drive and Willis Road. North terminus: Thomas Road.

T57 Hayden Road/McClintock Drive

North terminus: Hayden Road and Raintree Drive. South terminus: Chandler Fashion Mall Transit Center.

T58 Indian School Rd

West terminus: Litchfield Road. East terminus: Granite Reef Road and Camelback Road.

T59 Litchfield Road

South terminus: Lower Buckeye Road/Goodyear Airport. North terminus: 128th Avenue and R.H. Johnson Boulevard.

T60 Main Street

West terminus: College Avenue Transit Center. East terminus: Superstition Springs Center.

T61 McDowell Road/McKellips Road

West terminus: Litchfield Road. East terminus: Power Road and future Loop 202 park & ride lot.

T62 Peoria Avenue/Shea Boulevard

West terminus: Thunderbird Boulevard. at 103rd Avenue. East terminus: Fountain Hills Boulevard.

T63 Power Road

South terminus: Rittenhouse Road. North terminus: Power Road at planned park & ride lot to Loop 202.

T64 Queen Creek Road

West terminus: Price Road. East terminus: Power Road.

T65 Ray Road

West terminus: Interstate 10. East terminus: Williams Gateway Airport/ASU East Campus.

T66 Scottsdale Road/Rural Road

North terminus: Loop 101. South terminus: Chandler Fashion Mall Transit Center.

T67 Tatum Boulevard/44th Street

South terminus: College Avenue Transit Center. North terminus: Desert Ridge Market Place.

T68 Thomas Road

West terminus: Estrella Mountain Community College. East terminus: Pima Road.

T69 University Drive (to Ellsworth Road)

West terminus: South Mountain Community College. East terminus: Ellsworth Road.

T70 Van Buren Street

West terminus: Litchfield Road. East terminus: Phoenix Zoo.

T71 Waddell Road/Thunderbird Road

West terminus: Litchfield Road. East terminus: Scottsdale Airpark.

Routes Implemented During FY 2008

- Glendale Avenue (T55); Service start: FY 2008.
- Chandler Boulevard (T50); Service start: FY 2008.

Routes Planned for Implementation During FY 2009 through FY 2013

- Main Street (T60); Service start: FY 2009.
- Dobson Road (T45); Service start: FY 2009.
- Southern Avenue (T45); Service start: FY 2009.
- Gilbert Road (T54); Service start: FY 2010.
- Power Road (T63); Service start: FY 2010
- Baseline Road (T45); Service start: FY 2011.
- Arizona Avenue/Country Club (T44); Service start: FY 2012.
- University Drive (T69); Service start: FY 2012

8.1.3 Bus Operations: Other

In addition to the BRT/Express and Regional Grid services, other services account for a total of $696 million (2008 and YOE $'s) in regional funding for operating costs for the period FY 2006 through FY 2026 (see Table 8-4). These services include rural/flexible routes, commuter vanpools, paratransit services, safety and security, operations and capital contingencies and RPTA planning and administration costs. Table C-3 provides information on the costs associated with these services. The services are described briefly below:

Rural/flexible Routes - This service type addresses the need to provide connections between the urban and rural communities of the county. Rural routes provide connections between remote communities and urban transit nodes and address a range of trip needs including work, shopping, education, and access to various community services. These services account for a total of $17 million (2008 and YOE $'s) in regional funding during FY 2006 through FY 2026 (see Table C-3).

Funding has been identified for two rural transit routes. One route operates between Gila Bend and West Phoenix and was initiated in FY 2006. The second route operates between Wickenburg and Glendale and was initiated in FY 2007.

Commuter Vanpools – The Commuter Vanpool Program operates as a personalized express service for commuters, and is managed by Valley Metro/RPTA through its complementary rideshare program. Commuter vanpools allow groups of commuters throughout the region to self-organize and obtain a vehicle from Valley Metro/RPTA to operate a carpool service. Vanpools can be very effective at serving suburban employment centers such as office parks and office campuses. Vanpooling is one of the Transportation Demand Management strategies many employers have implemented as a Trip Reduction Program measure. Through sponsorship and funding of a vanpool program, Valley Metro/RPTA aspires to maintain rider fares at a level that is attractive to the commuter and available to all employers and commuter groups in Maricopa County. Operating costs are fully recovered through fare revenues and are not subsidized.

ADA Paratransit Services – ADA paratransit services address the needs of disabled riders who cannot utilize fixed route bus service due to physical or cognitive disability. Paratransit service is demand-response and provides curbside pick-ups and drop-offs. This service is required by the Americans with Disabilities Act (ADA) for all ADA-certified patrons for all areas within three-quarter miles of a fixed route. These services account for a total of $251 million (2008 and YOE $'s) in regional funding during FY 2006 through FY 2026 (see Table C-3). During the next five years (FY 2008 through FY 2012), it is anticipated that $52 million (2008 $'s) will be expended to provide required ADA paratransit services.

Safety and Security – Funds are set aside to improve the safety and security of passengers and transit assets, including rolling stock and facilities. Specific expenditures will be programmed each year based on need and may include such items as closed circuit television at facilities, cameras on buses, and other needed infrastructure improvements.

Contingencies – Funds are set aside for operating and capital contingencies. This amount is equal to two and one half percent of the budget for operations and 3.75 percent of the budget for purchased capital (e.g. fleet) and 10 percent of constructed capital (e.g. park and rides). Any contingencies not spent revert back to the general fund to be re-programmed for other projects.

RPTA Planning and Administration – RPTA receives an allocation from the Regional Area Road Fund (RARF) for planning and administration. This pays for the overhead and administration costs and any regional or general planning costs that are not attributable to specific RTP projects.

8.1.4 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 and

timing of construction for 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.

The numerous capital projects affiliated with regional bus operations account for a total of $542 million (2008 and YOE $'s) during FY 2006 through 2026 (see Table 8-4). There is $33 million (2008 and YOE $'s) for contingency included in this amount. This infrastructure calls for the completion of 13 park-and-ride lots; 6 transit centers (4 bus-bay); 4 transit centers (6 bus-bay); 3 transit centers (for major activity centers); 4 new bus maintenance facilities and 2 facility upgrades; one dial-a-ride/rural bus maintenance facilities; a vanpool maintenance facility; the purchase of BRT Right-of-way and associated improvements and maintenance; 1,200 bus stop pullouts/improvements at various locations, and the implementation of ITS/VMS in 1,684 vehicles.

As of 2006, pre-design, design, and planning is underway on a number of park-and-ride facilities. Other maintenance and passenger facilities are to be implemented over the next several years. It is anticipated that a total of $228 million (2008 $'s) in regional funding will be expended during the next five years (FY 2009 through FY 2013) on bus capital facilities. The park and ride projects under development during this period will include the Peoria/Grand Park and Ride, the Glendale Park and Ride, and the Scottsdale/Loop 101 Park and Ride. Other capital projects that will be under development during this period include three transit centers, two operations and maintenance facilities, and improvements to approximately 270 bus stops.

8.1.5 Bus Capital: Fleet

Over the planning horizon associated with Proposition 400, fleet purchases account for a total of $1.2 billion (2008 and YOE $'s) during FY 2006 to FY 2026 (see Table 8-4). This includes the purchase of 2,110 buses for fixed route networks; 39 buses for rural routes; 1,212 Dial-a-Ride (DAR) vans for paratransit purposes; and 1,498 vanpool vans. There is $36 million (2008 and YOE $'s) contingency included. It is anticipated that a total of $310 million (2008 $'s) in regional funding will be expended during the period FY 2009 through FY 2013 on vehicle purchases. These purchases will include 489 fixed route buses, 63 express/BRT buses, 6 rural transit buses, 295 paratransit vehicles, and 350 commuter vans. These reflect both replacement and expansion vehicles.

8.1.6 Bus Planning Studies

The RPTA has a number of bus planning studies underway that will help define project and service concepts in greater detail and provide improved future cost

estimates. The timely completion of these planning efforts will be essential for the continued implementation of regionally funded transit service.

The Main Street Bus Rapid Transit (BRT) design study was substantially completed. The construction is being bid out and is not expected to be completed by the beginning of service operations in December 2008. The service will begin to coincide with the opening of the MOS light rail operations. Temporary stops/stations will be used in the interim. RPTA has submitted a "Very Small Starts" application to the Federal Transit Administration (FTA) for federal funding of this project.

RPTA continues work on the Arizona Avenue Design Concept Report and the Comprehensive Arterial BRT Study. Arizona Avenue will be the second BRT line implemented under the RTP. Service on this line is scheduled to begin in FY 2011. RPTA will be submitting a Very Small Starts application to the FTA for federal funding for this project in 2009. The Comprehensive Arterial BRT Study will define the operational parameters of the arterial BRT network. It will also define how the system will integrate with Supergrid, fixed route bus, and LRT service to maximize the operational efficiencies of these transit networks.

8.2 STATUS OF LIGHT RAIL TRANSIT PROJECTS

The Transit Life Cycle Program includes an extensive Light Rail Transit (LRT) component for the MAG Region. This covers support infrastructure for the LRT system, as well as future extensions of light rail corridors that are planned throughout the region. The construction of the 20-mile Minimum Operating Segment that was developed through the Central Phoenix/East Valley Major Investment Study (MIS) is not a part of the Transit Life Cycle Program, except for some funding for support infrastructure. Figure 8-3, as well as Tables C-6 and C-7, provide information on the locations and costs of light rail throughout the metropolitan area. Light Rail Transit projects account for a total of $3.0 billion (2008 and YOE $'s) in the Transit Life Cycle Program (see Table 8-4), which is approximately 45 percent of the total regional funding dedicated to transit. Of this amount, approximately $2.6 billion (2008 and YOE $'s) applies toward construction of route extensions, whereas the remaining $435 million (2008 and YOE $'s) applies to support infrastructure affiliated with the LRT system. None of the regional funding for LRT is allocated to operating costs.

8.2.1 Minimum Operating Segment

Although the construction of the Minimum Operating Segment (MOS) is not a part of the Transit Life Cycle Program, background information on this project is provided here to provide an overview of the entire LRT system planned for the region. The conceptualization of a light rail starter segment began with the completion of the Central Phoenix/East Valley Major Investment Study (MIS) in

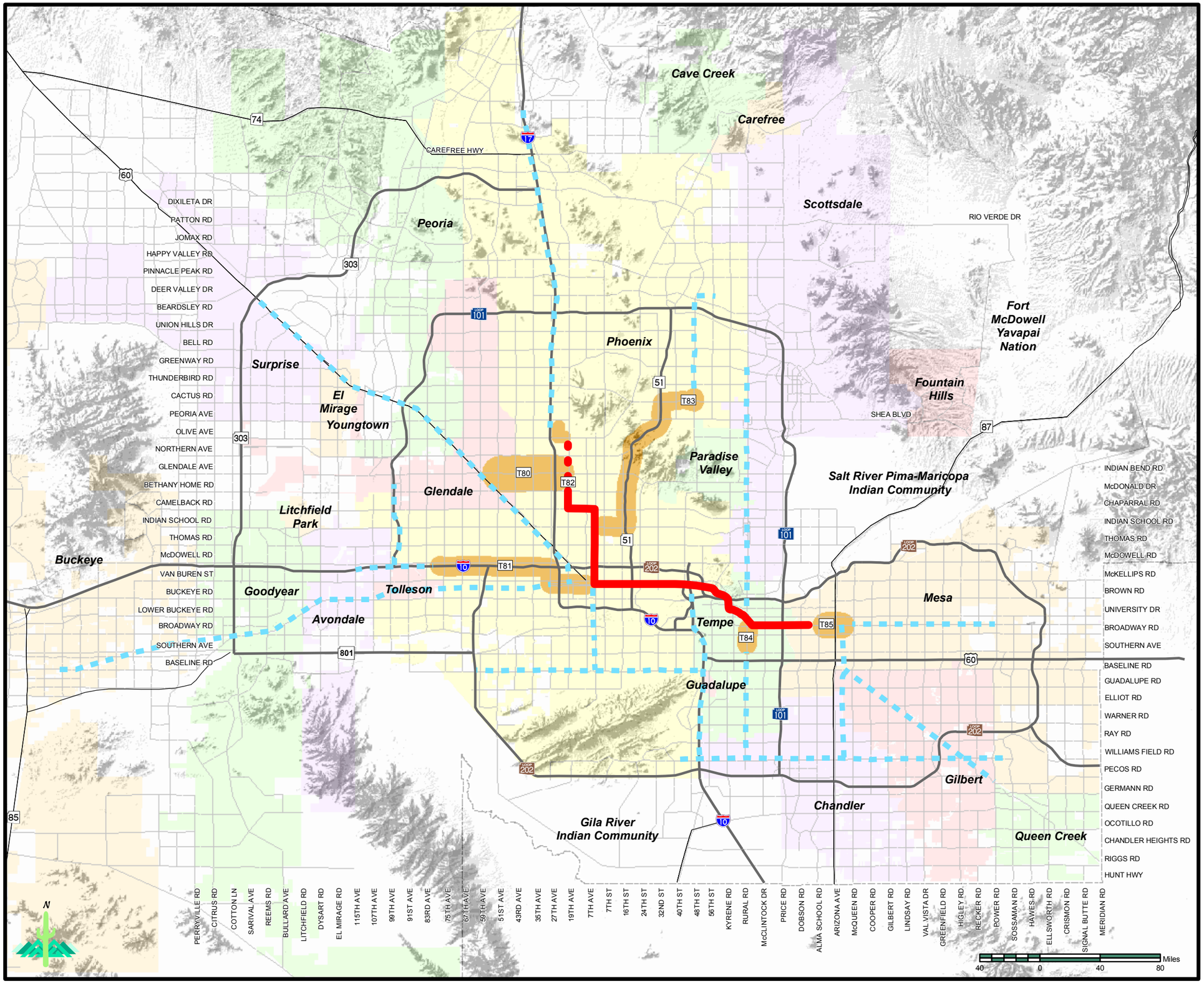


Figure 8-3

MARICOPA ASSOCIATION of GOVERNMENTS

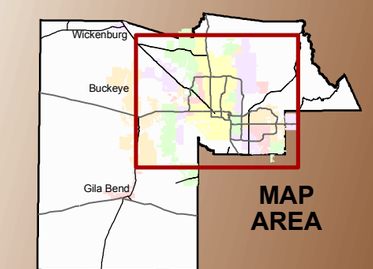
MAG 2008 Annual Report on Proposition 400

Light Rail Transit (LRT)/ High Capacity Transit

- Initial 20-mile Light Rail Segment
- Northwest Extension (Scheduled to open 2012)
- Future High Capacity/Light Rail Corridors for Further Study
- Eligible High Capacity Corridors
- Freeways
- Highways
- Other Roads
- County Boundary

The Transit Life Cycle Program does not include funding for the Eligible High Capacity Corridors

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.



MAP AREA

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1998. The purpose of the Central Phoenix/East Valley MIS was to identify transportation improvements designed to reduce existing and future traffic congestion, improve mobility options, and provide transportation alternatives in the corridor linking central Phoenix with the cities of Tempe and Mesa. The approved alignment for the Light Rail Transit (LRT) MOS starter segment extends from Bethany Home Road and 19th Avenue (formerly Chris-Town Mall, and recently renamed the Spectrum Mall) 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. The trains will run in both directions approximately 18 to 21 hours per day, seven days per week. The trains will initially operate every 10 minutes during peak hours and approximately every twenty minutes during off-peak hours.

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. A total of 27 station locations have been identified on the MOS alignment, with 21 scheduled for completion by opening day and six scheduled for development by 2010. Stations are generally located about a mile apart, but closer (1/2 mile

apart) in urban centers. 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.

8.2.2 Light Rail Transit: Support Infrastructure

Completion of support infrastructure affiliated with the LRT system accounts for a total of $435 (2008 and YOE $'s) in the Transit Life Cycle Program. Of this amount, $192 million (2008 and YOE $'s) applies toward infrastructure along the LRT MOS (to be expended by 2010); $75 million (2008 and YOE $'s) applies toward infrastructure needs on the Northwest Link, from 19th Avenue/Bethany Home to the Rose Mofford Sports Complex (to be expended by 2012); $33 million (2008 and YOE $'s) applies toward infrastructure needs on the Glendale Link from 19th Avenue/Bethany Home to Downtown Glendale (to be expended by 2017); and $136 million (2008 and YOE $'s) applies to other LRT improvements throughout the system (to be expended by 2026).

8.2.3 Light Rail Transit: Route Extensions

The Transit Life Cycle Program includes regional funding for the completion of six additional LRT segments on the system. These include a five-mile Northwest

Extension, which in FY 2007 was split into two phases; 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. Development of the route extensions account for a total of $2.6 billion (2008 and YOE $'s) during FY 2006 through FY 2026 (see Table 8-4).

It should 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 5309 funds will provide approximately half of the funding, with local sources providing the remaining half. Other than the funding for support infrastructure identified previously, it is not anticipated that half-cent funds will be applied to these segments. The status of development work on the route extensions is discussed below.

Design Criteria and Standards Study

This study will develop, update and refine Valley Metro Rail design criteria, standards, specifications, and CADD standards to reflect lessons learned from the Central Phoenix/East Valley LRT Project and to fully incorporate (or reference) all applicable local standards and requirements. The updated standards will be provided to all future LRT design consultants, to assure all standards are met, and to minimize future design efforts and costs.

LRT System and Configuration Study

The study will address three related areas: the I-10 West Corridor, the future configuration of the completed 57-mile light rail system, and address broad corridor issues in some specific corridors where resolution needs to address either multiple options, engineering challenges or technology issues. Phase I of the study was completed in 2007. Phase II of the study began in February 2008. Phase II includes modeling for the candidate corridors to estimate ridership and assess the cost effectiveness.

Extensions

The Northwest Extension Corridor Study is currently in the draft environmental impact phase (DEIS). In FY 2007 the extension was split into two phases. For Phase 1, preliminary engineering and the final environmental impact (FEIS) phase will likely occur in 2006-2007, with Final Design of the project following in 2007-2008, and right-of-way acquisition occurring in 2008-2010. Construction of the extension is currently projected to begin in 2010. Construction is expected to be complete for Phase 1 in FY 2012. Phase 2 is scheduled to be complete in FY 2017.

The Glendale Extension Study has compiled a notebook with three alignment options for the Glendale LRT extension identified in the RTP. The alignment options being evaluated include service from I-10 to the stadium complex north of Bethany Home Road, service to downtown Glendale, or service to the ASU west campus on Thunderbird Avenue. The affected cities are reviewing the technical information.

The Central Mesa corridor is currently in the Alternatives Analysis/Draft Environmental Impact Statement phase. The corridor extends from the end of line station for the initial 20 mile segment at Main Street and Sycamore in Mesa eastward to Power Road.

The I-10 West Extension is currently in the Alternatives Analysis/Draft Environmental Impact Statement phase. This corridor extends from Downtown Phoenix westward to 83rd Avenue.

The Tempe South extension is currently in the Alternatives Analysis/Draft Environmental Impact Statement phase. This corridor's study area is bounded by the Tempe branch of the Union Pacific Railroad on the west, Loop 101 on the east, Loop 202 (Red Mountain) on the north and Loop 202 (Santan) on the south.

8.3 TRANSIT PROGRAM CHANGES

During FY 2007, changes to the Transit Life Cycle Program affected certain bus service initiation dates and completion schedules for LRT extensions. No additional changes of this sort occurred in FY 2008. However, during FY 2008, several capital projects were eliminated, including the vanpool maintenance facility, the rural bus maintenance facility and the Phoenix dial-a-ride maintenance facility. Additionally, many of the contingencies in the program were eliminated or reduced in order to ensure that revenues exceeded expenditures. The resulting cost adjustments estimated for the Life Cycle Program components are summarized in Table 8-3. These changes are based on the total cost of the program elements as estimated in the 2007 Annual Report versus the total cost as estimated in the 2008 Annual Report. The net total of these cost changes amounts to $9 million.

8.4 TRANSIT PROGRAM COSTS, FUNDING AND FISCAL STATUS

8.4.1 Program Expenditures and Estimated Future Costs

Table 8-4 provides a summary of past expenditures, estimated future costs and total costs by major program category for the Transit Life Cycle Program. Detailed data on costs at the project level is included in Tables C-1 through C-7 in the appendix. It is important to note that, as a part of the expenditures for light rail, A.R.S. 48-5107 requires that all costs for relocation of utility facilities incurred after July 1, 2003 as a direct result of the construction and operation of a light rail project be reimbursed to the utility by the light rail project.

TABLE 8-3
FY 2009 - 2026 TRANSIT LIFE CYCLE PROGRAM COST CHANGES
(2007, 2008 and Year of Expenditure Dollars in Millions)

Category	2007 Annual Report Total Costs: FY 2006 - 2026 (2007 and YOE Dollars)	2008 Annual Report Total Costs: FY 2006 - 2026 (2008 and YOE Dollars)	Change in Total Costs: 2006 vs. 2007
Bus Operations: BRT/Express	262.1	230.6	(31.5)
Bus Operations: Regional Grid	1,030.4	1,180.4	150.0
Bus Operations: Other	894.1	696.1	(198.0)
Bus Capital Projects: Facilities	504.7	542.1	37.4
Bus Capital Projects: Fleet	1,145.0	1,158.4	13.4
Light Rail Transit: Support Infrastructure	412.5	435.3	22.8
Light Rail Transit Capital: Route Extensions	2,582.7	2,597.9	15.2
Total	**6,831.5**	**6,840.8**	**9.3**

* Included in bus facilities and bus fleet categories in 2007 Annual Report.

TABLE 8-4
TRANSIT LIFE CYCLE PROGRAM
SUMMARY OF EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Category	Expenditures through FY 2008 (Year of Expenditure Dollars)			Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Costs: FY 2006 - 2026 (2008 and YOE Dollars)
	Operations	Capital Investments	Total		
Bus Operations: BRT/Express	3.1	--	3.1	227.4	230.6
Bus Operations: Regional Grid	16.6	--	16.6	1,163.8	1,180.4
Bus Operations: Other	73.5	--	73.5	622.6	696.1
Bus Capital Projects: Facilities	--	68.8	68.8	473.3	542.1
Bus Capital Projects: Fleet	--	149.7	149.7	1,008.7	1,158.4
Light Rail Transit: Support Infrastructure	--	177.7	177.7	257.6	435.3
Light Rail Transit Capital: Route Extensions		39.2	39.2	2,558.7	2,597.9
Total	**93.3**	**435.4**	**528.7**	**6,312.1**	**6,840.8**

As indicated in Table 8-4, the total estimated cost for the Transit Life Cycle Program for the period FY 2006 through FY 2026 is $6.8 billion (2008 and YOE $'s). Expenditures through FY 2008 total $529 million (YOE $'s), while estimated future costs total $6.3 billion (2008 $'s). The estimated future costs represent a 4.5 percent decrease over the figure of $6.6 billion (2007 $'s) provided in the 2007 Annual Report.

8.4.2 Future Fiscal Status

Table 8-5 summarizes the future funding sources and uses that apply to the Transit Life Cycle Program for the period FY 2009 through FY 2026.

TABLE 8-5
TRANSIT LIFE CYCLE PROGRAM
FUTURE SOURCES AND USES OF FUNDS: FY 2009-2026
(2008 and Year of Expenditure Dollars in Millions)

SOURCES OF FUNDS	
Category	**Projected Future Funding: FY 2009-2026 (YOE Dollars)**
Proposition 400: One-Half Cent Sales Tax Extension	4,546.2
Regional Area Road Fund	97.6
Federal Transit / 5307 Funds	1,593.1
Federal Transit / 5309 Funds	1,725.0
Federal Highway/ MAG CMAQ	388.9
Other Income	406.8
Bond and Loan Proceeds	1,117.4
Bus Farebox Revenues	519.4
Plus Beginning Balance	15.7
Less Debt Service	(1,502.3)
Less Inflation Allowance	(2,592.7)
Total (2008 $'s)	**6,315.1**
USES OF FUNDS	
Category	**Estimated Future Costs: FY 2009-2026 (2008 Dollars)**
Bus Operations: BRT/Express	227.4
Bus Operations: Regional Grid	1,163.8
Bus Operations: Other	622.6
Bus Capital Projects: Facilities	473.3
Bus Capital Projects: Fleet	1,008.7
Light Rail Transit: Support Infrastructure	257.6
Light Rail Transit Capital: Route Extensions	2,558.7
Total (2008 $'s)	**6,312.1**

Funding sources available for this period are estimated to total $6.3 billion (2008 $'s). These sources include the Proposition 400 half-cent sales tax extension ($4.5 billion); Regional Area Road Fund transfer ($98 million); Federal Transit/5307 funds ($1.6 billion); Federal Transit/5309 funds ($1.7 billion); Federal Highway/CMAQ funds ($389 million); other income from local sources ($407 million); bond and loan proceeds ($1.1 billion); and bus farebox revenues ($519 million). Expenses totaling $1.5 billion are deducted from these sources, covering estimated future debt service. In addition, an allowance for inflation of $2.6 billion is deducted. Including a beginning balance of $16 million, this yields a net total of $6.3 billion (2008 $'s) for use transit projects and programs through FY 2026.

Table 8-5 also lists the estimated future uses identified in the Life Cycle Program for the period covering FY 2009 through FY 2026. As shown, for the remainder of the Transit Life Cycle Program, which covers the period FY 2009 through FY 2026, projected revenues are in balance with future projects costs, but with very little left at the end of the program. Costs are continuing to rise faster than anticipated and revenues are not expected to keep pace, at least in the short term.

8.5 TRANSIT PROGRAM OUTLOOK

The Transit Life Cycle Program, which covers FY 2006 through FY 2026, started on July 1, 2005. The primary goal of the life cycle program is to ensure the development and implementation of all transit projects, as identified in the MAG RTP. A continuing requirement of the life cycle process will be to maintain this balance, through effective financing and cash flow management, value engineering of projects, and Plan and Program adjustments as may be necessary.

New express and local/supergrid services continue to be implemented on schedule, despite the recent decline in excise tax revenues. Every effort has been made to ensure that the implementation schedule for services is not impacted by the downturn in the economy, especially given that transit demand has increased significantly due to the increase in gas prices. For the remainder of the Transit Life Cycle Program, which covers the period FY 2009 through FY 2026, projected revenues are in balance with future projects costs, but with very little left at the end of the program. Costs are continuing to rise faster than anticipated and revenues are not expected to keep pace, at least in the short term. If revenues continue to decline, service implementation may be impacted in the future. Additionally, services that have been implemented will be reviewed to ensure that productivity goals are met. Unproductive services will be analyzed in detail to determine whether they should be modified, reduced or eliminated.

Given recent trends of escalating wages and fuel prices, pressure will increase to balance operations costs with available revenues. Similarly, recent increases for

right-of-way and construction materials will continue to drive up costs for transit capital facilities, as they have in the freeway and arterial programs. Costs for the Transit Life Cycle Program will need to be evaluated on a continuing basis as the program is implemented, and program adjustments made as warranted in order to maintain the cost/revenue balance.

RPTA will be examining closely the assumptions used in estimating both revenues and expenditures for the Transit Life Cycle Program during FY 2009. The issues include inflation assumptions, federal revenue estimates, bus fare revenue estimates, service costs and contingencies. If transportation excise tax revenue estimates decline, it is likely that service implementation will be affected. Financing for capital projects is assumed in the program, however the cost of borrowing will be considered carefully against the cost of delaying capital facilities construction to ensure that funds are expended appropriately.

In addition, a large part of the funding for the LRT system extensions and for bus purchases is assumed to be from awards by the US Department of Transportation through the discretionary program. This funding is over-and-above the Federal funding contained in the 20-mile starter system Full Funding Grant Agreement. The timing and amounts of light rail transit New Start monies coming to the MAG region will be subject to a highly competitive process at the federal level. The prospects for awards from this program will require careful monitoring. Discretionary funding for the bus capital program is also highly competitive and the assumptions in the Transit Life Cycle Program will be reviewed carefully to ensure they are not overly aggressive. The pending reauthorization of SAFETEA-LU will also impact when and how FTA funding flows to the region.

CHAPTER NINE

TRANSPORTATION SYSTEM PERFORMANCE

Proposition 400 legislation set forth the factors to be considered during the development of the MAG Regional Transportation Plan (RTP), such as the impact of growth on transportation systems and the use of a performance-based planning approach. Consistent with State legislation, the development of the MAG Regional Transportation Plan (RTP) included a performance-based planning and programming process. This process established goals, objectives and performance measures for developing various options and evaluating potential scenarios to be included in the Plan. MAG, continuing to place emphasis on performance-based planning, has established an ongoing Transportation System Performance Monitoring and Assessment Program. Since the implementation of the RTP is in its early stages, the material presented in this chapter represents the beginning phase of the monitoring and assessment program, and will be extended and enhanced in the future as the program is refined.

9.1 PERFORMANCE MONITORING AND ASSESSMENT CONCEPTS

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.

9.1.1 Monitoring Current Conditions

The optimum combination of accuracy and detail for performance measurement is based on real time, observed data sources. This data provides the information to assess the principal operating characteristics of the current transportation system and to establish a historical record that tracks performance trends over time. The specific parameters observed vary by the transportation mode and must take into consideration the practicality and expense of collecting data on a continuing basis. The latter factor is particularly important if a historical record is to be established that allows effective analysis of performance trends. In the MAG Region, the ADOT FMS (Freeway Management System) provides a rich source of archived operations data for the freeway system.

As it continues to grow, this archive, will allow the use of these data for future reliability performance calculations.

For roadway systems, typical data collected to assess current performance includes: vehicle counts at a sample of locations; vehicle densities along various roadway segments; speeds and point-to-point travel times; intersection queue lengths and delays; and number and types of accidents. For transit systems, common data items cover: boardings and farebox revenues by route; on-board passenger loadings at various points in the system; operating costs; and service reliability.

9.1.2 Forecasting Future Performance

The second key aspect of performance monitoring and assessment is the analysis of future conditions on the transportation system. An understanding of potential future performance status provides valuable input into the decision-making process for prioritizing expansions or other improvements to the system. Forecasts of travel on the roadway and transit system are developed through the use of computer simulations of the future transportation network. These simulations are based on assumptions regarding potential future improvements to the transportation system, projections of future population levels, and other critical factors such as land use densities and patterns. The use of computer simulations allows the testing of various network options to determine how future system performance is affected by alternative investment strategies. The models have the capability to produce simulated data for all the same factors that are collected as part of the monitoring process, as well as additional data that would be impractical or too costly to collect.

Transportation network simulation models are also used to assess the impact of improvements compared to “no-build” conditions. This capability is especially important in a high growth area such as the MAG region. Under high growth conditions, the performance of the transportation system my decline even though improvements are made, due to increased travel demand brought on by the growth in housing units and population. However, conditions may have been much worse, if improvements had not been made. Network simulation models provide the capability to analyze conditions with and without improvements, allowing an assessment of project performance relative to a “no-build” option.

9.2 ROADWAY SYSTEM PERFORMANCE

A broad range of monitoring data on the performance of the roadway system in the MAG area has been collected over the years. These data collection efforts have addressed a variety of performance factors and have enabled historical comparisons to be made. In addition, the MAG Travel Demand Model has been applied routinely to assess future performance of the roadway network.

9.2.1 Roadway Monitoring Data

Currently traffic data is available for the MAG Region from various recently completed studies and surveys. These include: the 2003 and 2007 Travel Time and Speed Study, the 2006 Weekday Traffic Volume Study and Database, the 2006 Regional Freeway Bottleneck Study, the 2006 Freeway Level of Service Study, the Phoenix External Travel Survey, and the Freeway Travel Conditions and Trends Study. During the 2007-2008 Fiscal Year, a number of additional studies are being conducted, including: the ADOT Freeway Management System (FMS) Detector Accuracy Evaluation, the 2007 Origin and Destination Survey, the GIS-T Phase II Study, and the Internal Truck Travel Survey.

In the MAG region, ADOT's Freeway Monitoring System (FMS) is operational on the majority of the urbanized area freeway system, collecting volume and speed data per lane. In addition, MAG has been conducting Travel Time and Speed Studies since 1976, with the most recent study completed in 2007.

Table 9-1 summarizes travel time data between Central Business District (CBD) locations within the MAG area comparing data among the 1986, 1993, 2003 and 2007 studies. Data collected reflects travel occurring in the arterial and freeway systems. Every attempt has been made to keep the data collection process as consistent as possible from study to study. However, it is important to note that route selection between CBD's, as well as and other methodological factors, may vary somewhat among the studies, affecting observed travel times.

National and regional economic conditions have changed between FY2007 and 2008. Recently reported economic indicators point at a reduction in automobile use due to higher fuel costs, and at a reduction in HURF (Highway User Fund) revenues primarily due to a decrease in volume and registration of motor carriers. Additionally, Arizona's economy has reached near recession levels partly related to stagnant job growth and a prolonged housing market slowdown. These changes have had an effect in VMT (vehicle miles traveled) and congestion measures, as well as an impact in transit ridership measures.

9.2.2 Roadway Performance Forecasts

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-art 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.

TABLE 9-1
PLACE TO PLACE (CBD to CBD) PM TRAVEL TIME MATRIX
(TRAVEL TIME IN MINUTES)

	TO															
	Phoenix				Tempe				Scottsdale				Glendale			
FROM	1986	1993	2003	2007	1986	1993	2003	2007	1986	1993	2003	2007	1986	1993	2003	2007
Phoenix	--	--	--	--	21.8	19.6	20.2	23.2	30.2	26.8	22.2	24.5	19.6	22.0	26.3	24.6
Tempe	19.6	16.1	15.4	19.6	--	--	--	--	18.2	18.4	17.8	13.3	37.4	31.4	36.9	41.9
Scottsdale	26.2	27.0	19.4	23.9	17.1	16.8	17.4	14.9	--	--	--	--	39.8	40.7	40.9	42.6
Glendale	23.8	21.3	20.5	21.8	36.4	31.2	31.5	37.1	35.4	38.3	33.5	35.9	--	--	--	--
Peoria	31.9	27.9	25.8	26.1	44.5	37.8	36.8	41.9	46.5	46.0	38.8	40.8	8.1	9.0	11.5	8.9
Gilbert	36.7	32.0	27.3	30.2	22.5	25.9	20.2	21.0	40.2	38.6	26.7	24.2	49.9	48.1	48.8	52.5
Chandler	39.5	30.4	29.1	31.3	25.3	24.6	21.9	21.0	43.0	37.3	28.4	24.0	52.7	46.4	50.5	53.6
Mesa	40.1	27.3	20.0	25.7	20.4	11.5	12.2	13.2	46.5	23.9	18.2	15.9	46.2	43.4	41.5	47.5

	TO															
	Peoria				Gilbert				Chandler				Mesa			
FROM	1986	1993	2003	2007	1986	1993	2003	2007	1986	1993	2003	2007	1986	1993	2003	2007
Phoenix	27.3	29.5	33.7	30.5	29.1	33.8	37.7	41.5	31.5	32.8	38.0	42.1	39.2	27.2	29.5	29.6
Tempe	45.1	37.7	43.5	47.8	21.4	25.0	23.7	24.1	23.9	25.5	24.1	24.7	17.4	12.7	16.7	14.3
Scottsdale	47.5	47.5	47.5	48.7	34.0	37.9	29.9	33.1	36.4	38.3	30.2	33.5	28.4	24.4	21.8	20.7
Glendale	7.7	7.5	10.6	8.7	47.7	47.1	48.9	57.0	50.1	46.0	49.3	56.6	44.0	40.5	40.7	43.5
Peoria	--	--	--	--	55.8	53.7	54.2	61.7	58.2	52.6	54.6	61.4	52.1	47.1	46.0	48.2
Gilbert	57.6	54.4	54.6	58.4	--	--	--	--	10.7	9.9	11.7	11.4	15.4	16.1	14.1	15.5
Chandler	60.4	52.7	56.4	59.5	9.3	9.9	13.8	10.2	--	--	--	--	17.8	13.4	19.8	16.6
Mesa	53.9	49.7	48.1	53.4	15.4	17.6	15.2	16.6	18.2	16.5	18.7	18.4	--	--	--	--

Modeling Scenarios

- 2007 Current Year Scenario - For this scenario the highway, arterial and transit networks reflect the current year 2007. This network reflects conditions after implementing a number of projects identified in the RTP, as well as 2007 travel demand. The socio-economic data that generates the travel demand for this scenario is based on the 2007 Update to the Socioeconomic Projections accepted by the MAG Regional Council in June of 2003.

- 2030 RTP Plan Scenario - The network used for this model run includes all the projects in the RTP Plan and utilizes MAG's 2007 Update to the Socioeconomic Projections for the year 2030.

- 2030 No-Build Scenario - The purpose of this scenario is to quantify the performance of the system without including the RTP major investments and asses the impact on levels of service. This scenario uses the same socioeconomic data for 2030 as that used for the RTP scenario, but does not include the regionally funded freeway and arterial system improvements identified in the RTP.

Roadway Performance Measures: 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 2007 Current Base Year, the 2030 RTP and the 2030 No-Build. All data is for the Maricopa County portion of the MAG transportation modeling area. Table 9-2 provides a comparison of key system level parameters and performance measures for the four scenarios that were modeled.

- Supply Measures – The measure of the supply of roadway capacity in the region included in Table 9-2 are: freeway and arterial lanes miles and capacity miles. In addition, 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 9-2, there is an increase of approximately 49 percent in freeway capacity between the 2007 Base Year and the 2030 RTP, while the arterial capacity increases by about 95 percent. For the No-Build network these values are 3.5 and 95 percent, respectively.

- Demand Measures - The demand measure identified in Table 9-2 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 9-2. Compared to the 2007 Base Year, VMT on freeways and arterials in the 2030 RTP system are projected to increase by 80 and 82 percent, respectively. For the No-Build scenario, the VMT increases are 35 percent and107 percent, respectively, reflecting the increased burden of traffic that arterials must

TABLE 9-2
PERFORMANCE MEASURES BASED ON 2007 MAG MODEL RESULTS*
(Maricopa County Portion of MAG Modeling Area)

	Scenario		
Measures	**2007 Base**	**2030 RTP**	**2030 No Build**
Population	3,950,000	6,188,320	6,188,320
Supply Measures			
Lane-Miles			
Freeways	1,925	2,866	1,993
Arterials	10,196	19,895	20,022
Capacity Miles			
Freeways	53,900,000	80,248,000	55,804,000
Arterials	86,666,000	169,107,500	170,187,000
Demand Measures			
Daily Vehicle-Miles (VMT)			
Freeways	33,229,228	59,848,778	44,959,870
Arterials	45,512,919	82,986,979	94,160,848
Level of Service Measures			
Congested Lane-Miles			
Freeways	716	1,550	1,322
Arterials	1,027	2,079	3,498
% Congested Lane-Miles			
Freeways	37.2	54.1	66.3
Arterials	10.1	10.4	17.5
Daily Congested VMT			
Freeways	18,206,821	40,324,598	36,079,463
Arterials	8,517,734	17,980,713	30,264,152
% Daily Congested VMT			
Freeways	54.8	67.4	80.2
Arterials	18.7	21.7	32.1
Total Vehicle Hours of Delay			
Hours of Delay	694,577	1,650,380	2,436,163
Hrs.Delay per 1000 VMT	8.8	11.6	17.5

* Results are derived from Base Year 2007, 2030 RTP and 2030 NO-BUILD MAG model run November 2007.

carry due to lack of freeway improvements. In comparison to these figures, total population in the MAG area is projected to increase by approximately 55 percent between 2007 and 2030.

- Level of Service (LOS) Measures - A number of LOS measures are included in Table 9-2 for the three modeled scenarios, including congestion on freeways, congestion on arterials, and vehicle hours of delay. Congested freeway and arterial segments are those with LOS E-F, and delay represents amount of extra travel time due to congestion compared to free flow conditions.

  A review of Table 9-2 indicates that, while the number of lane miles of congested freeways more than doubles between the 2007 Base Year and the 2030 RTP, the percentage of total lane miles that are congested increases by only 45 percent. Under the No-Build scenario, the percentage of congested lane miles increases by 78 percent. A similar pattern occurs for the increase in the percentage of congested VMT, with increases of 23 percent and 46 percent for the RTP and the No-Build, respectively.

  For arterials, the percentage of congested lane miles for the RTP increases by only three percent compared to the 2007 Base Year. This is, in part, a consequence of the projected doubling of arterial lane miles between the 2007 Base and the RTP. However, even though the same increase in arterial lane miles occurs in the No-Build scenario, its percentage of congested lane miles is 73 percent higher than the 2007 Base. A similar pattern occurs for the percentage of congested VMT on arterials, with the percentage of congested VMT for the RTP 16 percent higher than the 2007 Base, versus 72 percent higher for the No-Build. Clearly, the enhanced freeway network provided in the RTP, but not included in the No-Build scenario, results in significant congestion relief on the arterial system.

  The vehicle hours of delay per 1000 VMT also reveals the benefits of the expanded freeway system. The vehicle hours of delay per 1000 VMT increases by 32 percent between the 2007 Base Year and the 2030 RTP, but experiences an increase of 99 percent under the No-Build scenario.

9.3 TRANSIT SYSTEM PERFORMANCE

One of the key components of the transit performance monitoring effort is the Transit Performance Report (TPR). The TPR is prepared and updated annually by Valley Metro/Regional Public Transportation Authority (RPTA). This report is developed using input from, and is reviewed by, member agencies and the RPTA Board. The TPR serves as an important information source for the MAG regional transportation planning process.

9.3.1 Service Efficiency and Effectiveness Study

In 2006 RPTA hired a consultant to conduct a Service Efficiency and Effectiveness Study (SEES). One task of this study was to develop a series of performance measures. This SEES developed initial performance targets that will allow comparison between performance expectations and actual performance. These performance measures and performance targets are being incorporated into the TPR. In future years these targets will be reviewed, refined and indexed to inflation as appropriate.

The SEES framework proposed performance targets, which establish a baseline of performance expectation for Fixed Route bus (system-wide); Fixed Route bus at the route level; Paratransit; and Light Rail Transit (LRT). One of the key goals of the performance targets is to ensure consistent service levels throughout the region.

9.3.2 Performance Targets and Operating Results

The specific performance measures and targets developed during the Service Efficiency and Effectiveness Study are listed in Tables 9-3 through 9-5. It is important to note that SEES targets for LRT are preliminary, since there is very little data available on which to base the targets until the system has gone through some testing and begins revenue service. Data on individual bus route performance is listed in Appendix Tables C-8 and C-9.

Tables 9-3 through 9-5 also include actual operating results, where available, from the 2006 and 2007 Transit Performance Reports (TPR). The TPR process is still in a transition between the previous Performance Management Analysis System format and the new TPR. The data presented is based on the findings from the SEES and data available at this time. The modes covered by the TPR includes fixed route bus, paratransit, and, in the future, light rail. Fixed route bus service includes local routes, super grid (major arterial routes), Express/Bus Rapid Transit, Circulators, and rural connector routes and shuttles.

9.4 PERFORMANCE MONITORING 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.

TABLE 9-3
FIXED ROUTE BUS PERFORMANCE MEASURES (SYSTEM-WIDE)

Measure	Target	2006 Results	2007 Results
Cost Efficiency/Effectiveness			
Farebox Recovery Ratio	25%	23.6%	24.2%
Operating Cost per Boarding	$2.32	$2.29	$2.62
Subsidy (Net Operating Cost per Boarding)	$1.75	$1.75	$1.99
Cost Per Revenue Mile	$4.96	$4.90	$5.28
Average Fare	$0.67	$0.54	$0.64
Service Effectiveness			
Annual Increase in Total Boardings	3%	3.4%	-1.14%
Annual Increase in Average Boardings (Weekday/Sat., Sun.)	3%, 3%	5%, 6%	-1.88%, -1.05%
Boardings per Revenue Mile	2.1	2.15	2.01
Safety Incidents per 100,000 Vehicle Miles	1.2	--	--
Security Incidents per “x” Boardings	0	--	--
Complaints per “x” Boardings	28	--	--
On-time Performance	90%	--	--
Miles between Mechanical Failures	23,400	--	--
Customer Satisfaction	89%	--	--

TABLE 9-4
PARATRANSIT PERFORMANCE MEASURES

Measure	Target	2006 Results	2007 Results
Cost Efficiency/Effectiveness			
Farebox Recovery Ratio	5%	4.9%	4.8%
Operating Cost per Boarding	$28.55	$28.55	$31.97
Subsidy (Net Operating Cost per Boarding)	$27.16	$27.16	$30.56
Cost Per Revenue Hour	$50.30	$50.30	$55.46
Average Fare	TBD	$1.39	--
Service Effectiveness			
Annual Increase in Total Boardings	3%	3.1%	-1.71%
Annual Increase in Average Boardings (Weekday, Sat., Sun.)	3%, 3%, 3%	--	--
Boardings per Revenue Hour	1.76	1.76	1.73
Percent No-Shows	5%	--	--
On-time Performance	90%	90%	95.4%
Miles between Mechanical Failures	TBD	--	--
Customer Satisfaction	90%	--	--

TABLE 9-5
LIGHT RAIL TRANSIT (LRT) PERFORMANCE MEASURES

Measure	Target	2006 and 2007 Results *
Cost Efficiency/Effectiveness		
Farebox Recovery Ratio	25%	--
Operating Cost per Boarding	$2.64	--
Subsidy (Net Operating Cost per Boarding)	$198.00	--
Cost Per Revenue Mile	$26.26	--
Average Fare	$0.67	--
Service Effectiveness		
Annual Total Boardings	10,655,000	--
Boardings Average Weekday	26,090	--
Boardings Average Saturday	N/A	--
Boardings Average Sunday/Holiday	N/A	--
Boardings per Vehicle Revenue Mile	3.94	--
Boardings per Revenue Mile	8.04	--
Safety Incidents per 100,000 Vehicle Miles	N/A	--
Security Incidents per "x" Boardings	N/A	--
Complaints per "x" Boardings	28	--
On-time Performance	95%	--
Miles between Mechanical Failures	25,000	--
Customer Satisfaction	89%	--

* LRT system begins operations on December 29, 2008.

As mentioned, the Regional Public Transportation Authority has established a specific set of performance measures to monitor and evaluate bus and rail systems in the region. Results are published in the RPTA Annual Transit Performance Report. For roadway systems in the region, a broad range data on potential performance measures has been collected and state-of-the-art modeling capabilities are in place. In order to enhance these initial efforts, in June 2008 MAG initiated the Performance Measurement Framework consultant study to further refine and focus the performance monitoring approach for the regional roadway network. Additionally, recognizing the close relationship between congestion and performance, and in an effort to align key performance measurement indicators with the congestion management process, MAG has combined this study with the Congestion Management Update in order to coordinate results and implementation of strategies. Based on the findings of this study and input from the Transit Performance Report, it is anticipated that MAG will annually produce a Transportation System Monitoring and Performance Report.

Appendix A

Freeway/Highway Life Cycle Program

TABLE A-1
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - NEW CORRIDORS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Facilitiy	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Cost: FY 2006-2026 (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Project Information
		Design	Right-of-Way	Construction	Total					
	SR 801 (I-10 Reliever)									
F1	SR 85 to Loop 303	0.0	0.0	0.0	0.0	81.0	81.0	2025	11.0	
F2	Loop 303 to Loop 202	0.0	14.7	0.0	14.7	724.3	739.0	2025	13.0	
	Subtotal	**0.0**	**14.7**	**0.0**	**14.7**	**805.3**	**820.0**		**24.0**	
	Loop 202 (South Mountain Freeway)									
F3	I-10 (West) to 51st Avenue	0.3	0.0	0.0	0.3	538.7	539.0	2011	10.0	
F4	51st Avenue to Loop 202/I-10	0.1	0.0	0.0	0.1	588.2	588.3	2015	12.0	
	Subtotal	**0.4**	**0.0**	**0.0**	**0.4**	**1,126.9**	**1,127.3**		**22.0**	
	Loop 303 (Estrella Freeway)									
F5	I-17 to US 60 (Grand Avenue)	20.7	0.0	0.0	20.7	787.1	807.8	2015	18.0	
F6	US 60 (Grand Avenue) to I-10	3.9	12.7	0.0	16.6	725.0	741.6	2013	15.0	
F7	I-10 to I-10R/MC 85	0.0	0.0	0.0	0.0	220.0	220.0	2019	5.0	
	Subtotal	**24.6**	**12.7**	**0.0**	**37.3**	**1,732.1**	**1,769.4**		**38.0**	
	SR 802 (Williams Gateway Freeway)									
F8	Loop 202 to Ellsworth Road	0.0	0.2	0.0	0.2	179.1	179.3	2016	2.0	
F9	Ellsworth Road to Meridian Road	0.0	0.0	0.0	0.0	176.0	176.0	2020	3.0	
	Subtotal	**0.0**	**0.2**	**0.0**	**0.2**	**355.1**	**355.3**		**5.0**	
	Right-of-Way									
F10	Right-of-Way Protection for Loop 303 (Extension south of MC 85 to Riggs Road)	0.0	0.0	0.0	0.0	50.0	50.0	2025	---	
F11	Right-of-Way Protection for SR 74 (US 60 to Loop 303)	0.0	0.0	0.0	0.0	48.0	48.0	2025	---	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**98.0**	**98.0**			
	Sky Harbor Expressway									
F12	Superior Ave. to University Dr.	0.0	0.0	0.0	0.0	0.0	0.0	--	--	Project deleted from program in FY 2008.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			
	TOTAL	**25.0**	**27.6**	**0.0**	**52.6**	**4,117.4**	**4,170.0**	**--**	**--**	

TABLE A-2
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - WIDEN EXISITING FACILITIES: GENERAL PURPOSE LANES
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Project Information
		Design	Right-of-Way	Construction	Total					
	I-10									
F20	SR 85 to Loop 303	1.8	0.0	0.0	1.8	126.4	128.2	2009/2023	12.0	Includes advancement of segment between Loop 303 and Verrado to FY 2009.
F21	Loop 303 to Loop 101	6.8	0.1	21.6	28.5	146.0	174.5	2009	9.0	Includes projects F22, F70 and F71.
F22	Dysart Road to Loop 101	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F21.
F23	Loop 101 to I-17	0.0	0.0	0.0	0.0	71.7	71.7	2010	7.0	
F24	SR 51 to 40th Street	0.0	0.0	0.0	0.0	140.0	140.0	2012	3.0	
F25	40th Street to Baseline Road	0.2	0.3	1.1	1.6	392.6	394.2	2012	6.0	Includes auxiliary lane project from Southern Ave. to SR 143.
F26	Baseline Road to Loop 202/Santan	0.0	0.0	0.0	0.0	50.6	50.6	2014	6.0	
F27	Loop 202/Santan Freeway to Riggs Rd.	0.0	0.0	0.0	0.0	69.0	69.0	2011	6.0	Includes project F72.
	Subtotal	**8.8**	**0.4**	**22.7**	**31.9**	**996.3**	**1028.2**			
	I-17									
F28	New River Road to Anthem Way	0.0	0.0	0.0	0.0	26.0	26.0	2024	3.0	
F29	Anthem Way to Carefree Highway	1.7	0.0	0.0	1.7	70.3	72.0	2009/2023	5.0	Includes project F73. GP lanes are programmed in FY 2009 as a STAN advancement.
F30	Carefree Highway to Loop 101	12.1	103.3	34.0	149.4	192.2	341.6	2008	9.0	Includes project F74.
F31	Loop 101 to Arizona Canal	0.0	0.0	0.0	0.0	50.6	50.6	2013	6.0	
F32	Arizona Canal to McDowell Road	0.0	0.0	0.0	0.0	960.0	960.0	2020	7.0	
	Subtotal	**13.8**	**103.3**	**34.0**	**151.1**	**1,299.1**	**1,450.2**			
	Loop 101 (Aqua Fria Freeway)									
F33	US 60/Grand Avenue to I-17	0.0	0.0	0.0	0.0	102.0	102.0	2024	12.0	
F34	I-10 to US 60/Grand Avenue	0.0	0.0	0.0	0.0	85.0	85.0	2022	10.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**187.0**	**187.0**			
	Loop 101 (Pima Freeway)									
F35	I-17 to SR 51	0.0	0.0	0.0	0.0	59.0	59.0	2024	7.0	
F36	SR 51 to Shea Blvd.	0.0	0.0	0.0	0.0	85.0	85.0	2022	10.0	Includes project F37.
F37	Princess Drive to Shea Boulevard	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F36.

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Project Information
		Design	Right-of-Way	Construction	Total					
F38	Shea Boulevard to Loop 202 (Red Mt.)	0.0	0.0	0.0	0.0	90.7	90.7	2014	11.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**234.7**	**234.7**			
	Loop 101 (Price Freeway)									
F39	Baseline Road to Loop 202/Santan	0.0	0.0	0.0	0.0	51.0	51.0	2023	6.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**51.0**	**51.0**			
	Loop 202 (Red Mountain Freeway)									
F40	I-10/SR 51 to Loop 101 (Pima)	0.9	0.0	0.1	1.0	192.0	193.0	2009	9.0	Includes project F41; converted to design-build project in FY 2008.
F41	Rural Road to Loop 101 (EB & WB)	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F40.
F42	Loop 101 to Gilbert Road	0.0	0.0	0.0	0.0	48.5	48.5	2014	6.0	
F43	Gilbert Road to Higley Road	0.0	0.0	0.0	0.0	42.0	42.0	2024	5.0	
F44	Higley Road to US 60/Superstition	0.0	0.0	0.0	0.0	85.0	85.0	2025	10.0	
	Subtotal	**0.9**	**0.0**	**0.1**	**1.0**	**367.5**	**368.5**			
	Loop 202 (Santan Freeway)									
F45	I-10 to Dobson R.	0.0	0.0	0.0	0.0	43.0	43.0	2023	5.0	
F46	Dobson Rd. to Val Vista Road	0.0	0.0	0.0	0.0	59.0	59.0	2024	7.0	
F47	Val Vista Road to US 60	0.0	0.0	0.0	0.0	93.0	93.0	2025	11.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**195.0**	**195.0**			
	SR 51 (Piestewa Freeway)									
F48	Loop 101/Pima to Shea Boulevard	0.0	0.0	0.0	0.0	51.0	51.0	2023	6.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**51.0**	**51.0**			
	SR 85									
F49	I-10 to I-8	0.0	0.0	23.2	23.2	186.1	209.3	2010	32.5	Includes project F50.
F50	Hazen Road to I-8	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F49.
	Subtotal	**0.0**	**0.0**	**23.2**	**23.2**	**186.1**	**209.3**		32.5	
	US 60 (Grand Avenue)									
F51	Loop 303 to Loop 101	2.1	0.1	0.0	2.2	99.5	101.7	2015	10.0	
F52	Loop 101 to Van Buren Street	0.0	0.0	0.0	0.0	152.1	152.1	2025	11.0	
F53	99th Ave. to 83rd Ave.	0.7	0.0	0.0	0.7	9.3	10.0	2009	2.0	
F54	71st Ave. to Grand Canal Bridge	0.0	0.0	3.6	3.6	0.0	3.6	2006	6.5	Project completed in FY 2008.
	Subtotal	**2.8**	**0.1**	**3.6**	**6.5**	**260.9**	**267.4**			

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Project Information
		Design	Right-of-Way	Construction	Total					
	US 60 (Superstition Freeway)									
F55	I-10 to Loop 101	0.0	0.0	0.0	0.0	29.2	29.2	2008	5.0	
F56	Gilbert Road to Power Road	0.0	0.0	87.4	87.4	0.0	87.4	2007	6.0	Includes project F91. Project completed in FY 2007.
F57	Crismon Road to Meridian Road	0.0	0.0	0.0	0.0	31.0	31.0	2017	2.0	Includes project F92.
	Subtotal	**0.0**	**0.0**	**87.4**	**87.4**	**60.2**	**147.6**			
	US 93 (Wickenburg Bypass)									
F58	Wickenburg Bypass	0.0	15.1	10.5	25.6	17.0	42.6	2007	1.7	
	Subtotal	**0.0**	**15.1**	**10.5**	**25.6**	**17.0**	**42.6**			
	SR 143 (Hohokam Expressway)									
	Sky Harbor Blvd. T.I.	0.4	0.0	0.0	0.4	38.7	39.1	2010	--	Project added to program in FY 2008.
	Subtotal	**0.4**	**0.0**	**0.0**	**0.4**	**38.7**	**39.1**			
	TOTAL	**26.3**	**118.9**	**181.5**	**326.7**	**3,905.8**	**4,232.5**	**--**	**--**	

TABLE A-3
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - WIDEN EXISITING FACILITIES: HIGH OCCUPANCY VEHICLE LANES
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Project Information
		Design	Right-of-Way	Construction	Total					
	I-10									
F70	Loop 303 to Dysart Road	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F21.
F71	Dysart Road to Loop 101	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F21.
F72	Loop 202/Santan to Riggs Road	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F27.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	
	I-17									
F73	Anthem Way to Carefree Highway	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F29.
F74	Carefree Highway to Loop 101	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F30.
F75	I-10 (West) to I-10 (East)	0.0	0.0	0.0	0.0	77.0	77.0	2017	7.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**77.0**	**77.0**		**7.0**	
	Loop 101 (Aqua Fria Freeway)									
F76	US 60/Grand Avenue to I-17	0.0	0.0	0.0	0.0	64.0	64.0	2022	12.0	
F77	I-10 to US 60/Grand Avenue	0.0	0.0	0.0	0.0	53.0	53.0	2017	10.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**117.0**	**117.0**		**22.0**	
	Loop 101 (Pima Freeway)									
F78	I-17 to SR 51 (Tatum)	0.0	0.0	0.0	0.0	35.5	35.5	2013	7.0	
F79	SR 51 (Tatum) to Princess Drive	1.4	0.0	0.0	1.4	31.2	32.6	2008	6.0	
F80	Princess Drive to Loop 202 (Red Mt.)	8.8	0.0	20.7	29.5	48.7	78.2	2007	4.0	Includes project F81.
F81	Shea Boulevard to Loop 202	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F80.
	Subtotal	**10.2**	**0.0**	**20.7**	**30.9**	**115.4**	**146.3**		**17.0**	
	Loop 101 (Price Freeway)									
F82	Loop 202/Red Mountain to Loop 202/Santan	3.1	0.0	0.0	3.1	54.5	57.6	2008	10.0	Includes project F83
F83	Baseline to Loop 202/Santan	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F82
	Subtotal	**3.1**	**0.0**	**0.0**	**3.1**	**54.5**	**57.6**		**10.0**	

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Project Information
		Design	Right-of-Way	Construction	Total					
	Loop 202 (Red Mountain Freeway)									
F84	Loop 101 to Gilbert Road	1.7	0.0	0.0	1.7	33.8	35.5	2009	6.0	
F85	Gilbert Road to Higley Road	0.0	0.0	0.0	0.0	27.0	27.0	2019	5.0	
F86	Higley Road to US 60/Superstition	0.0	0.0	0.0	0.0	52.0	52.0	2022	10.0	
	Subtotal	**1.7**	**0.0**	**0.0**	**1.7**	**112.8**	**114.5**		**21.0**	
	Loop 202 (Santan Freeway)									
F87	I-10 to Dobson Road	0.0	0.0	0.0	0.0	46.0	46.0	2013	5.0	Includes project F128.
F88	Dobson Road to Val Vista Road	0.0	0.0	0.0	0.0	57.0	57.0	2015	7.0	
F89	Val Vista Road to US 60 (Superstition)	0.0	0.0	0.0	0.0	55.0	55.0	2022	11.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**158.0**	**158.0**		**23.0**	
	SR 51									
F90	Loop 101/Pima to Shea Boulevard	3.4	0.0	33.4	36.8	28.1	64.9	2007	6.0	Includes project F130.
	Subtotal	**3.4**	**0.0**	**33.4**	**36.8**	**28.1**	**64.9**		**6.0**	
	US 60 (Superstition Freeway)									
F91	Gilbert Road to Power Road	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F56.
F92	Crismon Road to Meridian Road	0.0	0.0	0.0	0.0	--	--	--	--	Combined with project F57.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	
	TOTAL	**18.4**	**0.0**	**54.1**	**72.5**	**662.8**	**735.3**	**--**	**--**	

TABLE A-4
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - NEW ARTERIAL INTERCHANGES ON EXISTING FACILITIES
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Other Project Information
		Design	Right-of-Way	Construction	Total				
	I-10								
F100	Bullard Road	1.1	4.5	9.6	15.2	0.0	15.2	2007	Project completed in FY 2008.
F101	Chandler Heights	0.0	0.0	0.0	0.0	13.8	13.8	2022	
F102	El Mirage	0.0	0.0	0.0	0.0	17.3	17.3	2023	
F103	Perryville Road	0.0	0.0	0.0	0.0	9.0	9.0	2013	
	Subtotal	**1.1**	**4.5**	**9.6**	**15.2**	**40.1**	**55.3**		
	I-17								
F104	Dixileta Drive/Jomax Road	2.8	2.7	35.6	41.1	14.7	55.8	2007	Includes project F106. Dixileta structure completed in FY 2008.
F105	Dove Valley Road	2.1	0.0	0.0	2.1	26.7	28.8	2009	Local advancement.
F106	Jomax Road	0.0	0.0	0.0	0.0	--	--	--	Combined with project F104.
	Subtotal	**4.9**	**2.7**	**35.6**	**43.2**	**41.4**	**84.6**		
	Loop 101 (Aqua Fria Freeway)								
F107	Beardsley Road/Union Hills Drive	0.0	0.0	0.0	0.0	28.0	28.0	2009	Local advancement.
F108	Bethany Home Road	1.5	0.0	8.4	9.9	5.3	15.2	2006	Project completed in FY 2008.
	Subtotal	**1.5**	**0.0**	**8.4**	**9.9**	**33.3**	**43.2**		
	Loop 101 (Pima Freeway)								
F109	64th Street	2.3	1.1	21.7	25.1	4.9	30.0	2007	
	Subtotal	**2.3**	**1.1**	**21.7**	**25.1**	**4.9**	**30.0**		
	Loop 202 (Red Mountain Freeway)								
F110	Mesa Drive (Ramps Only)	0.0	0.0	0.0	0.0	4.6	4.6	2025	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**4.6**	**4.6**		

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. for Final Construc-tion	Other Project Information
		Design	Right-of-Way	Construction	Total				
	US 60 (Superstition Freeway)								
F111	Lindsay Road (Half Interchange)	0.0	0.0	0.0	0.0	8.8	8.8	2012	
F112	Meridian Road (Half Interchange)	0.0	0.0	0.0	0.0	8.8	8.8	2013	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**17.6**	**17.6**		
	Other Arterial Interchange Improvements								
	Deer Valley Road at I-17	0.0	0.0	0.0	0.0	--	--	--	Deleted from program in FY 2006.
	Higley Road at US 60	0.3	0.0	5.0	5.3	0.0	5.3	2007	Project completed in FY 2008.
	Ray Road at I-10	0.0	0.0	9.4	9.4	0.0	9.4	2006	Project completed in FY 2008.
	Carefree Highway at I-17	1.4	0.0	19.3	20.7	4.8	25.5	2007	
	43rd Avenue at I-10	0.3	0.0	2.5	2.8	0.0	2.8	2007	Project completed in FY 2008.
	51st Avenue at I-10	0.0	0.0	0.0	0.0	--	--	--	Combined with 43rd Avenue.
	Subtotal	**2.0**	**0.0**	**36.2**	**38.2**	**4.8**	**43.0**		
	TOTAL	**11.8**	**8.3**	**111.5**	**131.6**	**146.7**	**278.3**	--	

TABLE A-5
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - NEW HOV RAMPS AT FREEWAY-TO-FREEWAY INTERCHANGES
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Prgm. Final Construc-tion	Other Project Information
		Design	Right-of-Way	Construction	Total				
	Loop 101								
F125	I-10	0.0	0.0	0.0	0.0	60.0	60.0	2025	
F126	I-17	0.0	0.0	0.0	0.0	72.0	72.0	2024	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**132.0**	**132.0**		
	Loop 202								
F127	Red Mountain and US 60 (Superstition)	0.0	0.0	0.0	0.0	20.4	20.4	2025	
F128	Santan and I-10	0.0	0.0	0.0	0.0	--	--	--	Combined with project F87.
F129	Santan and Loop 101 / Price	0.0	0.0	0.0	0.0	20.4	20.4	2017	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**40.8**	**40.8**		
	SR 51								
F130	Loop 101 / Pima	0.0	0.0	0.0	0.0	--	--	--	Combined with project F90.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		
	TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**172.8**	**172.8**	--	

TABLE A-6
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - OPERATIONS, MAINTENANCE AND SYSTEMWIDE PROGRAMS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Facilities	Expenditures through FY 2008 (Year of Expenditure Dollars)			Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Programmed for Implementation	Other Project Information
	Operating	Capital	Total				
Freeway Management System							
Freeway Management System	0.2	0.1	0.3	179.8	180.1	2009-2026	
Subtotal	**0.2**	**0.1**	**0.3**	**179.8**	**180.1**		
Maintenance							
Maintenance (Landscaping, including restoration and litter pick-up)	17.6	0.0	17.6	264.4	282.0	2009-2026	
Subtotal	**17.6**	**0.0**	**17.6**	**264.4**	**282.0**		
Noise Mitigation							
Noise Mitigation	0.1	41.1	41.2	19.9	61.1	2009-2026	
Subtotal	**0.1**	**41.1**	**41.2**	**19.9**	**61.1**		
Systemwide							
Right-of-Way Administration, Advanced R/W Acquisition	7.0	5.3	12.3	124.7	137.0	2009-2026	
Preliminary Engineering, Fwy. Serv. Patrol, and Risk Management	60.2	0.0	60.2	324.5	384.7	2009-2026	
Subtotal	**67.2**	**5.3**	**72.5**	**449.2**	**521.7**		
TOTAL	**85.1**	**46.5**	**131.6**	**913.3**	**1,044.9**	--	

TABLE A-7
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - OTHER PROJECTS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Facilities	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Programmed for Implementation	Other Project Information
	Design	Right-of-Way	Construction	Total				
I-10								
SR 347 Interchange	0.0	0.0	0.0	0.0	0.3	0.3	2008	Included in program in FY 2007.
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.3**	**0.3**		
I-17								
Greenway Rd./Thunderbird Rd. (Drainage Improvements)	0.0	0.0	0.0	0.0	--	--	--	Combined with Peoria Avenue.
Peoria Ave./Cactus Rd. (Drainage Improvements)	0.0	0.0	0.0	0.0	17.0	17.0	2013	Includeds Greenway/Thunderbird.
Bethany Home Rd. - Northern Ave., Alhambra District (Construction)	0.0	0.0	0.0	0.0	2.3	2.3	2010	
16th Street - Buckeye Rd.	0.0	0.0	4.6	4.6	0.0	4.6	2006	Project completed in FY 2008.
Buckeye Rd./Northbound On-Ramp (Construction)		0.0	0.0	0.0	--	--	--	Project deleted in FY 2006.
Cactus Rd. (T.I. Improvements)	0.0	0.0	6.7	6.7	0.2	6.9	2006	Project completed in FY 2008.
Subtotal	**0.0**	**0.0**	**11.3**	**11.3**	**19.5**	**30.8**		
US 60 (Superstition)								
Val Vista to Power (landscape)	0.0	0.0	4.6	4.6	0.0	4.6	2007	Included in program in FY 2006.
Subtotal	**0.0**	**0.0**	**4.6**	**4.6**	**0.0**	**4.6**		
SR 74								
Passing Lanes	0.0	0.0	0.0	0.0	5.6	5.6	2010	Included in program in FY 2006.
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**5.6**	**5.6**		
SR 87								
Forest Boundary - New Four Peaks (Construction)	0.0	0.0	18.1	18.1	3.8	21.9	2007	
MP 211.8 - MP 213.0	0.0	0.0	0.0	0.0	2.4	2.4	2010	Included in program in FY 2007.
New Four Peaks Road - Dos S South Ranch Road	0.0	0.0	0.0	0.0	25.3	25.3	2010	Included in program in FY 2007.
Subtotal	**0.0**	**0.0**	**18.1**	**18.1**	**31.5**	**49.6**		

Facilities	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Programmed for Implementation	Other Project Information
	Design	Right-of-Way	Construction	Total				
SR 88								
Apache Trail (District Force Account)	0.0	0.0	0.2	0.2	0.0	0.2	2006	Project completed in FY 2007.
Fish Creek Hill	0.1	0.0	0.0	0.1	1.4	1.5	2009	
Subtotal	**0.1**	**0.0**	**0.2**	**0.3**	**1.4**	**1.7**		
Loop 101 (Agua Fria)								
I-10 - MC 85 (99th Avenue)	0.0	0.0	0.0	0.0	4.0	4.0	2010	
Northern Ave. to 31st Ave. (Landscape)	0.2	0.0	0.0	0.2	1.1	1.3	2007	Project completed in FY 2008.
Thunderbird Road T.I.	0.0	0.0	0.0	0.0	3.0	3.0	2008	Included in program in FY 2007.
Skunk Crk. To Union Hills	0.0	0.0	2.5	2.5	0.0	2.5	2007	Project completed in FY 2008.
I-10 to I-17 (Traffic Flow Imprv.)	0.0	0.0	9.7	9.7	0.0	9.7	2007	Project completed in FY 2008.
Subtotal	**0.2**	**0.0**	**12.2**	**12.4**	**8.1**	**20.5**		
Loop 101 (Pima)								
Pima Road Extension (JPA)	0.0	0.0	0.0	0.0	3.9	3.9	2009	Included in program in FY 2008.
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**3.9**	**3.9**		
Loop 101 (Price)								
Balboa Dr., Multi-Use Path (Local)	0.0	0.0	0.0	0.0	2.0	2.0	2012	
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**2.0**	**2.0**		
Loop 202 (Santan)								
Lindsey Rd. to Gilbert Rd., Multi-Use Path	0.0	0.0	0.0	0.0	0.5	0.5	2008	
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.5**	**0.5**		
Systemwide								
Ramp Meters, T.I. Improvements, Park & Ride Lots, Utility Relocation (Various Locations)	0.4	0.0	18.0	18.4	7.4	25.8	2009-2012	
Subtotal	**0.4**	**0.0**	**18.0**	**18.4**	**7.4**	**25.8**		
TOTAL	**0.7**	**0.0**	**59.8**	**60.5**	**80.2**	**140.7**	--	

Facilities	Expenditures through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Estimated Cost (2008 and YOE Dollars)	FY Programmed for Implementation	Other Project Information
	Design	Right-of-Way	Construction	Total				
SUMMARY TOTALS	160.3	167.1	448.1	775.5	9,999.0	10,774.5	--	

Appendix B

Arterial Street Life Cycle Program

TABLE B-1
ARTERIAL STREET LIFE CYCLE PROGRAM
REGIONAL FUNDING REIMBURSEMENTS AND TOTAL EXPENDITURES: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

YOE	Year of Expenditure	CONST	Construction	AII	Arterial Intersection Improvements
FY	Fiscal Year	Expend	Expenditures	ACI	Arterial Capacity Improvements
$	Dollars	Reimb	Reimbursement(s)	*	Measured in centerline miles

MAP CODE	FACILITY/LOCATION	PROJECT TYPE	REGIONAL FUNDING			TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
			Reimb through FY08 (YOE$)	Estimated Future Reimb FY09-FY26 (2008$)	Total Reimb FY06-FY26 (2008$,YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)			
CHANDLER											
A1	Arizona Ave/Chandler Blvd	AII	3.582		3.582	7.376	0.000	7.376	2006		Project Completed FY08 RARF Closeout Project
A2	Arizona Ave/Elliot Rd	AII		3.714	3.714	5.365	0.000	5.365	2006		Project Completed
A3	Arizona Ave/Ray Rd	AII	3.464		3.464	5.192	1.393	6.585	2007		Project Completed
A4	Arizona Ave: Ocotillo Rd to Hunt Highway	ACI		6.111	6.111		17.880	17.880	2013	3.0	
A5	Chandler Blvd/Alma School Rd	AII		3.714	3.714		15.549	15.549	2011		
A6	Chandler Blvd/Dobson Rd	AII	0.084	3.627	3.711	0.774	6.912	7.686	2009		
A7	Chandler Blvd/Kyrene Rd	AII		3.714	3.714		5.983	5.983	2015		
A8	Gilbert Rd: SR-202L to Hunt Hwy	ACI		20.609	20.609		41.583	41.583	2011	5.3	
	Gilbert Rd: SR-202L/ Germann to Queen Creek Rd	ACI		6.773	6.773		11.300	11.300	2009	1.3	
	Gilbert Rd: Queen Creek Rd to Chandler Heights Rd	ACI		7.941	7.941		15.658	15.658	2011	2.0	
	Gilbert Rd: Chandler Heights to Hunt Highway	ACI		5.895	5.895		14.625	14.625	2011	2.0	
A9	Kyrene Rd/Ray Rd	AII		3.714	3.714		6.157	6.157	2014		
A10	Price Rd: SR-202L to I-10	AII		55.115	55.115		78.732	78.732	2020	6.0	
A11	Ray Rd/Alma School Rd	AII	0.137	3.572	3.709	0.196	9.513	9.709	2010		
A12	Ray Rd/Dobson Rd	AII		3.714	3.714		9.730	9.730	2012		

MAP CODE	FACILITY/LOCATION	PROJECT TYPE	REGIONAL FUNDING			TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
			Reimb through FY08 (YOE$)	Estimated Future Reimb FY09-FY26 (2008$)	Total Reimb FY06-FY26 (2008$,YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)			
A13	Ray Rd/McClintock Dr	All		3.714	3.714		8.752	8.752	2011		
A14	Ray Rd/Rural Rd	All		3.714	3.714		7.931	7.931	2013		
CHANDLER/GILBERT			7.267	115.032	122.299	18.903	210.115	229.018			
A15	Queen Creek Rd: Arizona Ave to Higley Rd	ACI		37.263	37.263		79.510	79.510	2013	7.0	
	CHANDLER Queen Creek Rd: Arizona Ave to McQueen Rd	ACI		4.318	4.318		17.850	17.850	2009	1.0	
	CHANDLER Queen Creek Rd: McQueen Rd to Lindsay Rd	ACI		11.967	11.967		28.241	28.241	2011	3.0	
	GILBERT Queen Creek Rd: Lindsay Rd to Val Vista Dr	ACI		4.954	4.954		7.087	7.087	2013	1.0	
	GILBERT Queen Creek Rd: Val Vista Dr to Greenfield Rd	ACI		6.410	6.410		10.020	10.020	2013	1.0	
	GILBERT Queen Creek Rd: Greenfield Rd to Higley Rd	ACI		9.614	9.614		16.312	16.312	2013	1.0	Segment limits reduced by 2 miles.
FOUNTAIN HILLS			0.000	37.263	37.263	0.000	79.510	79.510			
A16	Shea Blvd: Palisades Blvd to Cereus Wash	ACI		5.991	5.991		8.558	8.558	2024	4.7	Scope change from one contiguous roadway improvement project to two smaller segments and one design only project. The original project limits have been extended less than 1 mile to Cereus Wash.
	Shea Blvd: Palisades Blvd to Fountain Hills Blvd	ACI		0.288	0.288		0.412	0.412	2009	1.2	
	Shea Blvd: Technology Dr to Cereus Wash	ACI		5.703	5.703		8.146	8.146	2010	1.0	
	Shea Blvd: Fountain Hills Blvd to Technology Dr	ACI		0.000	0.000		0.000	0.451	2024	2.5	
GILBERT			0.000	5.991	5.991	0.000	8.558	8.558			
A17	Elliot Rd/Cooper Rd	All		4.073	4.073		5.820	5.820	2017		
A18	Elliot Rd/Gilbert Rd	All		3.714	3.714		5.305	5.305	2018		
A19	Elliot Rd/Greenfield Rd	All		3.714	3.714		5.308	5.308	2015		
A20	Elliot Rd/Higley Rd	All		3.714	3.714		5.203	5.203	2018		
A21	Elliot Rd/Val Vista Dr	All		3.714	3.714		5.306	5.306	2015		
A22	Germann Rd: Gilbert Rd to Power Rd	ACI		21.806	21.806		31.155	31.155	2014	4.0	

MAP CODE	FACILITY/LOCATION	PROJECT TYPE	REGIONAL FUNDING			TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
			Reimb through FY08 (YOE$)	Estimated Future Reimb FY09-FY26 (2008$)	Total Reimb FY06-FY26 (2008$,YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)			
	Germann Rd: Gilbert Rd to Val Vista Dr	ACI		6.541	6.541		9.347	9.347	2014	2.0	
	Germann Rd: Val Vista Dr to Higley Rd	ACI		15.265	15.265		21.808	21.808	2014	2.0	
A23	Greenfield Rd: Elliot Rd to Ray Rd	ACI		3.714	3.714		5.468	5.468	2013	2.0	
A24	Guadalupe Rd/Cooper Rd	All		3.714	3.714		5.305	5.305	2009		Exchanged with Guadalupe Rd/ Power Rd. Moved from Phase IV to Phase I.
A25	Guadalupe Rd/Gilbert Rd	All		3.714	3.714		5.306	5.306	2013		
A26	Guadalupe Rd/Greenfield Rd	All		3.714	3.714		5.228	5.228	2023		
A27	Guadalupe Rd/Power Rd	All		3.714	3.714		8.825	8.825	2018		Exchanged with Guadalupe Rd/ Cooper Rd. Moved from Phase I to Phase IV.
A28	Guadalupe Rd/Val Vista Dr	All		3.714	3.714		5.600	5.600	2018		
A30	Ray Rd: Val Vista Dr to Power Rd	ACI		16.415	16.415		23.197	23.197	2013	4.4	
A31	Ray Rd/Gilbert Rd	All		3.714	3.714		5.307	5.307	2018		
A32	Val Vista Dr: Warner Rd to Pecos	ACI	10.398	0.000	10.398	15.768	0.000	15.768	2006	2.9	Project Completed FY08 RARF Closeout Project
A33	Warner Rd/Cooper Rd	All		3.714	3.714		5.306	5.306	2008		
A34	Warner Rd/Greenfield Rd	All		3.714	3.714		5.305	5.305	2014		
GILBERT/MESA/MARICOPA COUNTY			10.398	90.576	100.974	15.768	132.944	148.712			
A29	Power Rd: Santan Fwy to Chandler Heights	ACI		20.368	20.368		56.897	56.897	2024	7.8	
	GILBERT Power Rd/Pecos	All		9.992	9.992		14.531	14.531	2009		
	GILBERT Power Rd: Santan Fwy to Pecos Rd	ACI		10.376	10.376		14.824	14.824	2010	3.0	Segment limit changed from Galveston Rd to Santan Fwy.
	GILBERT Power Rd: Pecos to Chandler Heights	ACI		0.000	0.000		27.542	27.542	2024	4.8	
A45	Power Rd: Baseline Rd to Santan Fwy	ACI		17.853	17.853		27.091	27.091	2009	3.5	
	MESA Power Rd: East Maricopa Floodway to Santan Fwy/Loop 202	ACI		10.093	10.093		16.151	16.151	2009	2.5	Segment limit changed from Galveston Rd to Santan Fwy.

MAP CODE	FACILITY/LOCATION	PROJECT TYPE	REGIONAL FUNDING			TOTAL EXPENDITURES			FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
			Reimb through FY08 (YOE$)	Estimated Future Reimb FY09-FY26 (2008$)	Total Reimb FY06-FY26 (2008$,YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)			
	M.C. Power Rd: Baseline Rd to East Maricopa Floodway	ACI		7.760	7.760		10.940	10.940	2009	1.0	
MARICOPA COUNTY			0.000	38.221	38.221	0.000	83.988	83.988			
A35	Dobson Rd: Bridge over Salt River	ACI		18.332	18.332		37.022	37.022	2014	0.8	
A36	El Mirage Rd: Bell Rd to Jomax Rd	ACI		19.290	19.290		43.189	43.189	2016	6.0	
	El Mirage Rd: Bell Rd to South of Beardsley Rd	ACI		9.568	9.568		13.746	13.746	2010	1.8	
	El Mirage Rd: South of Beardsley to Deer Valley Dr	ACI		0.000	0.000		10.368	10.368	2011	1.2	
	El Mirage Rd: L303 to Jomax	ACI		0.000	0.000		5.184	5.184	2016	2.0	
	El Mirage Rd: Deer Valley to L303	ACI		9.722	9.722		13.891	13.891	2009	1.0	
A94	El Mirage Rd: Thunderbird Rd to Bell Rd	ACI		21.088	21.088		74.171	74.171	2015	2.0	
A37	El Mirage Rd: Thunderbird Rd to Northern Ave	ACI		16.535	16.535		24.050	24.050	2018	4.0	
A38	Gilbert Rd: Bridge over Salt River	ACI		13.779	13.779		24.612	24.612	2015		
A39	Jomax Rd: SR-303L to Sun Valley Parkway	ACI		20.369	20.369		29.098	29.098	2018	17.0	
A40	McKellips Rd: Bridge over Salt River	ACI		13.779	13.779		23.182	23.182	2014	0.6	
A41	McKellips Rd: SR-101L to SRP-MIC/Alma School Rd	ACI		38.820	38.820		47.510	47.510	2015	1.9	
A42	Northern Pkwy: Sarival to Grand (Phase I)	ACI		59.908	59.908		85.583	85.583	2011	11.0	Project rescoped. Revised segments, project schedule, phasing, and reimbursements based on the design concept report agreed upon by the project's member agencies. The amount of regional funding allocated to the project and/or programmed by Phase did not change.
	Northern Pkwy: Sarival to Dysart	ACI		54.759	54.759		78.227	78.227	2011	4.0	
	Northern Pkwy: ROW Protection	ACI		5.149	5.149		7.356	7.356	2011	11.0	
A43	Northern Pkwy: Sarival to Grand (Phase II)	ACI		83.871	83.871		119.816	119.816	2020	11.0	
	Northern Pkwy: Sarival to Dysart	ACI		7.832	7.832		11.189	11.189	2011	4.0	
	Northern Pkwy: Dysart to 111th	ACI		18.724	18.724		26.749	26.749	2015	2.5	
	Northern Pkwy: Sarival Overpass	ACI		9.653	9.653		13.790	13.790	2012		

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	Northern Pkwy: Reems Overpass	ACI		8.273	8.273		11.819	11.819	2013		
	Northern Pkwy: Litchfield Overpass	ACI		7.766	7.766		11.094	11.094	2014		
	Northern Pkwy: Agua Fria Bridge	ACI		4.863	4.863		6.947	6.947	2014		
	Northern Parkway: Northern Avenue at L101	ACI		5.879	5.879		8.399	8.399	2015		
	Northern Pkwy: Dysart Overpass	ACI		16.600	16.600		23.714	23.714	2018		
	Northern Pkwy: ROW Protection	ACI		4.281	4.281		6.116	6.116	2020	11.0	
A44	Northern Pkwy: Sarival to Grand (Phase III)	ACI		85.429	85.429		122.041	122.041	2025	11.0	
	Northern Pkwy: Dysart Overpass	ACI		3.503	3.503		5.004	5.004	2018		
	Northern Pkwy: El Mirage Alternative Access	ACI		4.137	4.137		5.910	5.910	2021		
	Northern Pkwy: El Mirage Overpass	ACI		21.773	21.773		31.104	31.104	2020		
	Northern Pkwy: Agua Fria to 111th	ACI		2.685	2.685		3.836	3.836	2022	1.0	
	Northern Pkwy: 111th to 107th	ACI		14.588	14.588		20.840	20.840	2023	0.5	
	Northern Pkwy: 107th to 99th	ACI		20.902	20.902		29.860	29.860	2024	1.0	
	Northern Pkwy: Loop 101 to 91st	ACI		3.411	3.411		4.873	4.873	2025	0.5	
	Northern Pkwy: 91st to Grand	AII		5.806	5.806		8.294	8.294	2025		
	Northern Pkwy: ROW Protection	ACI		2.540	2.540		3.629	3.629	2025	11.0	
	Northern Pkwy: Ultimate Construction	ACI		6.084	6.084		8.691	8.691	2025		
MESA			0.000	391.200	391.200	0.000	630.274	630.274			
A46	Baseline Rd: Power Rd to Meridian Rd	ACI		17.613	17.613		25.240	25.240	2019	6.0	
	Baseline Rd: Power Rd to Ellsworth Rd	ACI		8.618	8.618		12.384	12.384	2016	3.0	
	Baseline Rd: Ellsworth Rd to Meridian Rd	ACI		8.995	8.995		12.856	12.856	2019	3.0	
A47	Broadway Rd: Dobson Rd to Country Club	ACI	0.080	7.225	7.305	0.115	19.098	19.213	2010	2.0	

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			Reimb through FY08 (YOE$)	Estimated Future Reimb FY09-FY26 (2008$)	Total Reimb FY06-FY26 (2008$,YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)			
A48	Country Club/University Dr	All		2.756	2.756		8.794	8.794	2010		
A49	Country Club/Brown Rd	All		2.756	2.756		4.981	4.981	2012		
A50	Crismon Rd: Broadway Rd to Germann Rd	ACI		36.184	36.184		51.752	51.752	2020	9.0	
	Crismon Rd: Broadway Rd to Guadalupe Rd	ACI		12.327	12.327		17.626	17.626	2016	3.0	
	Crismon Rd: Guadalupe Rd to Ray Rd	ACI		11.965	11.965		17.094	17.094	2018	3.0	
	Crismon Rd: Ray Rd to Germann Rd	ACI		11.892	11.892		17.032	17.032	2020	3.0	
A51	Dobson Rd/Guadalupe Rd	All	0.106	2.646	2.752	0.152	5.760	5.912	2010		
A52	Dobson Rd/University Dr	All		2.756	2.756		6.916	6.916	2011		
A53	Elliot Rd: Power Rd to Meridian Rd	ACI		17.853	17.853		25.504	25.504	2025	6.0	
	Elliot Rd: Power Rd to Ellsworth Rd	ACI		8.857	8.857		12.653	12.653	2023	3.0	
	Elliot Rd: Ellsworth Rd to Meridian Rd	ACI		8.996	8.996		12.851	12.851	2025	3.0	
A54	Germann Rd: Ellsworth Rd to Signal Butte Rd	ACI		12.341	12.341		17.683	17.683	2021	2.0	
A55	Gilbert Rd/University Dr	All		2.756	2.756		13.389	13.389	2009		
A56	Greenfield Rd: University Rd to Baseline Rd	ACI	0.455	10.192	10.647	0.650	18.071	18.721	2016	3.0	
	Greenfield Rd: Baseline Rd to Southern Ave	ACI	0.455	4.703	5.158	0.650	7.165	7.815	2010	1.0	
	Greenfield Rd: Southern Ave to University Rd	ACI		5.489	5.489		10.906	10.906	2016	2.0	
A57	Guadalupe Rd: Power Rd to Meridian Rd	ACI		22.765	22.765		38.146	38.146	2015	6.0	
	Guadalupe Rd: Power Rd to Hawes Rd	ACI		7.749	7.749		14.882	14.882	2013	2.0	
	Guadalupe Rd: Hawes Rd to Crimson Rd	ACI		7.749	7.749		12.883	12.883	2014	2.0	

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			Reimb through FY08 (YOE$)	Estimated Future Reimb FY09-FY26 (2008$)	Total Reimb FY06-FY26 (2008$,YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)			
	Guadalupe Rd: Crimson Rd to Meridian Rd	ACI		7.267	7.267		10.381	10.381	2015	2.0	
A58	Hawes Rd: Broadway Rd to Ray Rd	ACI		20.488	20.488		30.411	30.411	2024	5.8	
	Hawes Rd: Broadway Rd to US60	ACI		7.057	7.057		10.083	10.083	2022	2.0	
	Hawes Rd: Baseline Rd to Elliot Rd	ACI		6.850	6.850		9.786	9.786	2024	2.0	
	Hawes Rd: Elliot Rd to Santan Freeway	ACI		4.252	4.252		6.075	6.075	2024	1.0	
	Hawes Rd: Santan Freeway to Ray Rd	ACI		2.329	2.329		4.467	4.467	2010	0.8	
A59	Higley Rd Parkway: S 60 to SR-202L	ACI		16.535	16.535		23.620	23.620	2020	6.5	
	Higley Rd Parkway: SR-202L to Brown Rd	ACI		8.268	8.268		11.810	11.810	2019	3.0	
	Higley Rd Parkway: Brown Rd to US-60	ACI		8.267	8.267		11.810	11.810	2020	3.5	
A60	Higley Rd Parkway: US 60 to SR 202L (RM) Grade Separations	ACI		27.438	27.438		39.198	39.198	2017		
A61	Lindsay Rd/Brown Rd	All		2.756	2.756		4.980	4.980	2012		
A62	McKellips Rd: East of Sossaman to Meridian	ACI		19.650	19.650		28.072	28.072	2018	5.0	
	McKellips Rd: East of Sossaman to Crismon Rd	ACI		11.846	11.846		16.924	16.924	2018	3.0	
	McKellips Rd: Crismon Rd to Meridian Rd	ACI		7.804	7.804		11.148	11.148	2018	2.0	
A63	McKellips Rd: Gilbert Rd to Power Rd	All	0.163	21.280	21.443	0.232	28.955	29.187	2016		Previously McKellips at Greenfield Rd/Higley Rd/Val Vista Dr and McKellips at Power Rd/Recker Rd were to be done concurrently. The City of Mesa is now treating the intersections as separate projects. Programmed reimbursements have been split accordingly.
	McKellips Rd/Lindsay Rd	All	0.043	6.234	6.277	0.062	8.284	8.346	2010		
	McKellips Rd/Greenfield Rd	All	0.040	2.840	2.880	0.056	3.782	3.838	2016		
	McKellips Rd/Higley Rd	All	0.040	2.839	2.879	0.057	3.783	3.840	2013		
	McKellips Rd/Power Rd	All		3.264	3.264		4.663	4.663	2016		

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	McKellips Rd/Recker Rd	All		3.263	3.263		4.661	4.661	2016		
	McKellips Rd/Val Vista Dr	All	0.040	2.840	2.880	0.057	3.782	3.839	2014		
A64	Meridian Rd: Baseline Rd to Germann Rd	ACI		28.876	28.876		41.253	41.253	2019	7.0	
	Meridian Rd: Baseline Rd to Ray Rd	ACI		16.607	16.607		23.726	23.726	2017	4.0	
	Meridian Rd: Ray Rd to Germann Rd	ACI		12.269	12.269		17.527	17.527	2019	3.0	
A65	Mesa Dr: Southern Ave to US60 and Mesa Dr to Broadway Rd	ACI	0.044	9.181	9.225	0.063	46.821	46.884	2012	1.0	
	Mesa Dr: US 60 to Southern Ave	ACI	0.044	8.329	8.373	0.063	21.669	21.732	2010	1.0	
	Mesa Dr/Broadway Rd	All		0.852	0.852		25.152	25.152	2012		
A66	Pecos Rd: Ellsworth Rd to Meridian Rd	ACI		12.461	12.461		19.047	19.047	2014	3.0	
A67	Ray Rd: Sossaman Rd to Meridian Rd	ACI		24.801	24.801		36.655	36.655	2025	5.0	
	Ray Rd: Sossaman Rd to Ellsworth Rd	ACI		3.759	3.759		9.391	9.391	2010	2.0	
	Ray Rd: Ellsworth Rd to Meridian Rd	ACI		21.042	21.042		27.264	27.264	2025	3.0	
A68	Signal Butte Rd: Broadway to Pecos Rd	ACI		32.590	32.590		46.559	46.559	2024	8.0	
	Signal Butte Rd: Broadway Rd to Elliot Rd	ACI		16.607	16.607		23.725	23.725	2022	4.0	
	Signal Butte Rd: Elliot Rd to Pecos Rd	ACI		15.983	15.983		22.834	22.834	2024	4.0	
A69	Southern Ave: Country Club Dr to Recker Rd	All	0.119	30.191	30.310	0.170	44.769	44.939	2013		
	Southern/Country Club Dr	All		4.811	4.811		8.293	8.293	2011		
	Southern Ave/Stapley Dr	All	0.119	12.480	12.599	0.170	16.630	16.800	2011		
	Southern Ave/Lindsay Rd	All		4.730	4.730		8.172	8.172	2011		
	Southern Ave/Higley Rd	All		8.170	8.170		11.674	11.674	2013		

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A70	Southern Ave: Sossaman Rd to Meridian Rd	ACI		17.853	17.853		25.505	25.505	2024	5.0	
	Southern Ave: Sossaman Rd to Crismon Rd	ACI		10.796	10.796		15.424	15.424	2022	3.0	
	Southern Ave: Crismon Rd to Meridian Rd	ACI		7.057	7.057		10.081	10.081	2024	2.0	
A71	Stapley Dr/University Dr	AII		2.756	2.756		7.261	7.261	2012		
A72	Thomas Rd: Gilbert Rd to Val Vista Dr	ACI		5.512	5.512		7.953	7.953	2010	2.0	
A73	University Dr: Val Vista Dr to Hawes Rd	ACI		21.447	21.447		30.715	30.715	2023	6.0	
	University Dr: Val Vista Dr to Higley Rd	ACI		10.794	10.794		15.424	15.424	2021	2.0	
	University Dr: Higley Rd to Hawes Rd	ACI		10.653	10.653		15.291	15.291	2023	4.0	
A74	Val Vista Dr: University Dr to Baseline Rd	ACI		10.903	10.903		16.693	16.693	2014	3.0	
	Val Vista Dr: Baseline Rd to Southern Ave	ACI		5.506	5.506		8.981	8.981	2012	1.0	
	Val Vista Dr: Southern Ave to University Dr	ACI		5.397	5.397		7.712	7.712	2014	2.0	
PEORIA			0.967	442.561	443.528	1.382	713.801	715.183			
A75	Beardsley Connection: SR-101L to Beardsley Rd at 83rd Ave/Lake Pleasant Pkwy	ACI		22.885	22.885		53.444	53.444	2009	2.0	
A76	Happy Valley Rd: L303 to 67th Avenue	ACI		20.369	20.369		32.010	32.010	2018	4.2	
	Happy Valley Rd: Loop 303 to Lake Pleasant Parkway	ACI		0.000	0.000		0.000	0.000	2018	2.1	Segment limits revised and FY for work programmed to occur in Phase III.
	Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave	ACI		20.369	20.369		32.010	32.010	2009	2.1	
A77	Lake Pleasant Pkwy: Union Hills to SR74	ACI	22.334	31.200	53.534	47.578	63.649	111.227	2020	9.8	Project segements revised to include Loop 303 to Dynamite Rd, Union Hills to Dynamite, and L303 to SR74.

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			Reimb through FY08 (YOE$)	Estimated Future Reimb FY09-FY26 (2008$)	Total Reimb FY06-FY26 (2008$,YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)			
	Lake Pleasant Pkwy: Dynamite Blvd to L303	ACI		26.407	26.407		59.482	59.482	2011		
	Lake Pleasant Pkwy: Union Hills to Dynamite Rd	ACI	22.334	4.793	27.127	47.578	0.000	47.578	2008		Segment from Union Hills to Dynamite completed and was a FY08 RARF Closeout Project.
	Lake Pleasant Pkwy: L303 to SR74/Carefree Hwy	ACI		0.000	0.000		4.167	4.167	2020		
PHOENIX			22.334	74.454	96.788	47.578	149.103	196.681			
A78	Avenida Rio Salado: 7th St to SR-202L	ACI		43.972	43.972		117.161	117.161	2014	7.0	
A79	Black Mountain Blvd: SR-51and Loop 101/ Pima Fwy to Deer Valley Rd	ACI		22.166	22.166		33.257	33.257	2013	1.3	
A80	Happy Valley Rd: 67th Ave to I-17	ACI		16.295	16.295	7.161	29.573	36.734	2013	4.0	
	Happy Valley: I-17 to 35th Ave	ACI		5.164	5.164	7.161	0.000	7.161	2005		Project Completed
	Happy Valley: 35th Ave to 43rd Ave	ACI		4.194	4.194		11.447	11.447	2012	1.0	
	Happy Valley: 43rd Ave to 55th Ave	ACI		4.138	4.138		9.034	9.034	2012	1.5	
	Happy Valley: 55th Ave to 67th Ave	ACI		2.799	2.799		9.092	9.092	2013	1.0	
A81	Sonoran Blvd: Central to 32nd St	ACI		32.111	32.111		68.170	68.170	2013	4.0	
SCOTTSDALE/CAREFREE			0.000	114.544	114.544	7.161	248.161	255.322			
A87	Pima Rd: SR101L to Happy Valley Rd and Dynamite Rd to Cave Creek	ACI		95.613	95.613		127.410	127.410	2014	7.8	Project limits extended to include SR101L to Thompson Peak Parkway.
	SCOTTSDALE Pima Rd: Thompson Peak Parkway to Pinnacle Peak	ACI		13.436	13.436		21.528	21.528	2010	1.0	An additional $19.325 million is allocated to Project Savings.
	SCOTTSDALE Pima Rd/Happy Valley	All		0.000	0.000		1.608	1.608	2007		Segment from SR101L to Thompson Peak Parkway is complete.
	SCOTTSDALE Pima Rd: Pinnacle Peak to Happy Valley Rd	ACI		9.308	9.308		13.298	13.298	2013	1.0	
	SCOTTSDALE Pima Rd: Dynamite Blvd to Stagecoach Rd	ACI		34.524	34.524		49.321	49.321	2014	5.0	
	CAREFREE Pima Rd: Stagecoach Rd to Cave Creek	ACI		5.361	5.361		7.652	7.652	2014	0.3	

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	SCOTTSDALE Pima Rd: SR101L to Thompson Peak Pkwy	ACI		13.659	13.659		34.003	34.003	2008	2.5	
SCOTTSDALE			0.000	95.613	95.613	0.000	127.410	127.410			
A82	Carefree Hwy: Cave Creek Rd to Scottsdale Rd	ACI		9.226	9.226		14.133	14.133	2016	2.0	
A83	SR-101L North Frontage Roads: Pima/Princess Dr to Scottsdale Rd	ACI	3.037	19.736	22.773	4.338	12.838	17.176	2015	2.0	Segment exchanged and moved to from Phase I to Phase II.
	SR-101L Frontage Rd: Hayden Rd to Scottsdale Rd	ACI	3.037	3.805	6.842	4.338	4.391	8.729	2008	1.0	Segment from Hayden to Scottsdale exchanged with Pima Rd: Thompson Peak to Pinnacle Peak. An additional $9.645 million is allocated to Project Savings
	SR-101L Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	ACI		15.931	15.931		8.447	8.447	2015	1.0	
A84	SR-101L South Frontage Rd: Hayden Rd to Pima	ACI		0.000	0.000		0.000	0.000	0	1.0	This project was deleted at the City of Scottsdale's request. Regional funds programmed for the project were reallocated to Pima Rd: SR101L to Thompson Peak Parkway (A87).
A85	Miller Rd/SR-101L Underpass	ACI		13.779	13.779		19.684	19.684	2020	0.5	
A86	Pima Rd: Happy Valley Rd to Dynamite Blvd	ACI		23.364	23.364		33.378	33.378	2018	2.0	
A88	Pima Rd: McKellips Rd to Via Linda	ACI		30.194	30.194		46.238	46.238	2011	7.0	
A89	Scottsdale Airport: Runway Tunnel	ACI		69.134	69.134		98.760	98.760	2016	1.0	
A90	Scottsdale Rd: Thompson Peak Pkwy to Happy Valley Rd	ACI		13.179	13.179		25.601	25.601	2015	3.0	
	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Pkwy	ACI		11.408	11.408		16.343	16.343	2011	2.0	
	Scottsdale Rd: Pinnacle Peak Pkwy to Happy Valley Rd	ACI		1.771	1.771		9.258	9.258	2015	1.0	
A91	Scottsdale Rd: Happy Valley Rd to Carefree Hwy	ACI		28.037	28.037		40.520	40.520	2019	6.0	
A92	Shea Blvd: SR-101L to SR-87	All		22.883	22.883	4.259	19.660	23.919	2016		

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	Shea Blvd at 90th/92nd/96th	All		3.629	3.629	3.347	0.000	3.347	2007		Various intersection improvements on the corridor have been consolidated and others have been added. The programmed reimbursement amount for the project did not change; however, existing reimbursements were re-assigned to various intersection improvement
	Shea Auxiliary Lane from 90th St to Loop 101	All		3.411	3.411		4.873	4.873	2010	1.0	
	Shea Blvd at Via Linda (Phase1)	All		0.980	0.980	0.912	0.488	1.400	2006		
	Shea Blvd at Via Linda (Phase 2)	All		1.052	1.052		1.504	1.504	2010		
	Shea Blvd at 120/124th St	All		0.377	0.377		0.539	0.539	2009		
	Shea Blvd at Mayo/134th St	All		0.290	0.290		0.415	0.415	2006		
	Shea Blvd: SR-101L to 96th St, ITS Improvements	All		0.377	0.377		0.540	0.540	2009	1.0	
	Shea Blvd: 96th St to 144th St, ITS Improvements	All		2.322	2.322		3.318	3.318	2010	6.2	
	Shea Blvd at Loop 101	All		3.629	3.629		5.211	5.211	2016		
	Shea Blvd at 110th St	All		0.261	0.261		0.373	0.373	2016		
	Shea Blvd at 114th St	All		0.261	0.261		0.374	0.374	2010		
	Shea Blvd at Frank Lloyd Wright Blvd	All		0.653	0.653		0.932	0.932	2010		
	Shea Blvd at 115th St	All		0.109	0.109		0.156	0.156	2010		
	Shea Blvd at 125th St	All		0.373	0.373		0.534	0.534	2012		
	Shea Blvd at 135th St	All		0.109	0.109		0.156	0.156	2012		
	Shea Blvd at 136th St	All		0.174	0.174		0.248	0.248	2011		
A93	Union Hills Rd: Hayden Rd to Pima Rd	ACI		13.419	13.419		23.098	23.098	2021	1.0	
TOTALS			**44.003**	**1648.406**	**1692.409**	**99.389**	**2717.773**	**2817.162**			

TABLE B-2
ARTERIAL STREET LIFE CYCLE PROGRAM - INTELLIGENT TRANSPORTATION SYSTEMS
REGIONAL FUNDING DISBURSEMENTS AND TOTAL EXPENDITURES: FY2006-2026
(2008 Year of Expenditure Dollars in Millions)

FACILITY	REGIONAL FUNDING			TOTAL EXPENDITURES			FINAL FY for CONST	OTHER PROJECT INFORMATION
	Disbursed through FY08 (YOE Dollars)	Estimated Future Disbursements FY09-2026 (2008$)	Total Disbursement FY06-26 (2008$, YOE$)	Expend through FY08 (YOE$)	Estimated Future Expend FY09-FY26 (2008$)	Total Expend FY06-FY26 (2008$,YOE$)		
Systemwide ITS	5.559	54.146	59.705	7.941	77.351	85.293	2008-2018	
TOTAL	**5.559**	**54.146**	**59.705**	**7.941**	**77.351**	**85.293**		

TABLE B-3
ARTERIAL STREET LIFE CYCLE PROGRAM CHANGES: FY 2009-2026

Advancements	
Projects	**Description**
Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave	Advanced DES from FY22 to FY07-FY09; ROW from FY22 to FY08/09; and CONST from FY22 to FY08/09
Lake Pleasant Pkwy: Dynamite Blvd to L303	Advanced Final DES from FY11 to FY09; ROW from FY12/13 to FY10; and CONST from FY13/14 to FY11
McKellips Rd: Crismon to Meridian Rd	Advanced DES from FY23 to FY16, ROW from FY24 to FY17, and CONST from FY25 to FY18
McKellips Rd: East of Sossaman Rd to Crismon	Advanced DES from FY21 to FY16, ROW from FY22 to FY17, and CONST from FY23 to FY18
Sonoran Blvd: Central to 32nd St	Advanced DES from FY11 to FY09 and ROW from FY12 to FY11
Deferments	
Projects	**Description**
Broadway Rd: Dobson Rd to Country Club Dr	Deferred DES from FY08 to FY09
Chandler Blvd/Dobson Rd: Intersection Improvement	Deferred CONST from FY08 to FY09
County Club/University Intersection Improvements	Deferred CONST from FY09 to FY10
Dobson Rd: Bridge over Salt River	Deferred DES from FY09 to FY13, ROW from FY10 to FY13, and CONST from FY11 to FY14
Dobson/Guadalupe Intersection Improvements	Deferred CONST from FY09 to FY10
Elliot Rd/Cooper Rd: Intersection Improvements	Deferred DES from FY11 to FY15; ROW from FY12 to FY16; and CONST from FY13 to FY17
Elliot Rd/Greenfield Rd: Intersection Improvements	Deferred DES from FY11 to FY13; ROW from FY12 to FY14; and CONST from FY13 to FY15
Elliot/Val Vista: Intersection Improvements	Deferred DES from FY11 to FY13; ROW from FY12 to FY14; and CONST from FY13 to FY15
Germann Rd: Gilbert Rd to Val Vista	Deferred DES from FY09 to FY12; ROW from FY10 to FY13; and CONST from FY11 to FY14
Germann Rd: Val Vista to Higley	Deferred DES from FY09 to FY12; ROW from FY10 to FY13; and CONST from FY11 to FY14
Gilbert Rd: Bridge over Salt River	Deferred DES from FY09 to FY13, ROW from FY10 to FY14, and CONST from FY11 to FY15
Gilbert Rd: SR-202L/Germann to Queen Creek Rd	Deferred DES and ROW from FY07 to FY08/09 and CONST from FY08 to FY08/09
Greenfield Rd: Baseline Rd to Southern Ave	Deferred ROW from FY08 to FY09 and CONST from FY09 to FY10
Greenfield Rd: Southern to University	Deferred PREDES from FY12 to FY13, DES from FY13 to FY14; ROW from FY14 to FY15; CONST from FY15 to FY16
Guadalupe Rd: Hawes Rd to Crismon Rd	Deferred DES from FY11 to FY12; ROW from FY12 to FY13; and CONST from FY13 to FY14
Guadalupe/Val Vista: Intersection Improvements	Deferred DES from FY10 to FY16; ROW from FY11 to FY2017; and CONST from FY12 to FY18
Happy Valley: 35th Ave to 43rd Ave	Deferred CONST from FY11 to FY12
Happy Valley: 43rd Ave to 55th Ave	Deferred CONST from FY11 to FY12
Happy Valley: 55th to 67th Ave	Deferred DES from FY10 to FY11 and CONST from FY12 to FY13
Hawes Rd: Santan Fwy to Ray Rd	Deferred ROW from FY09 to FY10
Lake Pleasant Pkwy: L303 to SR74/Carefree Hwy	Deferred DES from FY11 to FY19; ROW from FY11 to FY20; and CONST from FY12 to FY21; See Scope Changes
McKellips Rd: Bridge over Salt River	Deferred ROW from FY10 to FY13, and CONST from FY11 to FY14
McKellips Rd: Loop 101 (Pima Fwy) to SRP-MIC/Alma School Rd	Deferred DES from FY09 to FY13, ROW from FY10 to FY14, and CONST from FY11 to FY15

McKellips/Greenfield Intersection Improvements	Deferred DES from FY11 to FY14; ROW from FY12 to FY15; and CONST from FY13 to FY16
McKellips/Val Vista: Intersection Improvements	Deferred DES from FY11 to FY12; ROW from FY12 to FY13; and CONST from FY13 to FY14
Pima Rd: Thompson Peak Pkwy to Pinnacle Peak	Deferred ROW from FY06 to FY08/FY09 and CONST from FY08 to FY09/10
Power Rd/Pecos: Intersection Improvements	Deferred reimbursement for DES, ROW, CONST from FY08 to FY09
Power Rd: Baseline Rd to East Maricopa Floodway	Deferred reimbursement for CONST to FY09; CONST to occur in FY08/09
Power Rd: EMF to Santan Fwy	Deferred DES and ROW from FY08 to FY09 and CONST from FY09 to FY10
Queen Creek Rd: Arizona Ave to McQueen Rd	Deferred DES and ROW from FY05 to FY05-FY08 and CONST from FY08 to FY08/09
Queen Creek Rd: Greenfield to Higley	Deferred DES from FY09 to FY11; ROW from FY10 to FY12; and CONST from FY11 to FY13
Queen Creek Rd: Lindsay Rd to Val Vista	Deferred DES from FY09 to FY11; ROW from FY10 to FY12; and CONST from FY11 to FY13
Queen Creek Rd: McQueen Rd to Lindsay Rd	Deferred DES from FY08 to FY09; ROW from FY09 to FY10; and CONST from FY10 to FY11
Queen Creek Rd: Val Vista to Greenfield	Deferred DES from FY09 to FY11; ROW from FY10 to FY12; and CONST from FY11 to FY13
Ray Rd/Gilbert Rd: Intersection Improvements	Deferred DES from FY11 to FY16; ROW from FY12 to FY17; and CONST from FY13 to FY18
Ray/Alma School: Intersection Improvements	Deferred ROW from FY08 to FY09; and CONST from FY09 to FY10
Shea Blvd: Palisades Blvd to Saguaro Blvd	Deferred DES from FY08 FY09; See Scope Change
Thomas Rd: Gilbert to Val Vista	Deferred CONST from FY08/09 to FY10
Segment	
Projects	**Description**
McKellips/Greenfield & McKellips/Higley & McKellips/Val Vista Intersection Improvements	The original project was to be done concurrently. However, the City of Mesa is now treating the intersections as separate projects. Each intersection will be treated as a separate project to reflect this change. Programmed reimbursements have be split
McKellips/Power and McKellips/Recker Intersection Improvements	The original project was to be done concurrently. However, the City of Mesa is now treating the intersections as separate projects. Each intersection will be treated as a separate project to reflect this change. Programmed reimbursements have be split
Pima Rd: SR101L to Thompson Peak Parkway	Project limits of Pima Rd: Thompson Peak Pkwy to Happy Valley and Dynamite to Cave Creek extended to include SR101L to Thompson Peak Parkway
Exchange	
Projects	**Description**
Guadalupe Rd/Cooper Rd: Intersection Improvements	Guadalupe/Cooper was exchanged with Guadalupe/Power. Guadalupe/Cooper moved from Phase IV to Phase I, and Guadalupe/Power moved from Phase I to Phase IV.
SR-101L Frontage Rd: Pima Rd/ Princess Dr to Hayden Rd	Exchanged with Pima Rd: Thompson Peak Pkwy to Pinnacle Peak Parkway. The Frontage Rd moved to Phase II and Pima Rd moved to Phase I.
Scope Change	
Projects	**Description**
Happy Valley: Loop 303 to Lake Pleasant Parkway	The segment Happy Valley Rd: Lake Pleasant Pkwy (LPP) to Terramar Blvd- 0 to 2 lanes was changed to LPP to Loop 303 with work programmed to occur in Phase III.

Lake Pleasant Pkwy: Beardsley Rd and Lake Pleasant Parkway/83rd Avenue to SR74	Project segements revised to include Loop 303 to Dynamite Rd, Union Hills to Dynamite, and L303 to SR74.
Northern Parkway: Grand Ave to SR303L	Project scope revised to include new segments and phasing. The replacement project is Northern Pkwy: Sarival to Grand (Phase I)
Northern Parkway: SR101L to SR303	Project scope revised to include new segments and phasing. The replacement project is Northern Pkwy: Sarival to Grand (Phase III)
Northern Parkway: US60 (Grand Ave) to SR101L	Project scope revised to include new segments and phasing. The replacement project is Northern Pkwy: Sarival to Grand (Phase II)
Pima Rd: SR101 to Happy Valley Rd and Dynamite Rd to Cave Creek Rd	Project limits extended 1 mile to include SR101 to Thompson Peak Parkway. Additonal funds from South Frontage Rd (deleted project) assigned to the new segment.
Power Rd: EMF to Santan Fwy	Segment limit changed from Galveston Rd to Santan Fwy. Project name revised to reflect new segment limits.
Power Rd: Santan Fwy to Pecos Rd	Segment limit changed from Galveston Rd to Santan Fwy. Project name revised to reflect new segment limits.
Shea Blvd: Palisades Blvd to Cereus Wash	Scope change from one contiguous roadway improvement project to two smaller segments and one design only project. The original project limits, Shea Blvd: Palisades Blvd to Saguaro Blvd, have been extended less than 1 mile to Cereus Wash. The amount of reg
Shea Blvd: SR101L to SR87	Various intersection improvements on the corridor have been consolidated and others have been added. The programmed reimbursement amount for the project did not change; however, existing reimbursements were re-assigned to various intersection improvement

Add/Change Work Phases	
Projects	**Description**
McKellips Rd: Loop 101 (Pima Fwy) to SRP-MIC/Alma School Rd	Added Pre-Design for FY08. No reimbursement programmed
Happy Valley: 55th to 67th Ave	Added ROW in FY12

Miscellaneous	
Projects	**Description**
Arizona Avenue/Ray Rd: Intersection Improvement	Project complete. Excess funds moved to Chandler Blvd/Alma School Intersection Improvement project
Baseline Rd: Ellsworth Rd to Meridian	Moved reimbursement from FY22 to FY23
Chandler Blvd/Alma School: Intersection Improvement	Programmed reimbursement split between FY10 and FY11 to coincide with work programmed
Crimson Rd: Ray Rd to Germann Rd	Moved reimbursement from FY25 to FY26
Dobson Rd: Bridge over Salt River	Moved reimbursement from FY10/11 to FY13/14
Elliot Rd/Greenfield Rd: Intersection Improvements	Moved reimbursement for ROW and CONST to FY21
Elliot Rd/Higley Rd: Intersection Improvements	Moved reimbursement for DES, CONST and project savings to FY22
Elliot/Val Vista: Intersection Improvements	Moved reimbursement for DES and ROW to FY23
Germann Rd: Gilbert Rd to Val Vista	Moved reimbursements for DES, ROW and CONST to FY24
Germann Rd: Val Vista to Higley	Moved reimbursement for DES and ROW to FY25. Split CONST reimbursement between FY25/26
Gilbert Rd/University Dr: Intersection Improvements	Moved reimbursement from FY21 to FY22
Gilbert Rd: Chandler Heights Rd to Hunt Hwy	Moved reimbursement from FY21 to FY24
Gilbert Rd: Queen Creek Rd to Chandler Heights Rd	Moved reimbursement from FY21 to FY23
Hawes Rd: Elliot to Santan	FY work programmed for CONST
Kyrene Rd/Ray Rd: Intersection Improvements	Moved reimbursement from FY24 to FY25
Pima Rd: Thompson Peak Parkway to Happy Valley Rd and Dynamite Rd to Cave Creek Rd	Project renamed Pima Rd: SR101 to Happy Valley Rd and Dynamite Rd to Cave Creek Rd to reflect scope change
Price Rd (Extension): SR-202L to I-10	reimbursement
Ray Rd/McClintock Dr: Intersection Improvement	Reallocated funds from DES to CONST upon agency request

SR-101L South Frontage Rds: Hayden to Pima	Pima Rd: SR101 to Happy Valley Rd and Dynamite Rd to Cave
Val Vista Rd: Warber Rd to Pecos Rd	RARF Closeout project. Reimbursement moved from FY14 to FY08

Project Completions	
Projects	**Description**
Arizona Ave/Chandler Blvd	Completed
Arizona Ave/Elliot	Completed
Arizona Ave/Ray Rd	Completed
Happy Valley: I-17 to 35th Avenue	Completed
Lake Pleasant Parkway: Union Hills to Dynamite Rd	Completed
Shea Blvd at 90/92/96th Streets	Completed
Shea Blvd at Mayo Blvd/134th St	Completed
Shea Blvd at Via Linda (Phase I)	Completed
Val Vista Rd: Warner Rd to Pecos Rd	Completed

Appendix C

Transit Life Cycle Program

TABLE C-1
TRANSIT LIFE CYCLE PROGRAM - BUS OPERATIONS: BUS RAPID TRANSIT/EXPRESS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006 to FY 2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Route	Expenditures: through FY 2008: (YOE Dollars)	Estimated Future Costs: FY2009 - 2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Service Start (Fiscal Year)	Other Project Information
T1	Ahwatukee Connector	0.00	1.43	1.43	2017	
T2	Ahwatukee Express	0.55	10.73	11.29	2008	
T3	Anthem Express	0.00	3.86	3.86	2018	
T4	Apache Junction Express	0.00	4.59	4.59	2011	
T5	Arizona Avenue Arterial BRT	0.00	9.18	9.18	2011	
T6	Avondale Express	0.00	2.70	2.70	2020	
T7	Black Canyon Freeway Corridor	0.00	2.58	2.58	2016	
T8	Buckeye Express	0.00	5.34	5.34	2015	
T9	Chandler Boulevard Arterial BRT	0.00	3.09	3.09	2024	
T10	Deer Valley Express	0.65	16.24	16.90	2010	
T11	Desert Sky Express	0.32	4.88	5.20	2008	
T12	East Loop 101 Connector	0.00	5.76	5.76	2009	
T13	Grand Avenue Limited	0.00	12.21	12.21	2013	
T14	Loop 303 Express	0.00	1.93	1.93	2023	
T15	Main Street Arterial BRT	0.00	25.49	25.49	2009	
T16	North Glendale Express	0.57	10.23	10.80	2008	
T17	North I-17 Express	0.00	2.23	2.23	2022	
T18	North Loop 101 Connector	0.61	11.01	11.62	2008	
T19	Papago Fwy Connector	0.00	8.03	8.03	2009	
T20	Peoria Express	0.00	4.67	4.67	2014	
T21	Pima Express	0.00	3.88	3.88	2013	
T22	Red Mountain Express	0.00	4.70	4.70	2009	
T23	Red Mountain Fwy Connector	0.00	3.14	3.14	2019	
T24	Santan Express	0.00	10.12	10.12	2018	
T25	Scottsdale/Rural Arterial BRT	0.00	18.79	18.79	2014	
T26	South Central Avenue	0.00	7.02	7.02	2015	
T27	South Central Avenue Arterial BRT	0.00	6.76	6.76	2016	

Map Code	Route	Expenditures: through FY 2008: (YOE Dollars)	Estimated Future Costs: FY2009 - 2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Service Start (Fiscal Year)	Other Project Information
T28	SR 51 Express	0.44	9.05	9.49	2022	
T29	Superstition Fwy Connector	0.00	1.50	1.50	2012	
T30	Superstition Springs Express	0.00	6.51	6.51	2019	
T31	West Loop 101 Connector	0.00	9.80	9.80	2009	
	TOTAL	**3.15**	**227.45**	**230.60**		

TABLE C-2
TRANSIT LIFE CYCLE PROGRAM - BUS OPERATIONS: REGIONAL GRID
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006 to FY 2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Route	Expenditures: through FY 2008: (YOE Dollars)	Estimated Future Costs: FY 2009 - 2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Service Start (Fiscal Year)	Other Project Information
T40	59th Avenue	0.00	11.39	11.39	2020	
T41	83rd Avenue/75th Avenue	0.00	8.53	8.53	2023	
T42	99th Avenue	0.00	9.84	9.84	2021	
T43	Alma School Rd.	0.00	28.92	28.92	2014	
T44	Arizona Avenue/Country Club	0.00	25.57	25.57	2012	
T45	Baseline Rd	0.00	39.98	39.98	2011	
	Dobson Rd	0.00	31.39	31.39	2009	
	Southern Ave	0.00	64.62	64.62	2009	
T46	Bell Road	0.00	37.90	37.90	2019	
T47	Broadway	0.00	46.29	46.29	2013	
T48	Buckeye Road	0.00	14.37	14.37	2021	
T49	Camelback Road	0.00	64.56	64.56	2013	
T50	Chandler Blvd.	2.80	62.49	65.29	2008	
T51	Dunlap/Olive Avenue	0.00	10.09	10.09	2021	
T52	Dysart Road	0.00	15.86	15.86	2015	
T53	Elliot Road	0.00	35.78	35.78	2013	
T54	Gilbert Road	0.00	32.64	32.64	2010	
T55	Glendale Avenue	4.97	105.85	110.82	2008	
T56	Greenfield Road	0.00	7.43	7.43	2022	
T57	Hayden/McClintock	0.00	42.05	42.05	2015	
T58	Indian School Road	0.00	25.41	25.41	2020	
T59	Litchfield Road	0.00	5.94	5.94	2024	
T60	Main Street	0.00	26.37	26.37	2009	
T61	McDowell/McKellips	0.00	69.06	69.06	2014	
T62	Peoria Ave./Shea	0.00	76.58	76.58	2015	
T63	Power Road	0.00	21.71	21.71	2010	
T64	Queen Creek Road	0.00	9.77	9.77	2019	
T65	Ray Road	0.00	20.81	20.81	2016	
T66	Scottsdale/Rural	8.82	78.69	87.51	2007	

Map Code	Route	Expenditures: through FY 2008: (YOE Dollars)	Estimated Future Costs: FY 2009 - 2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Service Start (Fiscal Year)	Other Project Information
T67	Tatum / 44th Street	0.00	19.72	19.72	2020	
T68	Thomas Road	0.00	22.27	22.27	2020	
T69	University Drive	0.00	51.36	51.36	2012	
T70	Van Buren	0.00	20.56	20.56	2020	
T71	Waddell/Thunderbird	0.00	20.01	20.01	2020	
	TOTAL	**16.59**	**1,163.81**	**1,180.40**		

TABLE C-3
TRANSIT LIFE CYCLE PROGRAM - BUS OPERATIONS: OTHERS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006 to FY 2026
(2008 and Year of Expenditure Dollars in Millions)

Category	Expenditures: through FY 2008: (YOE Dollars)	Estimated Future Costs: FY 2009 - 2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Service Start (Fiscal Year)	Other Project Information
ADA Paratransit	18.69	232.35	251.04	2006	
Regional Passenger Support Services	17.97	141.39	159.36	2006	
Existing Local Service	10.50	27.97	38.47	2006	
Existing Express Service	7.02	39.54	46.56	2006	
Rural/Non-Fixed Route Service	1.10	15.87	16.97	2006	
Vanpool Service			0.00	2006	
Safety and Security Costs	1.06	43.45	44.52	2006	
Operating Contingency	0.67	36.22	36.89	2006	
RPTA Planning and Administration	16.53	85.77	102.30	2006	Primarily funded through RPTA's allocation from Regional Area Road Fund
TOTAL	**73.53**	**622.58**	**696.10**		

TABLE C-4
TRANSIT LIFE CYCLE PROGRAM - BUS CAPITAL: FACILITES
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006 to FY 2026
(2008 and Year of Expenditure Dollars in Millions)

Category	Expenditures: through FY 2008 (YOE Dollars)	Estimated Future Costs: FY 2009- 2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Total Number of Units to be Constructed/ Installed through FY 2026	Number of Units Constructed/ Installed through FY 2008	Other Project Information
Arterial BRT Right-of-Way and Improvements	1.23	109.04	110.27	60	0	
Bus Stop Pullouts/Improvements	0.00	31.32	31.32	1200	0	
Dial-a-Ride and Rural Bus Maintenance Facilities	0.00	18.97	18.97	1	0	One DAR facility and rural facility were eliminated
Intelligent Transportation Systems (ITS) / Vehicle Management Systems (VMS)	4.61	32.48	37.09	1684	0	
Park & Ride Lots	0.00	58.21	58.21	13	0	
Standard Bus Maintenance Facilities*	62.92	147.84	210.76	6	2	
Transit Centers (4 Bay)	0.00	11.38	11.38	6	0	
Transit Centers (6 Bay)	0.00	10.95	10.95	4	0	
Transit Centers (Major Activity Centers)	0.00	19.70	19.70	3	0	
Vanpool Vehicle Maintenance Facilities	0.00	0.00	0.00	0	0	Project was eliminated from plan
Contingency	0.00	33.45	33.45			
TOTAL	**68.76**	**473.34**	**542.10**			

* Includes four new operations/maintenance facilities and two rehab facility.

TABLE C-5
TRANSIT LIFE CYCLE PROGRAM - BUS CAPITAL: FLEET
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006 to FY 2026
(2008 and Year of Expenditure Dollars in Millions)

Category	Expenditures: through FY 2008 (YOE Dollars)	Estimated Future Costs: FY 2009 - 2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Total Number of Units to be Acquired through FY 2026	Number of Units Acquired through FY 2008	Other Project Information
Paratransit	10.23	86.93	97.16	1212	130	
Fixed Route	132.94	843.70	976.64	2110	327	
Rural Route	0.39	2.65	3.04	39	6	
Vanpool	6.17	38.93	45.10	1498	238	
Contingency	0.00	36.46	36.46			
TOTAL	**149.74**	**1,008.67**	**1,158.40**			

TABLE C-6
TRANSIT LIFE CYCLE PROGRAM - LIGHT RAIL TRANSIT: SUPPORT INFRASTRUCTURE
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Facilitiy	Expenditures: through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Year Programmed for Final Construction	Project Length (Centerline Miles)	Other Project Information
	Design	Right-of-Way	Construction	Total					
Glendale Link: 19th Ave./Bethany Home to Downtown Glendale	0.00	0.00	0.00	0.00	32.75	32.75	2017	5	
Northwest Link Phase 1: 19th Ave/Bethany Home to 19th Ave/Dunlop	0.00	0.00	0.00	0.00	59.74	59.74	2012	3.2	
Northwest Link Phase 2: 19th Ave./Dunlop to Rose Mofford Sports Complex	0.00	0.00	0.00	0.00	14.73	14.73	2017	1.8	
Minimum Operating System: 19th Ave./Bethany Home to Main St./Sycamore	0.00	0.00	65.64	65.64	125.97	191.61	2011	20	Segment will open in FY 2009, but reimbursements will continue through FY 2011
Systemwide - Infrastructure Improvements	2.12	0.00	109.95	112.07	24.40	136.47	2026	57.5	
TOTAL	**2.12**	**0.00**	**175.59**	**177.71**	**257.59**	**435.30**			

TABLE C-7
TRANSIT LIFE CYCLE PROGRAM - LIGHT RAIL TRANSIT: ROUTE EXTENSIONS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2008 and Year of Expenditure Dollars in Millions)

Map Code	Facilitiy	Expenditures: through FY 2008 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2009-2026 (2008 Dollars)	Total Costs: (2008 and YOE Dollars)	Year Programmed for Final Construction	Project Length (Center-line Miles)	Other Project Information
		Design	Right-of-Way	Construction	Total					
T80	Glendale Link: 19th Ave./Bethany Home to Downtown Glendale	0.48	0.00	0.00	0.48	331.09	331.57	2017	5.0	
T81	I-10 West Link: Washington Ave./Central Ave. to 79th Ave.	1.16	0.00	0.00	1.16	783.54	784.70	2020	11.0	
T82	Northwest Link Phase 1: 19th Ave/Bethany Home to 19th Ave/Dunlop	16.23	16.94	0.00	33.17	149.38	182.55	2012	3.2	
	Northwest Link Phase 2: 19th Ave./Dunlop to Rose Mofford Sports Complex	0.00	0.00	0.00	0.00	82.24	82.24	2017	1.8	
T83	Northeast Phoenix Link: Indian School Rd./Central Ave. to Paradise Valley Mall	0.00	0.00	0.00	0.00	874.37	874.37	2025	12.0	
T84	Tempe South Link: Main St./ Rural Rd. to Southern Ave.	2.02	0.00	0.00	2.02	143.71	145.73	2015	2.0	
T85	West Mesa Link: Main St./Sycamore to Main St./Mesa Dr. *	2.37	0.00	0.00	2.37	194.37	196.73	2015	2.7	
	TOTAL	**22.26**	**16.94**	**0.00**	**39.20**	**2,558.70**	**2,597.89**			

* Technology to be determined.

TABLE C-8
TRANSIT LIFE CYCLE PROGRAM - BUS RAPID TRANSIT/EXPRESS
ROUTE CHARACTERISTICS AND USAGE SUMMARY: FY 2006 to FY 2026

Map Code	Route	Service Start (Fiscal Year)	Route Length (Miles)	Annual Bus-Miles of Service (Thousands)	Total Boardings: through FY 2008 (Thousands)	Farebox Revenues: through FY 2008 (YOE Dollars)	Annual Average Boardings: through FY 2008 (Thousands)	Annual Average Farebox Revenues: through FY 2008 (YOE Dollars)	Other Project Information
T1	Ahwatukee Connector	2017	14.7	30,010					
T2	Ahwatukee Express	2008	20.8	153,175	223.2	199,900	223.2	199,900	
T3	Anthem Express	2018	30.4	77,390					
T4	Apache Junction Express	2011	37.4	76,350					
T5	Arizona Avenue Arterial BRT	2011	15.0	152,870					
T6	Avondale Express	2020	19.0	77,570					
T7	Black Canyon Freeway Corridor	2016	16.6	67,700					
T8	Buckeye Express	2015	43.7	66,910					
T9	Chandler Boulevard Arterial BRT	2024	18.5	226,620					
T10	Desert Sky Express	2008	22.6	86,347	173.3	155,200	173.3	155,200	
T11	Deer Valley Express	2010	13.6	224,583					
T12	East Loop 101 Connector	2009	44.6	90,930					
T13	Grand Avenue Limited	2013	25.9	158,430					
T14	Loop 303 Express	2023	38.1	77,780					
T15	Main Street Arterial BRT	2009	10.7	284,300					
T16	North Glendale Express	2008	29.6	91,901	32.0	28,700	32.0	28,700	
T17	North I-17 Express	2022	34.4	87,620					
T18	North Loop 101 Connector (Surprise to Scottsdale)	2008	31.6	100,551	12.0	10,700	12.0	10,700	
T19	Papago Fwy Connector	2009	30.0	61,280					
T20	Peoria Express	2014	24.1	73,640					
T21	Pima Express	2013	35.4	72,190					
T22	Red Mountain Express	2009	32.8	66,960					
T23	Red Mountain Fwy Connector	2019	19.2	78,510					

Map Code	Route	Service Start (Fiscal Year)	Route Length (Miles)	Annual Bus-Miles of Service (Thousands)	Total Boardings: through FY 2008 (Thousands)	Farebox Revenues: through FY 2008 (YOE Dollars)	Annual Average Boardings: through FY 2008 (Thousands)	Annual Average Farebox Revenues: through FY 2008 (YOE Dollars)	Other Project Information
T24	Santan Express	2018	44.9	228,910					
T25	Scottsdale/Rural Arterial BRT	2014	23.1	282,770					
T26	South Central Avenue	2015	9.4	114,800					
T27	South Central Avenue Arterial BRT	2016	23.7	120,900					
T28	SR 51 Express	2022	22.3	116,840					
T29	Superstition Fwy Connector	2012	17.5	26,830					
T30	Superstition Springs Express	2019	31.9	162,540					
T31	West Loop 101 Connector	2009	31.4	95,930					
	TOTAL		**812.8**	**3,633,136**	**440.6**	**394,500**	**441**	**394500**	

TABLE C-9
TRANSIT LIFE CYCLE PROGRAM - REGIONAL GRID
ROUTE CHARACTERISTICS AND USAGE SUMMARY: FY 2006 to FY 2026

Map Code	Route	Service Start (Fiscal Year)	Route Length (Miles)	Annual Bus-Miles of Service (Thousands)	Total Boardings: through FY 2008 (Thousands)	Farebox Revenues: through FY 2008 (YOE Dollars)	Annual Average Boardings: through FY 2008 (Thousands)	Annual Average Farebox Revenues: through FY 2008 (YOE Dollars)	Other Project Information
T40	59th Avenue	2020	16.2	394,240					
T41	83rd Avenue/75th Avenue	2023	21.4	542,440					
T42	99th Avenue	2021	16.5	401,300					
T43	Alma School Rd.	2014	19.1	523,450					
T44	Arizona Avenue/Country Club	2012	16.3	462,380					
T45	Baseline Road	2011	19.6	586,090					
	Dobson Road	2009	15.7	470,800					
	Southern Avenue	2009	28.1	969,020					
T46	Bell Road (via 303)	2019	38.1	1,138,460					
T47	Broadway	2013	27.8	776,250					
T48	Buckeye Road (Litchfield Road to Central Ave.)	2021	22.7	586,460					
T49	Camelback Road	2013	28.5	851,220					
T50	Chandler Blvd.	2008	32.7	774,134	322.2	222,000	322.2	222,000	
T51	Dunlap/Olive Avenue	2021	14.3	411,720					
T52	Dysart Road	2015	21.0	311,900					
T53	Elliot Road	2013	21.9	600,020					
T54	Gilbert Road	2010	20.9	519,070					
T55	Glendale Avenue	2008	32.7	938,852	2,086.5	1,437,200	2,086.5	1,437,200	
T56	Greenfield Road	2022	15.2	369,300					
T57	Hayden/McClintock	2015	29.7	826,990					
T58	Indian School Road	2020	30.4	879,050					
T59	Litchfield Road	2024	21.5	523,780					
T60	Main Street	2009	17.3	509,730					
T61	McDowell/McKellips	2014	41.8	1,250,210					
T62	Peoria Ave./Shea	2015	43.0	1,506,060					
T63	Power Road	2010	14.2	345,160					

Map Code	Route	Service Start (Fiscal Year)	Route Length (Miles)	Annual Bus-Miles of Service (Thousands)	Total Boardings: through FY 2008 (Thousands)	Farebox Revenues: through FY 2008 (YOE Dollars)	Annual Average Boardings: through FY 2008 (Thousands)	Annual Average Farebox Revenues: through FY 2008 (YOE Dollars)	Other Project Information
T64	Queen Creek Road (Pecos P&R to Power Road)	2019	12.0	293,410					
T65	Ray Road	2016	18.4	447,870					
T66	Scottsdale/Rural	2007	28.9	1,179,842	3,265.6	2,115,400	1,632.8	1,057,700	
T67	Tatum / 44th Street	2020	22.8	682,180					
T68	Thomas Road	2020	26.7	770,530					
T69	University Drive (to Ellsworth Road)	2012	27.8	802,220					
T70	Van Buren	2020	23.4	711,460					
T71	Waddell/Thunderbird	2020	27.9	692,370					
	TOTAL		**814.0**	**23,047,968**	**5,674**	**3,774,600**	**4042**	**2716900**	