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2012 ANNUAL REPORT

ON THE STATUS OF THE IMPLEMENTATION OF

PROPOSITION 400

AUGUST, 2012

REGIONAL TRANSPORTATION PLAN

MARICOPA ASSOCIATION of GOVERNMENTS

Maricopa Association of Governments

2012 ANNUAL REPORT ON THE STATUS OF THE IMPLEMENTATION OF PROPOSITION 400

August 2012

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SUMMARY OF FINDINGS AND ISSUES

The *2012 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 2012 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.

- <u>During FY 2012, revenue deficits in the life cycle programs were addressed to re-establish cost/revenue balance in each of the major modal programs.</u>

  All three life cycle programs -- freeways, arterial and transit – have been dealing with lower sales and other tax revenues and a high level of uncertainty about future Federal transportation funding. On September 21, 2011, the MAG Regional Council approved the rebalanced FY 2012 Arterial Life Cycle Program. On May 17, 2012, the Valley Metro RPTA and METRO Board of Directors approved a rebalanced 2012 Transit Life Cycle Program (TLCP) update. On May 23, 2012, the MAG Regional Council approved a rebalancing scenario for the Regional Freeway/Highway Life Cycle Program.

- <u>The results of a performance audit of the Regional Transportation Plan conducted by an independent auditor under contract to the State Auditor General were released in report form.</u>

  On December 21, 2011, the <u>*Performance Audit of the Maricopa County Regional Transportation Plan*</u> was released by the State Auditor General. The audit "found no substantial evidence to warrant drastic modifications to the transportation system or specific projects … (and) … the RTP Partners should continue to implement the current transportation system and strive to continually reassess system performance to make modifications as needed."

In addition, the audit provided 27 recommendations aimed at more efficient and effective implementation of the RTP, as well as stronger accountability for the performance of the plan.

On June 25, 2012, the Maricopa Association of Governments (MAG), the Arizona Department of Transportation (ADOT), the Regional Public Transportation Authority (RPTA), and METRO Rail provided a combined, detailed assessment of the efforts made to date in implementing the audit recommendations.

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 2012 receipts from the Proposition 400 half-cent sales tax were 4.8 percent higher than receipts in FY 2011.

  The receipts from the Proposition 400 half-cent sales tax in FY 2012 totaled approximately $323 million, corresponding to a 4.8 percent increase over FY 2011. With an increase in collections also occurring in FY 2011, this represents the second consecutive year of higher revenues. However, the collections for FY 2012 remain 17.3 percent lower than those in FY 2007.

- Forecasts of Proposition 400 half-cent revenues are 3.4 percent lower for the period FY 2013 through FY 2026, compared to the 2011 Annual Report estimate.

  Future half-cent revenues for the period FY 2013 through FY 2026 are currently forecasted to total $6.5 billion. This amount is $232 million, or 3.4 percent, lower than the forecast for the same period presented in the 2011 Annual Report. The Proposition 400 half-cent revenue forecasts will be updated again in the fall of 2012

- Forecasts of total ADOT Funds dedicated to the MAG area for FY 2013 through FY 2026 are slightly higher (1.0 percent) than the 2011 Annual Report estimate.

  The forecast for ADOT funds for FY 2013 through FY 2026 is $46 million or 1.0 percent higher, compared to the forecast for the same period in the 2010 Annual Report. These revenues include Federal funds that correspond to the programs as structured in SAFETEA-LU. Federal funds forecasts will be updated in subsequent Annual Reports to correspond to the new Federal

transportation legislation (MAP-21) signed into law by President Obama on July 6, 2012.

- Forecasts of total MAG Federal Transportation Funds for FY 2013 through FY 2026 are somewhat higher compared to the 2011 Annual Report estimate.

  The forecasted MAG Federal aid revenues for the period FY 2013 through FY 2026 total $3.7 billion. This forecast is approximately four percent higher than that in the 2011 Annual Report for the same period. This was due primarily to the level of Federal reimbursements projected for the LRT/High Capacity Transit program.

- Although new Federal transportation funding legislation has been approved, the long-term outlook for Federal funding remains uncertain.

  On July 6, 2012, President Obama signed legislation known as the 'Moving Ahead for Progress in the 21st Century Act', or 'MAP-21'. This two-year transportation reauthorization bill provides federal funding of transportation programs through September 2014. Total annual funding provided by MAP-21 is generally comparable to that in the previous Federal legislation (SAFETEA-LU). However, since MAP-21 covers only a two-year period, future Federal funding levels will be subject to change within a relatively short time.

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM

The Freeway/Highway Life Cycle Program (FLCP) 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.

- A number of major freeway/highway construction projects were completed, underway, or advertised for bids during FY 2012.

Completed

- Loop 101 (I-10 to Tatum Blvd.): New HOV lanes.
- SR143 (at Loop 202 Access Road): Interchange improvements.
- Loop 202/Santan (Gilbert Rd. to I-10): New HOV lanes. -
- MAG Region (Various Locations): Noise Walls.

Advertised for Bids or Under Construction

- SR 24 (Loop 101 to Ellsworth Rd.): Construct interim freeway.
- SR 85 (at B-8/Maricopa Rd): Reconstruct intersection.

- US 60 (Loop 101 to 71st Avenue): Roadway improvements.
- US 60 (71st Avenue to Van Buren St..): Roadway improvements.
- Loop 303/I-10: Construct new system interchange.
- Loop 303 (Thomas Rd. to Camelback Rd.): Construct new freeway.
- Loop 303 (Camelback Rd. to Glendale Ave.): Construct new freeway.
- Loop 303 (Glendale Ave. to Peoria Ave.): Construct new freeway.
- Loop 303 (Peoria Ave. to Mountain View Blvd.): Construct new freeway.

- A project to add high occupancy vehicle (HOV) lane ramps at Loop 101 and Maryland Avenue was added to the FLCP.

  On January 25, 2012, the MAG Regional Council approved amendment of the Regional Transportation Plan - 2010 Update to include a new project to add HOV direct connection ramps at the Loop 101 and Maryland Avenue grade separation. Funding for the project was provided by a combination of uncommitted funds in the MAG portion of the Statewide Transportation Acceleration Needs Account and the MAG Regional Freeway/Highway Program. The project is programmed as a design/build project in FY 2013.

- On May 23, 2012, the MAG Regional Council approved a rebalancing scenario for the Regional Freeway/Highway Life Cycle Program.

  Cash flow analysis indicated that there was an overall funding deficit of approximately $390 million and negative year-end cash balances for the FLCP. A rebalancing scenario was approved that: (1) repositioned the SR-202L/South Mountain Freeway and Interstate 10/Maricopa Freeway projects to improve the Program's cash flow, (2) transferred funding from the SR-303L segment between US-60 and Interstate 17 to the SR-303L segment between Interstate 10 and MC-85, and (3) removed $300 million from the Program's budget for the Interstate 17/Black Canyon Freeway corridor. The long-term financial forecast for the FLCP indicates a positive balance of approximately $166 million through FY 2026, with no annual deficits.

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 significant funding from both the Proposition 400 half-cent sales tax and Federal highway programs, as well as a local match component. Although MAG is charged with the responsibility of administering the overall program, the actual construction of projects is accomplished by local government agencies. MAG distributes the regional share of the funding on a reimbursement basis.

- During FY 2012, a total of $103 million in ALCP project expenses were reimbursed to the implementing agencies.

  During FY 2012, a total of $103 million in ALCP project expenses were reimbursed to implementing agencies. This included reimbursements to eight individual agencies, as well as funding for projects in the MAG ITS program.

- Continuing progress on projects in the Arterial Street Life Cycle Program has been maintained.

  As of FY 2012, $327 million has been disbursed since the beginning of the Program for the completion of 30 projects, covering arterial street widening and intersection improvements throughout the MAG area. In addition, a total of nearly $31 million in reimbursements has been provided to ITS projects through FY 2012.

- On September 21, 2011, the MAG Regional Council approved a rebalanced FY 2012 Arterial Life Cycle Program, and it is anticipated that a balanced FY 2013 ALCP will be adopted in September 2012.

  A $197 million reduction in the FY 2012 ALCP through FY 2026 was necessitated by lower half-cent sales tax revenue forecasts. A rebalanced FY 2012 ALCP was achieved by proportionally reducing each agency's program allocation.

  Due to a continued decline in program revenues, the FY 2013 update of the ALCP encountered an additional deficit of approximately $40 million through FY 2026. In addition, there was a need to rebalance annual expenditures and revenues, which were out of balance in a number of years. To meet the required program reductions, MAG staff and member agencies are reviewing alternative reprogramming scenarios. It is anticipated that a fiscally balanced, FY 2013 Arterial Life Cycle Program will be considered for approval in September 2012.

TRANSIT LIFE CYCLE PROGRAM

The Transit Life Cycle Program (TLCP) 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.

- One new supergrid bus route was implemented in FY 2012 and several additional routes will start service during the next five years.

  Routes Implemented During FY 2012:

  - Arizona Avenue/Country Club Drive (T44); Service start: FY 2012.

  Routes Planned for Implementation During FY 2013 through FY 2017:

  - Baseline Road (T45); Service start: FY 2013.
  - Elliot Road (T53); Service start: FY 2013.
  - South Central Avenue Express (T26); Service start: FY 2013.
  - Thomas Road (T68); Service start: FY 2013.
  - Van Buren Street (T70); Service start: FY 2013.
  - McDowell/McKellips Roads (T61); Service start: FY 2014.
  - Scottsdale/Rural BRT (T25); Service start: FY 2015.
  - Waddell/Thunderbird (T71); Service start: FY 2015.

- Completion of the Northwest Extension-Phase 1 (Bethany Home Rd. to Dunlop Rd.) was accelerated.

  Completion of the Northwest Extension-Phase 1 (Bethany Home Rd. to Dunlop Rd.), which had been scheduled to be complete in FY 2024, is now scheduled to be complete in FY 2016. It is expected that utility relocations and street improvements will be completed in the corridor in FY 2013 to facilitate the light rail construction. Phase 2 (Dunlop Rd. to Rose Mofford Sports Complex) is scheduled to be complete in FY 2026.

- On May 17, 2012, the Valley Metro RPTA and METRO Board of Directors approved a rebalanced 2012 Transit Life Cycle Program (TLCP) update.

  Due to the continued economic downturn and the decrease in estimated future revenues, in FY 2011 it was determined estimated TLCP costs for FY 2012 to 2026 were not in balance with projected future funds available, with a deficit of approximately $581 million (2011 $'s).

  On May 17, 2012, the Valley Metro RPTA and METRO Board of Directors approved the 2012 Transit Life Cycle Program (TLCP) update. An updated financial model for bus service is balanced through FY 2018, shows deficits in FY 2019 through FY 2025 and a final positive balance in FY 2026. The high capacity / light rail transit (HCT/LRT) component of the TLCP has a fund balance of $39 million in FY 2026 after the completion of all HCT/LRT projects in the RTP, with the exception of construction of the Northeast Phoenix corridor.

Balance was achieved in FY 2012 by delaying the implementation of numerous projects and reducing the scope of many other projects, especially bus route frequencies and routing. During FY 2012, significant efforts were also made to identify further cost savings or to enhance operating revenues.

- Federal discretionary funding for transit continues to be an important issue.

  A large part of the funding for the LRT/HCT system is awarded by the US Department of Transportation through the discretionary "New Starts Program". 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 recently approved Federal transportation legislation, Moving Ahead for Progress in the 21st Century (MAP-21), makes significant changes to the federal transit funding programs. MAP-21 eliminates many of the discretionary programs in favor of formula based programs. This allows a more predictable stream of federal revenues for planning purposes. RPTA, METRO and MAG will need to monitor the implementation of MAP-21 and evaluate its impact on the RTP.

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.

- Freeway vehicle miles of travel (VMT) have increased recently.

  The total number of freeway vehicle miles traveled in 2011 was 29,495,000, which is a 1.4 percent increase over the level in 2010 and only 0.5 percent below the level in 2007. This is illustrative of the fact that regional economic conditions - generally following the slight upward trend in the national economy - are being reflected in travel demand in the MAG region.

CHAPTER ONE

INTRODUCTION

The *2012 Annual Report on the Status of the Implementation of Proposition 400* covers progress on transportation projects being implemented under Proposition 400, through the fiscal year ending June 30, 2012. The report also addresses the future outlook for the Proposition 400 program through June 30, 2026. 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.

1.1 REQUIREMENT FOR THE ANNUAL REPORT

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.

1.2 ANNUAL REPORT CONTENT

The Annual Report addresses project status and tabulates expenditures through the fiscal year (FY) 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.

1.3 CLARIFICATIONS REGARDING DATA AND TERMINOLOGY

As specified in legislation, in 2010 the Auditor General contracted with a nationally recognized independent auditor to conduct a performance audit of the Regional Transportation Plan. The results of the audit were released in

December 2011. In response to audit recommendations regarding the Annual Report, the following clarifications regarding data and terminology used in the report are being provided.

- Data Consistency - In preparing the Annual Report, every effort is made to use data sources that are consistent with other documents that publish similar data, such as regional transportation plans, transportation improvement programs, and life cycle programs. However, these reports are issued at different times and serve different purposes, which means that each report may not contain exactly the same set of data presented in the other reports. Therefore, minor differences in the data provided in the reports may continue to be present. Specific data sources used in the Annual Report are identified at the end of the document.

  It should be noted that the Annual Report is intended to identify overall progress and future trends in the Proposition 400 program, as opposed to providing a detailed financial accounting record. Delaying its issue to achieve total uniformity with other reports would lessen the ability to provide a timely report to decision-makers and the public.

- Fourth Quarter Estimates - In some instances, expenditure data may include estimates for the fourth quarter of the most recent fiscal year included in the Annual Report. These estimates are updated later to reflect actual expenditures when that data is available and are provided in subsequent Annual Reports. Postponing the issue of the Annual Report to await final fourth quarter data would require significant delays, greatly lessen the relevancy of the Annual Report in the decision-making process.

- Expenditure Data Adjustments - Close coordination is maintained with the agencies that supply expenditure data for the Annual Report, in an effort to ensure that cost items are treated consistently from year-to-year. However, due to the timing of billing receipts, collection of other financial information, and posting of necessary accounting adjustments, there may be anomalies in the expenditures reported by the agencies for a given project from one year to the next. This variation is minor and generally reflects the increasing accuracy of the figures being provided by the agencies. Expenditure tabulations in the Annual Report correspond to the data received from the reporting agencies, with specific sources identified at the end of the document.

- Project Schedules - In describing project status, both “open to traffic” and “programmed for final construction” are used. The term “open to traffic” is used if the specific date when a facility has been opened, or will be open with some certainty, is known. The term “programmed for final construction” is utilized to indicate the year in which funding has been identified to begin final construction of a facility. The latter term is employed due to the difficulty in

specifying an “open to traffic” date for future projects that may not even be designed at this time, much less have specific bid and construction schedules established. An “open to traffic” date for a future project may be identifiable if it is under construction or has scheduled bid dates.

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. In 2010, the Auditor General contracted with an independent auditor to conduct a performance audit of the Regional Transportation Plan. The results of the audit were released in December 2011. (See Chapter Three.)

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. 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.

In March 2012, a decision was made to employ a single Chief Executive Officer (CEO) for both RPTA/Valley Metro (Bus) and Valley Metro Rail. Subsequently, the staffs of the two agencies were integrated into a single organization under the direction of the CEO. The combined staff organization will address all administrative, planning and operational functions for both agencies, including: (1) communications and marketing, (2) planning and development, (3) design and construction, (4) operations and maintenance, (5) finance, (6) administrative and organizational development, (7) legal, and (8) intergovernmental relations. The legal structure and Boards of the two agencies will not be affected.

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 2011.

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 is developed and updated through a comprehensive, performance-based process, consistent with State legislation. This process takes into account household trip-making characteristics and regional travel patterns, as well as the effects of population growth, to identify future demand for transportation facilities. The transportation planning process establishes goals and objectives, estimates future travel demand, identifies and evaluates facility options, and defines a planned, multi-modal transportation network. As part of the process, funding for the implementation of the plan is identified and a facility phasing program is prepared.

The transportation planning process also includes broad-based public input, which is received as the result of an extensive public involvement process that includes an extensive public outreach effort. Public involvement meetings and events are held to receive input from citizens throughout the MAG Region. Additional comments are 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 includes 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 takes into account the ADOT Freeway/Highway Life Cycle Program, which is a 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 also includes 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 takes into account the MAG Arterial Life Cycle Program, which is a listing of street projects that have been identified in the RTP for regional funding (see Chapter Seven).

4.1.4 Transit Element

The RTP includes 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/high capacity transit 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/High Capacity Transit: The RTP includes a 57.7-mile Light Rail Transit (LRT)/High Capacity Transit (HCT) system, which incorporates the 20-mile, LRT 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. Light rail transit has been selected as the technology on the northwest extension and the extension to Mesa Drive. The technology for the remaining segments has not yet

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 takes into account the RPTA Transit Life Cycle Program, which is a 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:

- Generally, 30 percent for major street projects, bicycle and pedestrian projects. Under certain limited conditions, this requirement may be less depending on the type of Federal funds that may be utilized on a given project.

- For air quality and transit projects involving Federal funds, minimum Federal match requirements are 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.

In the Freeway/Highway Life Cycle Program, MAG recognizes that local jurisdictions may want to accelerate highway projects by providing the local jurisdiction's financial resources to the program. Acceleration of specific highway projects benefits not only the affected local jurisdiction, but also the entire region. To facilitate local financing that allows the acceleration of freeway/highway construction in the region, MAG has adopted a Highway Acceleration Policy. This policy includes a provision that 50 percent of the interest expense incurred by the local jurisdiction will be paid by regional program revenues.

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.

Consultation on Resource and Environmental Factors: As part of the planning process for the update of the Regional Transportation Plan (RTP), MAG reaches out to Federal, State, Tribal, regional, and local agencies to consult on environmental and resource issues and concerns. This effort includes consultation regarding conservation plans and maps, inventories of natural or historic resources, and potential environmental mitigation activities. Specific topics of interest include: land use management, wildlife, natural resources, environmental protection, conservation, historic preservation, and potential environmental mitigation activities. The primary goal of this consultation effort is to make transportation planning decisions and prepare planning products that are sensitive to environmental mitigation and resource conservation considerations.

4.2.3 Establishment of a Complete Transportation System for the Region

The RTP includes 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.

Facility/Service Performance Measures: Facility performance measures focus on the amount of travel on specific facilities, the usage of transportation services, the degree of congestion, and other indicators of the level of service as provided:

- Accident rate per million miles of passenger travel.
- Travel time between selected origins and destinations.
- Peak period delay by facility type and geographic location.
- Peak hour speed by facility type and geographic location.
- Number of major intersections at level of service “E” or worse.
- Miles of freeways with level of service “E” or worse during peak period.
- Average Daily Traffic on freeways/highways and arterials.
- Total transit ridership by route and transit mode.
- Cost effectiveness: trips served per dollar invested.

Mobility Measures: Mobility measures focus on the availability of transportation facilities and services, as well as the range of service options as provided:

- Percentage of persons within 30 minutes travel time of employment by mode.
- Jobs and housing within one-quarter mile distance of transit service.
- Percentage of workforce that can reach their workplace by transit within one hour with no more than one transfer.
- Per Capita Vehicle Miles of Travel (VMT) by facility type and mode.

- Households within one-quarter mile of transit.
- Transit share of travel (by transit sub-mode).
- Households within five miles of park-and-ride lots or major transit centers.

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) are revised periodically to reflect factors such as changes in costs, project schedules, and the outlook for future revenues.

4.3.1 System-Level Activities

Regional Transportation Plan Update: An update of the MAG Regional Transportation Plan was not conducted during FY 2012. A decision was made to target adoption of the next update of the RTP for early FY 2014, due to overlapping air quality planning activities that were scheduled for late FY 2012 and early FY 2013. To prepare for the future update of the RTP, a number of technical planning activities were pursued during FY 2012. In addition, the RTP was amended, as appropriate, on a number of occasions during FY 2012 in connection with amendments to the FY 2011-2015 TIP.

4.3.2 Corridor-Level, Sub-Area and Modal Activities

FY 2012 Arterial Life Cycle Program: On September 21, 2011, the MAG Regional Council approved amendment of the Regional Transportation Plan - 2010 Update, as appropriate, to include the updated FY 2012 Arterial Life Cycle Program, which was approved a part of the same agenda item.

High Occupancy Vehicle (HOV) Lane Ramps at Loop 101 and Maryland Avenue: On January 25, 2012, the MAG Regional Council approved amendment of the Regional Transportation Plan - 2010 Update to include a new project to add HOV direct connection ramps at the Loop 101 and Maryland Avenue grade separation. Funding for the project was provided by a combination of uncommitted funds in the MAG portion of the Statewide Transportation Acceleration Needs Account and the MAG Regional Freeway/Highway Program. The project is programmed as a design/build project in FY 2013.

Regional Freeway/Highway Life Cycle Program Rebalancing: On May 23, 2012, the MAG Regional Council approved a rebalancing scenario for the Regional Freeway/Highway Life Cycle Program, to be incorporated in the next update of the MAG Regional Transportation Plan. The rebalancing scenario addressed an overall life cycle program deficit of approximately $390 million and eliminated any annual year end negative cash balances.

Transit Life Cycle Program Update: On May 17, 2012, the Valley Metro RPTA and METRO Board of Directors approved the 2012 Transit Life Cycle Program (TLCP) update. An updated financial model for bus service shows a final positive balance in FY 2026. The high capacity / light rail transit (HCT/LRT) component of the TLCP has a fund balance of $39 million in FY 2026.

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/High Capacity Transit Program; subsidize certain transit operating costs; and, in the form of transit farebox monies, contribute significant funding for transit operations.

A block of funding from State sources, the Statewide Transportation Acceleration Needs (STAN) Account, was available for a time but the remaining funds were swept in January 2009 by the Legislature to balance the FY 2009 State Budget. Resources from another, non-recurring source were made available in early 2009 in the form of infrastructure funding from the American Recovery and Reinvestment Act (ARRA).

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 2012, but may not have been specifically factored, in every case, to a 2012 base year. In addition, both actual and forecasted revenues have been updated from previous reports.

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 have totaled $2.2 billion through FY 2012. Beginning in FY 2008, annual receipts steadily declined, with the year-over-year decreases for the three years from the end of FY 2007 through the end of FY 2010 equaling, respectively, 3.1, 13.7 and 8.9 percent. The receipts in FY 2011 were 3.4 percent greater than those in FY 2010, and those in FY 2012 were 4.8 percent greater than those in FY 2011, representing two years of increased in collections since FY 2007. However, the collections for FY 2012 remain 17.3 percent lower than those in FY 2007. In addition, the current estimate of total 20-year revenues from the half-cent sales tax is over 42 percent lower than the estimate prepared before the effects of the 2007-2009 recession.

Future half-cent revenues for the period FY 2013 through FY 2026 are forecasted to total $6.5 billion. This amount is approximately $232 million, or 3.5 percent, lower than the forecast for the same period presented in the 2011Annual Report. Of the $6.5 billion total included in the current forecast, $3.6 billion will be allocated to freeway/highway projects; $682 million to arterial street improvements; and $2.2 billion to transit projects and programs. The actual receipts for FY 2012 ($323.2 million) were somewhat greater than forecasted in FY 2011 ($310.4 million). The Proposition 400 half-cent revenue forecasts will be updated again in the fall of 2012.

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
2009	184.0	34.4	109.0	327.4
2010	167.7	31.3	99.4	298.4
2011	173.3	32.4	102.7	308.4
2012 (3)	181.6	33.9	107.6	323.2
Subtotal	**1,225.9**	**229.0**	**726.4**	**2,181.4**
Forecasted				
2013	193.4	36.1	114.6	344.2
2014	205.0	38.3	121.5	364.8
2015	216.6	40.5	128.3	385.4
2016	228.1	42.6	135.2	405.9
2017	239.7	44.8	142.0	426.5
2018	251.3	47.0	148.9	447.2
2019	264.3	49.4	156.6	470.2
2020	275.3	51.4	163.1	489.9
2021	287.5	53.7	170.4	511.6
2022	300.4	56.1	178.0	534.6
2023	313.0	58.5	185.5	557.0
2024	326.0	60.9	193.1	580.0
2025	341.2	63.7	202.2	607.1
2026 (4)	207.8	38.8	123.1	369.8
Subtotal	**3,649.7**	**681.9**	**2,162.6**	**6,494.2**
Total				
Totals	**4,875.7**	**910.9**	**2,889.0**	**8,675.6**

(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) Estimated subject to change.

(4) 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. 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, maintenance and debt service on outstanding bonds. This includes funds for the Motor Vehicle Division, department administration, highway maintenance and additional funding for DPS.

ADOT also receives Federal transportation funds which are allocated to Arizona through various Federal programs and allocation formulas. The remaining HURF funds are combined with the 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 2012 totaled $1.8 billion, and forecasted revenues for the period FY

2013 through FY 2026 total $4.6 billion. This forecast is approximately 1.0 percent higher than the 2011 Annual Report forecast.

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	151.7	228.6
2008	76.9	248.0	324.9
2009	60.5	156.3	216.8
2010	59.1	122.3	181.4
2011	59.5	230.9	290.4
2012	45.1	279.2	324.3
Subtotal	**450.8**	**1,299.3**	**1,750.1**
Forecasted			
2013	46.6	268.6	315.2
2014	48.5	162.8	211.3
2015	58.3	159.9	218.2
2016	63.2	281.5	344.7
2017	66.0	210.0	276.0
2018	82.8	215.1	297.9
2019	85.4	225.4	310.8
2020	88.4	236.2	324.6
2021	91.2	247.3	338.5
2022	94.1	261.9	356.0
2023	97.1	270.9	368.0
2024	99.9	283.5	383.4
2025	102.9	296.5	399.4
2026	106.0	310.1	416.1
Subtotal	**1,130.4**	**3,429.7**	**4,560.1**
Total			
Totals	**1,581.2**	**4,729.0**	**6,310.2**

The MAG area receives annual funding through the Arizona Department of Transportation (ADOT) in the form of 15 Percent Funds, which are allocated from the State Highway Fund to the MAG area. These funds are spent exclusively for improvements on limited access facilities on the State Highway System in the MAG area through the ADOT Five-Year Construction Program.

In addition, 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 $889 million through FY 2012. The forecasted revenues for the period FY 2013 through FY 2026 total $3.7 billion. This forecast is essentially unchanged from that in the 2011 Annual Report for the same period.

Federal funding for transportation has generally been reauthorized every six years. The latest reauthorization, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA/LU), was signed into law in August 2005 and expired in September 2009. Congress maintained Federal transportation funding through June 30, 2012 by means of nine continuing resolutions and extensions of SAFETEA/LU.

On July 6, 2012, President Obama signed legislation known as the 'Moving Ahead for Progress in the 21st Century Act', or 'MAP-21′. This two-year transportation reauthorization bill provides federal funding of transportation programs through September 2014. Annual funding provided by MAP-21 is comparable to that in SAFETEA-LU. The revenues listed in Table 5-3 correspond to the programs as structured in SAFETEA-LU. Federal funds forecasts will be updated in subsequent Annual Reports to correspond to MAP-21 programs, as specific program funding levels become available.

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. It is anticipated that approximately $714 million will be utilized from this funding source for transit development during FY 2013 through FY 2026. This forecast is about two percent lower than that presented in the 2011 Annual Report for the same period.

TABLE 5-3
MAG FEDERAL TRANSPORTATION FUNDS *: FY 2006-2026
(Year of Expenditure Dollars in Millions)

Fiscal Year	Transit				MAG STP			MAG CMAQ						Grand Total
	5307	5309	STP-AZ	Total	Fwy/Hwy	Arterial	Total	Fwy/Hwy	Arterial	Transit	Bk/Ped	AQ	Total	
Actual **														
2006	10.0	0.0	2.3	12.4	38.1	0.0	38.1	0.0	0.0	0.0	0.0	0.0	0.0	50.4
2007	15.7	7.8	2.0	25.5	42.3	0.0	42.3	0.0	0.0	0.0	0.0	0.0	0.0	67.8
2008	71.2	17.6	0.3	89.1	38.0	0.2	38.2	5.9	11.7	15.0	12.4	9.6	54.7	181.9
2009	26.8	8.3	2.9	38.1	34.4	17.5	51.9	0.0	16.3	17.0	14.7	6.6	54.6	144.6
2010	9.9	2.1	0.0	12.0	39.3	19.6	58.9	29.1	9.3	19.0	5.2	4.0	66.5	137.4
2011	32.7	1.2	2.4	36.3	33.9	39.4	73.2	4.3	3.5	16.7	4.8	12.5	41.8	151.3
2012	28.7	9.6	3.3	41.6	34.1	24.5	58.6	10.6	7.4	19.9	9.4	8.1	55.3	155.5
Subtotal	**195.1**	**46.6**	**13.3**	**255.0**	**260.0**	**101.2**	**361.2**	**49.9**	**48.2**	**87.6**	**46.5**	**40.7**	**272.9**	**889.1**
Forecasted ***														
2013	48.3	28.4	1.4	78.1	34.1	10.5	44.6	10.3	7.2	19.3	9.2	7.9	53.9	176.6
2014	66.8	47.5	2.3	116.6	34.1	21.2	55.3	10.4	7.3	19.6	9.3	8.0	54.6	226.5
2015	49.1	45.1	1.5	95.8	34.1	23.3	57.4	11.0	7.8	20.8	9.8	8.4	57.8	211.0
2016	23.8	34.0	2.4	60.2	12.7	46.4	59.1	11.4	8.0	21.5	10.2	8.7	59.9	179.1
2017	36.8	11.3	2.5	50.5		61.0	61.0	11.8	8.3	22.3	10.5	9.1	62.0	173.5
2018	23.3	20.0	2.6	45.8		63.1	63.1	12.2	8.6	23.0	10.9	9.4	64.1	173.0
2019	83.9	106.8	2.6	193.3		65.2	65.2	12.7	8.9	23.9	11.3	9.7	66.5	324.9
2020	86.1	108.5	2.7	197.3		67.4	67.4	13.1	9.2	24.7	11.7	10.0	68.7	333.4
2021	78.2	112.4	2.8	193.3		69.7	69.7	13.6	9.6	25.6	12.1	10.4	71.4	334.4
2022	24.5	114.7	2.8	142.0		72.1	72.1	14.1	9.9	26.5	12.5	10.8	73.7	287.8
2023	55.4	116.0	2.9	174.3		74.6	74.6	14.6	10.2	27.4	13.0	11.1	76.3	325.1
2024	58.7	100.0	3.0	161.7		77.2	77.2	15.1	10.6	28.3	13.4	11.5	78.8	317.7
2025	61.1	104.0	3.1	168.2		79.8	79.8	15.6	10.9	29.3	13.9	11.9	81.6	329.6
2026	18.0	113.5	3.2	134.7		82.6	82.6	16.2	11.3	30.4	14.4	12.3	84.6	301.9
Subtotal	**713.8**	**1,062.2**	**35.8**	**1,811.8**	**115.0**	**814.1**	**929.1**	**182.2**	**127.8**	**342.4**	**162.1**	**139.3**	**953.8**	**3,694.7**
Total														
Totals	**908.9**	**1,108.8**	**49.1**	**2,066.7**	**375.0**	**915.2**	**1,290.3**	**232.1**	**176.1**	**430.0**	**208.6**	**180.0**	**1,226.7**	**4,583.7**

* Values represent use of federal funds in life cycle programs.

** Actual expenditures represent obligation authority utilized during fiscal year.

*** Forecast STP and CMAQ revenues are based on a 96.5% Obligation Authority.

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. It is estimated that $1.1 billion in 5309 funds for bus and rail transit projects will be utilized in the MAG Region, during FY 2012 through FY 2026. This forecast is 14 percent higher than that presented in the 2011 Annual Report for the same period.

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 2013 through FY 2026, it is estimated that $929 million 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. This funding level is about four percent lower than the 2011 Annual Report estimate.

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 area. MAG CMAQ funds are projected to generate $954 million from FY 2013 through FY 2026. This funding level is seven percent higher than the 2011 Annual Report estimate.

5.4 STATEWIDE TRANSPORTATION ACCELERATION NEEDS (STAN) ACCOUNT

During the spring 2006 legislative session, the Arizona Legislature provided $307 million to accelerate highway projects statewide, of which $184 million was allocated to the MAG region. On December 13, 2006, the MAG Regional Council approved a set of projects to be funded with these monies. In January 2009, any remaining STAN monies were used by the Legislature to help balance the FY 2009 State Budget. As a result, only $121 million in STAN funding was applied to projects in the MAG area. Subsequently, in the spring of 2009, certain

projects that would have been funded by STAN monies on I-10 and I-17 were re-accelerated, as a result of funding from the American Recovery and Reinvestment Act.

5.5 AMERICAN RECOVERY AND REINVESTMENT ACT

The American Recovery and Reinvestment Act (ARRA) was signed by President Obama on February 17, 2009 and contains a national highway infrastructure component that provides approximately $350 million to the Arizona Department of Transportation (ADOT) for highway infrastructure improvements throughout Arizona. The ADOT Board determined that approximately $129 million of this amount would be spent on projects on the State Highway System in the MAG area. On February 25, 2009, the MAG Regional Council approved the projects to utilize these funds.

The ARRA also sub-allocated $105 million in funding to local jurisdictions in the MAG area for road and street improvements. On March 25, 2009, the MAG Regional Council approved allocation of these funds to MAG jurisdictions on the basis of a minimum allocation of $500,000, plus an allocation proportional to population. A total of $12.5 million from this allocation was utilized to provide funding for projects in the Arterial Life Cycle Program (ALCP), freeing up monies that can be applied later in the ALCP for other projects

In addition, the ARRA directed approximately $66 million in funding to the MAG area for transit projects. On March 25, 2009, the MAG Regional Council approved allocation of these funds to transit projects such as park-and-ride lots, maintenance facilities, transit centers, and bus stop improvements. Approximately $39.9 million of this funding was utilized in the Transit Life Cycle Program.

5.6 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 2012 totaled $5.1 billion. Future regional revenues are projected to total $14.7 billion for the period FY 2013 through FY 2026. Total revenues for the period FY 2006 through FY 2026 amount to $19.8 billion, which is slightly lower than the estimate in the 2011 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 - 2012 Actual	FY 2013 - 2026 Forecast	Total
Proposition 400: Half Cent Sales Tax Extension	2,181.4	6,494.2	8,675.6
ADOT Funds	1,750.1	4,560.1	6,310.2
American Recovery and Reinvestment Act (Freeways) *	129.0	0.0	129.0
American Recovery and Reinvestment Act (Arterials) **	12.5	0.0	12.5
American Recovery and Reinvestment Act (Transit) ***	39.9	0.0	39.9
Statewide Transportation Acceleration Needs (STAN)	121.0	0.0	121.0
Federal Transit (5307 Funds)	195.1	713.8	908.9
Federal Transit (5309 Funds)	46.6	1,062.2	1,108.8
Federal Highway (MAG STP)	361.2	929.1	1,290.3
Federal Highway (MAG CMAQ)	272.9	953.8	1,226.7
Total	**5,109.7**	**14,713.2**	**19,822.9**

* Represents amount applied to FLCP projects only.

** Represents amount applied to ALCP projects only.

*** Represents amount applied to TLCP projects only.

CHAPTER SIX

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM

The Freeway/Highway Life Cycle Program (FLCP) 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.

During late calendar year 2011 and early calendar year 2012, cash flow modeling based on new revenue forecasts revealed an overall Life Cycle program deficit and year-end negative cash balances that required significant program adjustments. On May 23, 2012, the MAG Regional Council approved a rebalancing scenario for the Regional Freeway/Highway Life Cycle Program that addressed the program deficits. The 2012 Annual Report reflects costs, revenues, and schedule adjustments included in that rebalancing scenario.

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. In the following discussion of project status, the following abbreviations are used:

- DCR: Design Concept Report
- EIS: Environmental Impact Statement
- EA: Environmental Assessment
- CE: Categorical Exclusion

6.1.1 New Corridors

<u>SR 153 (Sky Harbor Expressway</u>):

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 therequirements of Arizona Revised Statute (A.R.S.) 28-6353 and met applicable Federal air quality conformity requirements. In October 2007, the State

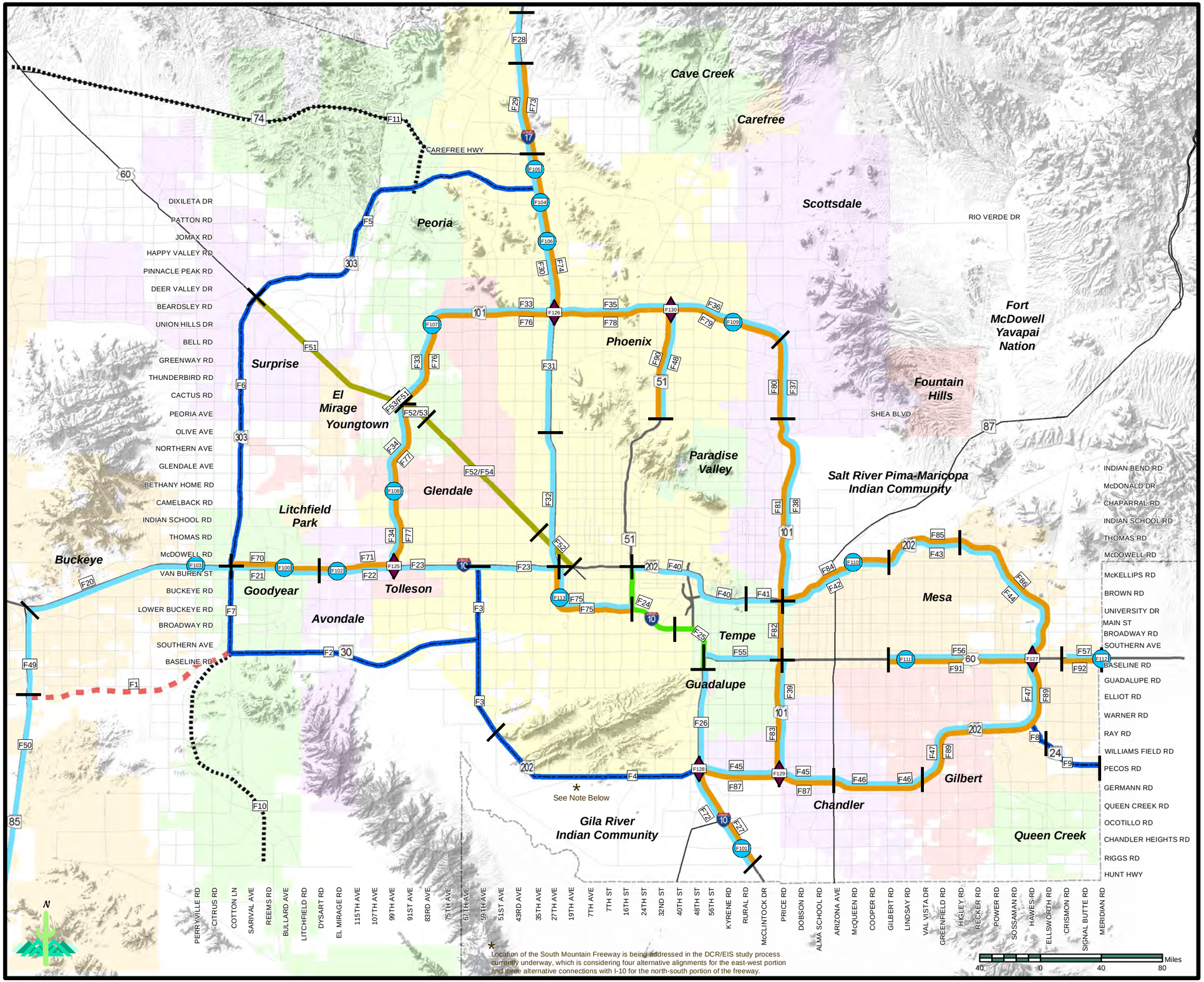

Figure 6-1

MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2012 Annual Report on Proposition 400

Freeways/Highways

- New/Improved 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
- 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.

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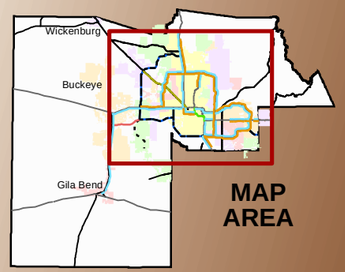

While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

Transportation Board approved deleting SR 153 from the Arizona State Highway System and transferring the facility to the City of Phoenix.

Loop 202 (South Mountain Freeway):

- Overview - The South Mountain Freeway is planned as a freeway loop facility south of the central area of the region, connecting the western terminus of the Santan Freeway in the East Valley with I-10 at 59th Ave. in the West Valley. It is planned for three general purpose lanes and one HOV lane in each direction.

  DCR/EIS - A DCR/EIS is currently progressing for the South Mountain Freeway corridor. Completion and approval of a final EIS and Design Concept Report, 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 2014. An Administrative Draft EIS is under internal review. ADOT and MAG worked closely with the Gila River Indian Community (GRIC) regarding the possibility of locating a portion of the corridor on the GRIC. The concept was presented to the Community in the fall of 2010 and a community-wide referendum was held on February 7, 2012. Based on the result of the referendum, there is no longer consideration of placing the freeway within the GRIC boundary.

- 51st Ave. to I-10 - The portion of the roadway alignment that was on 55th Ave. has been shifted to fall on 59th Ave. Within the vicinity of Dobbins Road, ADOT, MAG, and FHWA are considering localized alignment shifts to avoid several historic properties in the area.

- Cost Estimate - In the 2009 Annual Report, the estimated total cost for the South Mountain Freeway was increased to $2.5 billion from the $1.1 billion estimate shown in the 2008 Annual Report. In the 2010 Annual report, the estimate was lowered to $1.9 billion, as a result of value engineering and decreasing construction and right-of-way costs. An estimate of $1.9 billion was retained in the 2011 and 2012 Annual Reports.

Loop 303 (Estrella Freeway):

- Overview - Loop 303 is planned as a six-lane freeway facility extending 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 to SR 30. Right-of-way preservation south to Riggs Rd. is also part of the plan.

- I-17 to Happy Valley Rd. - Construction has been completed on an interim four-lane divided roadway, which was opened to traffic in May of 2011. Upgrading this facility to a six-lane freeway has been shifted beyond FY 2026 but remains in the MAG Regional Transportation Plan.

- Happy Valley Rd. to Grand Ave. - An interim four-lane divided roadway was completed between Grand Ave. and Happy Valley Rd. by Maricopa County in 2004, and full freeway right-of-way was also acquired along most of this segment. A DCR/CE was completed in April 2010, covering construction of a full freeway facility in the corridor. Preliminary design is underway and is expected to be complete in early 2012. Upgrading this facility to a six-lane freeway has been shifted beyond FY 2026 but remains in the MAG Regional Transportation Plan. A separate project to construct a grade-separated interchange at El Mirage Road will be under design in FY 2013, and funding for construction has been identified in FY 2023.

- Grand Ave. to I-10 - An interim two-lane roadway was constructed in the 1990's by ADOT. A DCR/EA on the segment for construction of a freeway facility has been completed, and a "Finding of No Significant Impact" issued.

  Construction of crossroad improvements in anticipation of future T.I.s at Bell Road, Waddell Road, and Cactus Road was completed in May 2011. Construction on the system T.I. at I-10 started in 2011, along with the segment from Peoria Ave. to Mountain View Blvd. Segments from Thomas Rd. to Camelback Rd. and Glendale Ave. to Peoria Ave. have been advertised and awarded and construction began in summer 2012. The final segment, from Camelback Rd. to Glendale Ave., is scheduled to be under construction by the end of calendar 2012.

- Grand Ave. Interchange – Preliminary design of an interim interchange at Loop 303 and Grand Ave. was completed in spring 2011. Final design, using the construction manager at risk (CMAR) method of project delivery, is underway with the selection of the CMAR expected in fall 2012. Construction of the interim TI is programmed in FY14.

- I-10 to SR 30 - A DCR/EA is scheduled for completion early in 2013, covering construction of a full freeway facility in the corridor. Construction of this segment was previously shifted beyond FY 2026 but has been brought forward, with funding for some construction programmed as early as FY2016.

- SR 30 to Riggs Rd. - A location DCR and environmental overview are underway for a freeway concept. Right-of-way protection for this segment was shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

- Cost Estimate - In the 2009 Annual Report, the estimated total cost for Loop 303 was increased to $2.8 billion from the $1.7 billion estimate shown in the 2008 Annual Report. In the 2010 Annual Report, the estimate was lowered to $2.4 billion, as a result of value engineering and decreasing construction and right-of-way costs. An estimate of $2.3 billion was indicated in the 2011

Annual Report. The current (2012) cost estimate for all programmed improvements in the corridor is $2.2 billion.

SR 30 (I-10 Reliever):

- Overview - The I-10 Reliever (SR 30) is planned as an east-west facility south of I-10 in the vicinity of Southern Ave. connecting the South Mountain Freeway (Loop 202) and SR 85. The route is identified as a six-lane freeway between Loop 202 and Loop 303; and as an arterial roadway, with right-of-way preservation for a future freeway facility, between Loop 303 and SR 85.

  Construction of SR 30 has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

- DCR/EA – A DCR and EA are underway on the segment between Loop 202 and Loop 303, and are targeted for completion in 2013. A location study is underway for the segment between Loop 303 and SR 85.

- Cost Estimate - In the 2009 Annual Report, the estimated total cost for SR 30 was increased to $1.9 billion from the $820 million estimate shown in the 2008 Annual Report. In the 2010 Annual report, the estimate was lowered to $1.6 billion, as a result of value engineering and decreasing construction and right-of-way costs. An estimate of $1.6 billion was retained in the 2011 and 2012 Annual Reports.

SR 24 (Gateway Freeway):

- Overview - The Gateway Freeway (formerly Williams Gateway) is planned as a six-lane freeway extending from Loop 202 south to the Phoenix-Mesa Gateway Airport, and east to the Pinal County line at Meridian Rd.

- DCR/EA - A DCR and EA between Loop 202 and Ironwood Rd. (logical terminus one mile east of Meridian Rd.) have been completed and a Finding of “No Significant Impact” has been received.

- Loop 202 (Santan) to Ellsworth Rd. - Final design for an interim roadway was completed, the project has been awarded, and construction is underway. The City of Mesa advanced the construction funds for repayment in FY 2016. Final construction of this segment has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

- Ellsworth Rd. to Meridian Rd. - Final construction of this segment has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

- Cost Estimate - In the 2009 Annual Report, the estimated total cost for SR 24 was increased to $546 million from the $355 million estimate shown in the 2008 Annual Report. In the 2010 Annual report, the estimate was lowered to $484 million, as a result of value engineering and decreasing construction and right-of-way costs. An estimate of $457 million was indicated in the 2011 Annual Report and has been lowered to $391 million in the 2012 Annual Report.

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

- SR 74 - Funding for right-of-way protection on SR 74 has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

- Loop 303 (MC 85 to Riggs Rd.) - Funding for right-of-way protection has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

6.1.2 Widen Existing Facilities: General Purpose Lanes and HOV Lanes

I-10:

- Overview - Additional general purpose lanes have been identified for construction 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.

- Verrado Way to Sarival Ave. - Construction of one general purpose lane in each direction between Sarival Ave. and Verrado Way was advertised for bids in March 2009 using ARRA funds. Construction was completed in summer 2011. This segment now has three general purpose lanes in each direction.

- Sarival Ave. to Loop 101 (Agua Fria) - Construction work to add one HOV lane and one general purpose lane in each direction in the median of I-10 was completed in June 2010. The addition of one general purpose lane in each direction along the outside of the facility between Sarival Ave. and Dysart Rd. was completed in summer 2011. This segment now has four general purpose lanes and one HOV lane in each direction.

- Loop 101 (Agua Fria) to I-17 - A DCR/EA is underway on this segment addressing future needs for increased capacity. The approach taken will be contingent on the design and timing of the South Mountain Freeway, as well as the recommendations of the MAG Central Phoenix Framework Study, and

will also consider the possibility of a future light rail extension along I-10 in this segment. Construction funding is programmed in FY 2019.

- SR 51 to 32nd St. - Construction of local/express lanes along this segment has been shifted beyond FY 2026, and has been designated as an illustrative project falling beyond the FY 2031 planning horizon of the RTP.

- 32nd St. to Loop 202 (Santan) - A DCR/EIS for capacity improvements along this segment, including local/express lanes from 32nd St. to US 60, had been underway through FY 2012. In early FY 2013, the DCR/EIS was suspended with the intent of considering other options for traffic flow enhancements. Funding for improvements along this segment has been programmed for FY 2019-2026. The nature of these improvements will be determined through additional studies.

- Loop 202 (Santan) to Riggs Rd. - A project to construct one general purpose lane and one HOV lane in each direction between Loop 202 (Santan Freeway) and Riggs Rd. is programmed for FY 2021. Upon completion, this segment will have a total of three general purpose lanes and one HOV lane in each direction.

I-17:

- Overview - Construction of additional general purpose lanes has been identified for I-17 between I-10 (Maricopa TI) 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 the entire stretch of I-17 from I-10 (Maricopa TI) to Anthem Way.

- New River Rd. to Anthem Way - Construction of one general purpose lane in each direction on this segment has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP. Upon completion, this segment will have a total of three general purpose lanes lane in each direction. In 2006, ADOT completed a DCR to construct additional lanes from Loop 101 to Black Canyon City, as well as an EA for additional lanes between Loop 101 and New River Road. The New River Road to Anthem Way project, and the following two projects, were initiated as a result of that study.

- Anthem Way to Carefree Highway - The addition of one general purpose lane in each direction was completed in May 2010 for a total of three general purpose lanes in each direction. A project to convert the pavement to concrete and add one HOV lane in each direction has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

- Carefree Highway to Loop 101 (Agua Fria) - Construction work was completed in May 2010 to add one general purpose lane and one HOV lane

in each direction. With completion of this project, this segment has three general purpose lanes and one HOV lane in each direction. The interval between Pinnacle Peak Rd. and Loop 101 includes additional lanes for exiting/merging traffic to/from Loop 101.

- Loop 101 to I-10/Maricopa Fwy.- A DCR/EIS addressing capacity improvements along I-17 between Loop 101 and I-10/Maricopa Fwy. had been underway through FY 2012. In early FY 2013, the DCR/EIS was suspended with the intent of considering other options for traffic flow enhancements. Funding for improvements along this segment has been programmed for FY 2022-2025. The nature of these improvements will be determined through additional studies.

SR 51 (Piestewa Freeway):

- Overview - Construction of additional general purpose lanes and HOV lanes has been identified for the stretch of SR 51 between Shea Boulevard and Loop 101.

- Loop 101 to Shea Blvd. - The project to construct the HOV lanes, including ramps at the system interchange between SR 51 and Loop 101, has been completed and was opened to traffic in January 2009, resulting in a cross section of three general purpose lanes and one HOV lane in each direction. The project to construct one additional general purpose lane in each direction has been shifted beyond FY 2026 but remains within the FY 2031 planning horizon of the RTP.

US 60 (Grand Ave.):

- Overview - A series of improvement projects have been identified for construction along various segments of Grand Ave. between Loop 303 and McDowell Rd., including the addition of general purpose lanes, grade separations and other improvements. With completion of the projects between Loop 303 and 83rd Ave., described below, Grand Avenue is now six lanes from Van Buren Street in Phoenix to Loop 303 in Surprise.

- Loop 303 to 99th Ave. - A project to widen Grand Ave. to six lanes between Loop 303 and 99th Ave. was completed in June 2011. A feasibility study on potential grade separation projects on Grand Ave. between Loop 303 and Loop 101 was completed in January 2009 and funding for construction is programmed in FY 2016.

- 99th Ave. to 83rd Ave. - A project to widen Grand Ave. to six lanes between 99th Ave. and 83rd Ave. was completed in June 2011.

- Loop 101 to McDowell Rd. - A DCR/CE for roadway improvement projects between Loop 101 and McDowell Rd. was finalized in October 2008, and design work has been completed. The project was split for construction, and the Peoria segment, from Loop 101 to 71st Avenue, is under construction and expected to be completed by the end of 2012. The Glendale/Phoenix segment, from 71st Avenue to Van Buren Street, advertised for construction in June 2012. Construction of this segment should be underway by the end of 2012 with completion expected around mid-2014. Funding for additional roadway improvements along this segment has been programmed in FY 2014. Potential grade separation projects identified for this segment have been shifted beyond FY 2026 but remain within the FY 2031 planning horizon of the RTP

US 60 (Superstition Freeway):

- Overview - Widening projects have been identified for construction 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 Meridian Rd.

- I-10 to Loop 101 - Construction of one additional general purpose lane in each direction was completed in May 2010, resulting in a cross-section of four general purpose lanes and one HOV lane in each direction along this segment.

- Gilbert Rd. to Power Rd. - Construction work on the addition of both general purpose and HOV lanes from Gilbert Rd. to Power Rd. was completed and was opened in June 2007. As a result, the entire segment of the Superstition Freeway between Loop 101 and Loop 202 has five general purpose lanes and one HOV lane in each direction.

- Crismon Rd. to Meridian Rd. - A project to add one additional HOV lane and one additional GP has been programmed in FY 2020.

SR 74:

- Passing Lanes - Projects for the construction of passing lanes along mile-post segment 20-22, and mile-post segment 13-15, were completed in fall 2010 and summer 2011, respectively.

SR 85:

- Overview - Plans call for the widening of SR 85 to a four-lane, divided roadway between I-10 and I-8. With the completion of the projects noted

below, a four-lane divided roadway has been completed from 2 ½ miles north of Gila Bend to I-10.

- I-10 to Southern Ave. - Construction to provide four lanes between I-10 and Southern Ave. was completed in fall 2010.

- Southern Ave. to MC 85 - Construction of frontage roads between Southern Ave. and MC 85 was completed in May 2008.

- Mile-post 130 to Mile-post 137 - Construction of a four-lane divided roadway between Mile-post 130 and Mile-post 137 was completed in January 2010.

- SR 85/B-8/Maricopa Rd. Intersection - The project includes construction of a new, elevated intersection at State Route 85 (Pima St.) and Business Route 8 (B-8), a wider bridge over the Union Pacific Railroad, and realigning both State Route 85 (Pima St.) and Maricopa Road. Construction began in February 2011 and is expected to be complete in late 2012.

SR 87:

- Overview - Since identification of the original concepts for corridors in the RTP, projects were added on SR 87 to refine roadway cross-section and provide for turning movements at a high volume recreational location.

- Mile-post 211.8 to Mile-post 213.0 - A project for erosion control and shoulder improvements along this segment has been combined with the project between New Four Peaks Rd. to Dos S Ranch Rd. (see below)

- Forest Boundary to New Four Peaks - A project for improvements between Forest Boundary and New Four Peaks Rd., including an interchange at Bush Hwy., was completed in late 2008.

- New Four Peaks Rd. to Dos S Ranch Rd. – Reconstruction of the southbound lanes, construction of a climbing lane and shoulder widening between New Four Peaks Rd. and Dos S Ranch Rd. were completed in May 2011. This project included the improvements between MP 211.8 and MP 213.0 and was completed in summer 2011.

US 93 (Wickenburg Bypass):

- A bypass of downtown Wickenburg was completed September 2009.

Loop 101:

- Overview - Additional general purpose lanes and HOV lanes have been identified for construction along most of the length of Loop 101 (the Agua

Fria, Pima, and Price Freeways). Only additional HOV lanes are planned between the Red Mountain Freeway and Baseline Rd.

- Van Buren Rd. to I-10 (99th Ave.) - A project to provide improvements along 99th Ave. between I-10 and Van Buren Rd. at the southern terminus of Loop 101/Agua Fria was completed in spring 2011.

- I-10 to Tatum Blvd. - A project to construct one HOV lane in each direction from I-10 (Papago) to Tatum Blvd. was advanced into FY 2010. This project combined three HOV segments originally identified for construction between FY 2013 to FY 2015 into a single design/build project. The construction of this 30-mile segment, which includes a general-purpose lane in each direction at the I-17 TI, started early in 2011 and was completed in fall 2011. This completes the installation of HOV lanes on Loop 101 from the Papago Freeway in west Phoenix to the Santan Freeway in Chandler. Installation of freeway management system equipment on the Pima Freeway between I-17 and SR 51 was completed in January 2010.

- Tatum Blvd. to Princess Dr. - Construction of HOV lanes from Tatum Boulevard to Princess Drive on the Pima Freeway was completed in August 2009.

- Princess Dr. to Loop 202 (Red Mountain Freeway) - The construction of HOV lanes on the Pima Freeway between Princess Dr. and Via De Ventura was completed in June 2009. HOV lanes between Via De Ventura and Loop 202/Red Mountain were completed in November 2008. In addition, a DCR/CE for general purpose lanes on the Pima Freeway between Princess Dr. and Loop 202 was completed in summer 2010. The Categorical Exclusion was granted by FHWA on the project in May 2010. Preliminary design of the GP lanes between Shea Blvd. and Red Mountain Freeway was completed in Spring 2012; designer selection is underway and final design is expected to begin in late 2012. Funding for construction of this segment is programmed in FY 2014.

- Loop 202 (Red Mountain Freeway) to Loop 202 (Santan Freeway) - On the Price Freeway, HOV lanes were completed between Loop 202/Red Mountain and Loop 202/Santan in October 2009.

Loop 202:

- Overview - Construction of additional general purpose and HOV lanes has been identified along essentially the entire length of Loop 202 (Red Mountain and Santan Freeways). The segment of the Red Mountain Freeway from SR 51 to Loop 101 had HOV lanes prior to Proposition 400.

- SR 51 to Loop 101 -. Construction of a project to widen the Red Mountain Freeway between State Route 51 and Loop 101 was completed through a design/build contract in July 2010. This project added one general purpose lane eastbound between SR 51 and Loop 101, and one general purpose lane westbound between Loop 101 and Scottsdale Rd.

- Loop 101 to Gilbert Rd (on Red Mt. Fwy.) - Construction was completed on one HOV lane in each direction on the Red Mountain Freeway between 101 and Gilbert Rd. in July 2010. A DCR/CE to construct one additional general purpose lane in each direction in this segment is underway, with completion expected in mid-2012. Design is programmed in FY 2014, and construction is programmed in FY 2019.

- Gilbert Rd. to I-10 (on Santan Fwy.) - A project to construct one HOV lane in each direction from Gilbert Rd. to I-10 on the Santan Freeway was advanced into FY 2010. This project combined two HOV segments originally identified for construction between FY 2013 to FY 2015 into a single design/build project. The project was completed in fall 2011, and included construction of direct HOV ramp connections at the freeway-to-freeway interchanges with Loop 101 and I-10.

- Gilbert Rd. (at Red Mt. Fwy.) to Gilbert Rd. (at Santan Fwy.) - A DCR/CE to construct HOV lanes on the remainder of Loop 202 between Gilbert Rd. (at Red Mt. Fwy.) and Gilbert Rd. (at Santan Fwy.) was completed in August 2010. A Categorical Exclusion was granted by FHWA on the project in April 2010.

6.1.3 New Interchanges and New HOV Ramps on Existing Facilities

New Interchanges at Arterial Streets:

- Overview - The RTP identifies a total of thirteen new traffic interchanges (T.I.s) 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).

- Bullard Rd. - A new traffic interchange at I-10 was completed in FY 2008.

- Bethany Home Rd. - A new traffic interchange at Loop 101 (Agua Fria Freeway) was completed in FY 2008.

- Jomax Rd./Dixileta Dr. - New traffic interchanges at I-17 were opened to traffic in September 2008.

- SR 74/Carefree Hwy. - The reconstruction of the T.I. at I-17 was completed and opened to traffic in October 2008.

- 64th St. - The construction of a new traffic interchange at Loop 101(Pima Freeway) was completed in October 2008.

- Dove Valley Rd./Sonoran Blvd. - A new traffic interchange at I-17 was completed in January 2010.

- Beardsley/Union Hills T.I. - The widening of the Union Hills traffic interchange bridge at Loop 101 was accelerated from FY 2012 to FY 2009, allowing the project to be constructed concurrently with a project for a Beardsley Rd. connector with Loop 101. Construction was completed in May 2011.

- Perryville Rd. - A DCR/CE is underway for a new T.I. at I-10 and is expected to be complete in mid-2012. Funding for construction is programmed in FY 2013. This project is anticipated to be constructed as a design-build project.

- El Mirage Rd. (I-10) - Funding for construction of a new T.I. at I-10 is programmed in FY 2023.

- Chandler Hts. Rd. - Funding for construction of a new T.I. at I-10 is programmed in FY 2022.

- Mesa Dr. - Funding for construction of ramps only at Loop 202 (Red Mountain Freeway) was moved beyond FY 2026 and is included in FY 2030 in the RTP.

- Lindsay Rd. - Funding for construction of ramps only (half interchange) at US 60 was moved beyond FY 2026 to FY 2027 in the RTP.

- Meridian Rd. - Meridian Road Half-Diamond TI - A project to construct a half-diamond interchange to the west is under study, with completion expected in Fall 2012. Design and construction of Meridian TI is programmed in FY 2013.

- El Mirage Rd. (Loop 303) - A project to design a grade-separated interchange at El Mirage Road and Loop 303 has been added in FY13. Final design will be underway by the end of 2012 and funding for construction has been identified in FY 2023.

New HOV Ramps at Existing Freeway-to-Freeway Interchanges:

- Overview - The RTP identifies a total of six locations at freeway-to-freeway interchanges on existing freeways where HOV ramps (DHOV 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.

- I-10/Loop 101 (Agua Fria Freeway) - DHOV ramps at this location were moved beyond the horizon year of the RTP and included in the Plan as illustrative projects.

- I-17/Loop 101 (Pima Freeway) - DHOV ramps at this location were moved beyond the horizon year of the RTP and included in the Plan as illustrative projects.

- SR 51/Loop 101 (Pima Freeway) - Construction of DHOV ramps (northbound to eastbound and westbound to southbound) at this location was programmed in FY 2007 as part of the addition of HOV lanes on SR 51 and completed in January 2009.

- US 60/Loop 202 (Red Mountain Freeway) - Construction of DHOV ramps at this location was moved beyond FY 2026 and is included in FY 2029 in the RTP.

- Loop 101 (Price Freeway)/Loop 202 (Santan Freeway) - Construction of DHOV ramps at this location was combined with the HOV project on Loop 202 between Gilbert Rd. and I-10, which was completed in fall 2011.

- I-10/Loop 202 (Santan Freeway) - Construction of DHOV ramps at this location was combined with the HOV project on Loop 202 between Gilbert Rd. and I-10, which was completed in fall 2011.

Other Interchange Improvements:

- SR 143 - A total of $37 million has been programmed in FY 2009 and FY 2010 for the design and construction of improvements to the interchange between SR 143 and the Loop 202 access road to Sky Harbor Airport. Construction began in December 2010 and was completed in summer 2012.

- I-10 (West side airport access) - Construction of a project for improved access to the west entrance to Sky Harbor Airport from I-10 has been programmed for FY 2025.

- Other Interchanges - The Freeway Life Cycle Program also funds improvements at certain other existing traffic interchanges. Work has been completed at:

Higley Rd./US 60 (FY 2006)
43rd Ave./I-10 (FY 2008)
SR 347/I-10 (FY 2008)
Ray Rd./I-10 (FY 2008)
Cactus Rd./I-17 (FY 2008)

Thunderbird Rd./Loop 101 (FY 2010)	Avondale Blvd./I-10 (FY2011)
Chaparral Rd./Loop 101 (FY2011)	Olive Ave./Loop 101 (FY 2011)

6.1.4 Maintenance, Operations and Mitigation Programs

Freeway Management System:

- A block of funding for the freeway management system (FMS) has been identified for 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.

- Enhancement and operation of the freeway management system has proceeded since the start of the Proposition 400 program. It is estimated that future costs will total approximately $133 million for FY 2013-2026, including development of new projects and preservation and maintenance of existing equipment.

Maintenance:

- A block of regional funding for the freeway system in the MAG area has been dedicated to litter pick-up, landscaping maintenance and landscaping restoration. The remainder of maintenance functions are funded through ADOT state-level sources.

- The Proposition 400 program has allowed ADOT to provide a level of landscaping, litter pick up and sweeping maintenance on the freeway system that would not have been possible without this funding. Approximately $192 million has been programmed for FY 2013-2026 for activities related to this program.

Noise Mitigation:

- A block of funding has been identified for noise mitigation projects on the freeway system in the MAG area. This funding has been used for mitigation projects such as rubberized asphalt overlays and noise walls.

- Approximately $52 million of this funding has been expended for rubberized asphalt on freeway facilities, and $26 million has been allocated to noise wall projects. A list of noise wall projects was developed for use of these funds and approved by the Regional Council in 2008. The MAG Supplemental Noise Wall project was advertised for bids in January 2011 and construction was completed in mid-2012.

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.

- It is estimated that future costs for system-wide projects and programs will total approximately $350 million for FY 2013-2026.

6.1.6 Proposition 300 - Regional Freeway Program

- The Proposition 300/Regional Freeway Program was drawn to a close with the opening of the freeway segment between University Dr. and Power Rd. on the Red Mountain Freeway on July 21, 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 current Freeway/Highway Life Cycle Program, so that there are no conflicting demands on revenues.

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 Program Cost Changes

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."

A detailed accounting of project component cost changes during FY 2012 may be obtained by reviewing actions to amend the FY 2011 - 2015 MAG Transportation Improvement Program.

In order to present a more general view of cost trends, Table 6-1 was prepared to provide an overview of significant changes in total project cost estimates between the 2011 and 2012 Annual Reports. As indicated in this table, the major trend was for decreasing cost estimates, with a net reduction of approximately $497 million.

TABLE 6-1

SIGNIFICANT FREEWAY/HIGHWAY PROJECT COST AND SCHEDULE CHANGES *

(2012 and Year of Expenditure Dollars in Millions)

		FY Programmed for Final Construction		Estimated Total Costs		
Route	**Project**	**From**	**To**	**From**	**To**	**Change**
10	Loop 303 to Loop 101 (GP/HOV Lanes)			144.8	148.7	3.9
10	32nd Street to Loop 202/Santan (GP/HOV Lanes)	2015	2024			
10	Loop 202/Santan Freeway to Riggs Rd. (GP/HOV Lanes)	2015	2021			
10	Sky Harbor West Access (T.I. Improvements)	2015	2025			
10	Perryville Road (New T.I.)			21.1	25.1	4.0
17	Carefree Highway to Loop 101 (GP/ HOV Lanes)			299.1	302.0	2.9
17	Loop 101 to Arizona Canal (GP Lanes)	2015	2024	92.4	6.0	(86.4)
17	Arizona Canal to McDowell Road (GP Lanes)			598.6	385.0	(213.6)
17	Peoria Ave./Cactus Rd. (Drainage Improvements)	2015	2022			
24	Loop 202 to Ellsworth Road (Interim Frwy.)			240.1	174.1	(66.0)
60 G	Loop 101 to Van Buren Street (GP Lanes)			141.6	145.9	4.3
60 S	Crismon Rd. to Meridian Rd. (GP/HOV Lanes)	2017	2020			
85	I-10 to I-8 (GP Lanes)	2018	2010	180.1	146.8	(33.3)
101 AF	Maryland Ave. (HOV Ramps)			0.0	14.5	14.5
202 RM	Loop 101 to Gilbert Road (GP Lanes)	2015	2019	60.3	74.6	14.3
202 SM	I-10 (West) to 51st Avenue (New Frwy.)	2021	2019			
202 SM	51st Avenue to Loop 202/I-10 (New Frwy.)	2020	2018			
303	I-17 to US 60 (Grand Avenue) (Final Frwy.)	2021	2030			
303	US 60 (Grand Avenue) to I-10 (New Frwy.)			1,384.2	1,242.7	(141.5)
303	I-10 to I-10R/MC 85 (Interim Frwy.)	2028	2016/2027			
					TOTAL	(496.9)

* Implementation period for certain projects may extend beyond FY 2026. Estimated costs are through 2031.

It should be noted that Table 6-1 is not comprehensive in its coverage of program changes and is not designed to provide a financial accounting reconciliation between totals reported in past and the current Annual Report. In addition, all compensating cost increases and decreases, as well as project limit changes, may not be accounted for in their entirely. Also, in certain cases, cost reductions may result in project scope changes. The table is primarily intended to alert decision-makers and the public to significant cost trends and schedule changes affecting projects included in the Life Cycle Program.

6.2.2 Project Advancements

On January 25, 2012, the MAG Regional Council approved amendment of the Regional Transportation Plan - 2010 Update to include a new project to add HOV direct connection ramps at the Loop 101 and Maryland Avenue grade separation. Funding for the project was provided by a combination of uncommitted funds in the MAG portion of the Statewide Transportation Acceleration Needs Account and the MAG Regional Freeway/Highway Program. The project is programmed as a design/build project in FY 2013.

6.2.3 Freeway/Highway Program Rebalancing

Arizona Revised Statues (ARS) 28-6352 (A) requires a budget process that ensures the estimated cost of the freeways and other controlled access highways in the Regional Transportation Plan (RTP) does not exceed the total amount of revenues estimated to be available. In October 2009, the MAG Regional Council approved a tentative scenario to balance the Freeway/Highway Life Cycle Program. This scenario was subsequently incorporated into the Regional Transportation Plan - 2010 Update and the FY 2011-2015 MAG Transportation Improvement Program.

In April 2011, MAG Committees were briefed on the work efforts and accomplishments that were made in delivering the Regional Freeway and Highway Program, as well as the cost and revenue projections for the Program and the potential need for additional rebalancing. At that time, it was estimated that the Life Cycle Program was out of balance by approximately 2.3 percent through FY 2026, due to lower revenue forecasts. Because of Federal program and revenue forecasting uncertainties, it was determined that rebalancing of the Program should be addressed after new revenue forecasts became available at the end of calendar year 2011.

During late calendar year 2011 and early calendar year 2012, cash flow modeling based on the new revenue forecasts revealed an overall Life Cycle Program deficit and year-end negative cash balances that required significant program adjustments. This cash flow analysis was applied to the Freeway/Highway Life Cycle Program schedule, taking into account the latest project cost estimates

and revenue projections. Also, bond issues were projected consistent with revenue streams and coverage requirements.

The analysis indicated that there was an overall funding deficit of approximately $390 million for the Regional Freeway/Highway Program through FY 2026. Life cycle project expenditures needed to be reduced by at least this amount to achieve a balanced program. In addition to the overall deficit, the cash flow analysis revealed negative year-end cash balances beginning in FY 2014 and continuing through FY 2026. The maximum negative year-end cash balance occurred in FY 2016 and exceeded $880 million. The negative year-end cash balances, occurring largely as a result of reduced bonding capacity, necessitated significant project schedule adjustments to achieve positive year-end balances.

MAG staff analyzed 12 potential program scenarios that addressed the cost-revenue imbalances. The most promising four scenarios were presented to the Management Committee, Transportation Policy Committee, and MAG Regional Council in April 2012 to obtain policy guidance. During May 2012, a staff recommendation was provided to these committees, and on May 23, 2012, the MAG Regional Council approved a rebalancing scenario for the Regional Freeway/Highway Life Cycle Program.

The rebalancing scenario addressed an overall life cycle program deficit of approximately $390 million and eliminated any annual year end negative cash balances. This was accomplished by repositioning the SR-202L/South Mountain Freeway and Interstate 10/Maricopa Freeway projects to improve the Program's cash flow; transferring funding from the SR-303L segment between US-60 and Interstate 17 to the SR-303L segment between Interstate 10 and MC-85, but retaining funding for a grade separated interchange at the existing El Mirage Rd intersection; removing $300 million from the Program's budget for the Interstate 17/Black Canyon Freeway corridor; and encouraging ADOT to focus upon cost-effective solutions that will provide opportunities to return projects to the Program in the future.

The revised Regional Freeway and Highway Program will be incorporated into the next update of the MAG Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP), both of which will be subject to an air quality conformity analysis.

It should be noted that preliminary technical analyses by MAG staff of the Loop 303 segments indicated that the interim four-lane freeway presently open between US-60/Grand Avenue and Interstate 17/Black Canyon Freeway accommodates the 2030 travel demand for this portion of the corridor. In addition, preliminary benefit-cost analysis results demonstrated a considerable benefit for extending Loop 303 south of Interstate 10 to MC-85. Modeling results indicated no significant degradation of levels of service on other Regional Freeway and Highway Program segments.

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

6.3.1 Program Expenditures and Estimated Future Costs

Table 6-2 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-8 in the Appendix. In the Life Cycle Program, future costs reflect currently available, real dollars estimates as of 2012, but may not have been specifically factored, in every case, to a 2012 base year.

As indicated in Table 6-2, expenditures through FY 2012 equal $2.7 billion (YOE $'s) and estimated future costs covering the period FY 2013-2026 amount to $6.6 billion (2012 $'s). The total FY 2006-2026 cost for the program is currently estimated to be $9.3 billion (YOE and 2012 $'s). As indicated in Appendix A and summarized in Table A-8, the estimated cost for the Life Cycle Program through FY 2031 totals $12.8 billion (YOE and 2012 $'s).

TABLE 6-2
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM
SUMMARY OF EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2012 and Year of Expenditure Dollars in Millions)

Category	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013 -2026 (2012 Dollars)	Total Cost: FY 2006-2026 (2012 and YOE Dollars)
	Design	Right-of-Way	Construction	Total		
New Corridors	82.1	195.9	337.1	615.1	3,273.0	3,888.1
Widen Existing Facilities: Add General Purpose Lanes	50.1	203.3	834.2	1,087.6	1,875.6	2,963.2
Widen Existing Facilities; Add HOV Lanes	13.4	0.0	377.1	390.5	534.3	924.8
New Interchanges on Existing Facilities: Freeway/Arterial	12.4	10.1	175.3	197.8	143.6	341.4
New HOV Ramps on Existing Facilities: Freeway/Freeway	0.0	0.0	0.0	0.0	0.0	0.0
Maintenance, Operations, Mitigation and Systemwide Programs	193.8	31.3	125.2	350.3	716.8	1,067.1
Other Projects	3.3	0.0	63.0	66.3	31.6	97.9
Total	**355.1**	**440.6**	**1,911.9**	**2,707.6**	**6,574.9**	**9,282.5**

6.3.2 Future Fiscal Status

Table 6-3 summarizes the future funding sources and uses for the Freeway/Highway Life Cycle Program between FY 2013 and FY 2026. Sources for the Life Cycle Program between FY 2013 through FY 2026 include the

TABLE 6-3
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM
FUTURE SOURCES AND USES OF FUNDS: FY 2013-2026
(2012 and Year of Expenditure Dollars in Millions)

SOURCES OF FUNDS	
Source	**Projected Future Funding: FY 2013-2026 (YOE Dollars)**
Proposition 400: One-Half Cent Sales Tax Extension	3,649.7
ADOT Funds	4,560.1
MAG CMAQ and STP (Federal Highway)	297.2
Other Income	108.9
Bond and Loan Proceeds	1,210.0
Plus Beginning Balance	1,409.1
Less Debt Service and Other Expenses	(3,213.2)
Less Inflation Allowance	(1,281.1)
Total (2012 $'s)	**6,740.7**
USES OF FUNDS	
Category	**Estimated Future Costs: FY 2013-2026 (2012 Dollars)**
New Corridors	3,273.0
Widen Existing Facilities: Add General Purpose Lanes	1,875.6
Widen Existing Facilities: Add HOV Lanes	534.3
New Interchanges on Existing Facilities: Freeway/Arterial	143.6
New HOV Ramps on Existing Facilities: Freeway/Freeway	0.0
Maintenance, Operations, Mitigation and Systemwide Programs	716.8
Other Projects	31.6
Total (2012 $'s)	**6,574.9**

Proposition 400 half-cent sales tax extension ($3.6 billion); ADOT funds, ($4.6 billion); Federal highway funds ($297 million); bond and loan proceeds ($1.2 billion); and other income ($109 million). Expenses totaling $3.2 billion are deducted from these sources, which includes an RTP implementation allowance

identified in legislation, estimated future debt service, and repayment of other financing. In addition, an allowance for inflation of $1.3 billion is deducted. Including a beginning balance of $1.4 billion, there is a net total of $6.7 billion (2012 $'s) for use on freeway and highway projects through FY 2026.

Table 6-3 also lists the estimated future uses identified in the Life Cycle Program for the period covering FY 2013 through FY 2026, which total $6.6 billion (2012 $'s). A comparison of these projects costs with the expected revenues indicates a positive balance of approximately $166 million through FY 2026.

6.4 FREEWAY/HIGHWAY PROGRAM OUTLOOK

During late calendar year 2011 and early calendar year 2012, cash flow modeling based on new revenue forecasts was conducted. The analysis indicated that there was an overall funding deficit of approximately $390 million for the Regional Freeway and Highway Program through FY 2026. In addition to the overall deficit, the cash flow analysis revealed negative year-end cash balances beginning in FY 2014 and continuing through FY 2026. The maximum negative year-end cash balance occurred in FY 2016 and exceeded $880 million. On May 23, 2012, the MAG Regional Council approved a rebalancing scenario that addressed the overall life cycle program deficit and eliminated any annual year end negative cash balances. This balanced scenario is reflected in the 2012 Annual Report.

As in the past, the Freeway/Highway Life Cycle Program will be subjected to continuing analysis, addressing future revenue forecasts and project cost trends. In the fall of 2012, revised long-range revenue forecasts will be prepared and updated cash flow assessments will be conducted. Based on this analysis, the need for additional program adjustments will be considered. In addition, ADOT will continue to focus upon cost-effective engineering solutions that may provide opportunities to return projects to the Program in the future.

CHAPTER SEVEN

ARTERIAL LIFE CYCLE PROGRAM

The Arterial Life Cycle Program (ALCP) extends through FY 2026 and is maintained by the Maricopa Association of Governments (MAG) to implement arterial street projects identified 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 do 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 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.

7.1 PROGRAM COMPONETS

The ALCP provides regional funding to widen existing streets, improve intersections, and construct new arterial segments. The program also provides resources for MAG planning studies and implementation of arterial Intelligent Transportation System (ITS) projects. 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. Funding swaps among an individual jurisdiction's projects and the allocation of "close-out" funds may alter the reimbursement sequence for certain projects. In some cases, advanced projects will not be reimbursed unless sales tax or other program revenues in the future are higher than currently projected.

Figure 7-1, depicts the location of the projects in the ALCP. The projects shown in Figure 7-1 are cross-referenced with the data in the Appendix B by the code associated with each project.

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 has proceeded, specific types of improvements have been defined and project concepts prepared. After the detailing of the various project elements, the original 94 projects have been segmented into a total of 204 individually defined projects.

Through FY 2012, 30 ALCP projects have been completed. These projects included arterial street widenings, capacity improvement projects, and intersection improvements at the following locations.

- Arizona Ave. at Chandler Blvd.: Intersection Improvements
- Arizona Ave. at Elliot Rd.: Intersection Improvements
- Arizona Ave. at Ray Rd.: Intersection Improvement
- Beardsley Rd.: Loop 101 to 83rd Ave/Lake Pleasant Parkway
- Chandler Blvd. at Dobson Rd.: Intersection Improvements
- Dobson Rd. at Guadalupe Rd.: Intersection Improvements
- El Mirage Rd.: Bell Rd to Deer Valley Dr.
- El Mirage Rd.: Deer Valley Drive to Loop 303
- Gilbert Rd. at University Dr.: Intersection Improvements
- Gilbert Rd.: SR202L/Germann Road to Queen Creek Rd.
- Greenfield Rd.: Baseline Rd. to Southern Ave.
- Guadalupe Rd./Cooper Rd.: Intersection Improvements
- Happy Valley Rd.: Lake Pleasant Pkwy to 67th Ave.
- Happy Valley: I-17 to 35th Ave.
- Hawes Rd.: Santan Freeway to Ray Rd.
- Lake Pleasant Pkwy.: Union Hills to Dynamite Rd.
- Loop 101 at Beardsley Rd/Union Hills Dr.
- Loop 101 Frontage Rd.: Hayden Rd to Scottsdale Rd.
- Pima Rd.: SR101L to Thompson Peak Pkwy.
- Pima Rd./Happy Valley Rd.: Intersection Improvements
- Power Rd at Pecos: Intersection Improvements
- Power Rd.: Baseline Rd. to East Maricopa Floodway
- Queen Creek Rd.: Arizona Ave. to McQueen Rd.
- Ray Rd.: Sossaman Rd. to Ellsworth Rd.
- Shea Blvd. at 90th/92nd/96th: Intersection Improvements
- Shea Blvd. at Mayo/134th St.: Intersection Improvements
- Shea Blvd. at Via Linda (Phase1): Intersection Improvements
- Shea Blvd.: Palisades Blvd. to Fountain Hills Blvd.
- Warner Rd. at Cooper Rd.: Intersection Improvements
- Val Vista Dr.: Warner Rd to Pecos Rd.

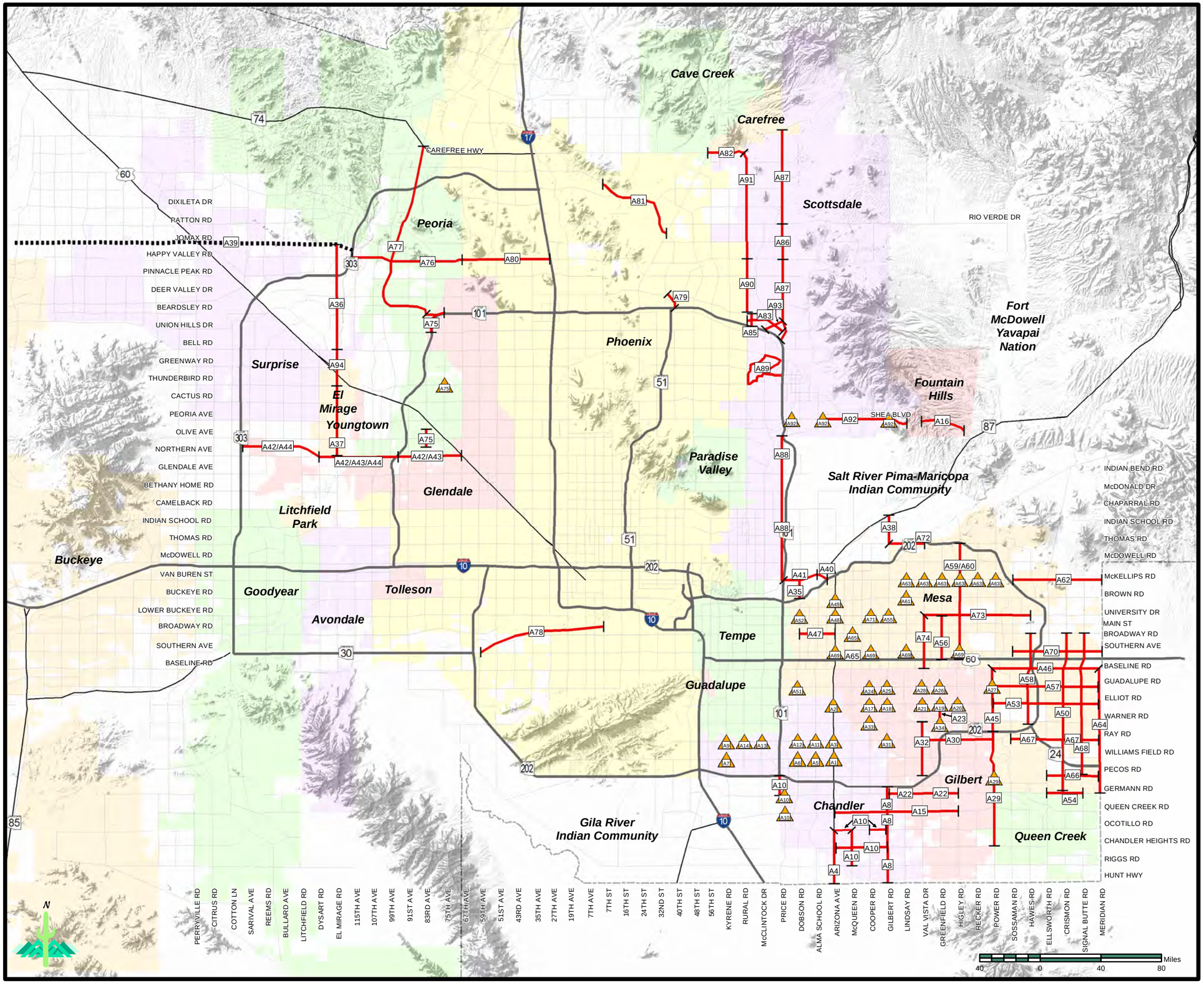

Figure 7-1

MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2012 Annual Report on Proposition 400

New/Improved Arterials

- New/Improved Arterials
- Improved Intersections
- Right of Way Preservation
- Freeways
- 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.

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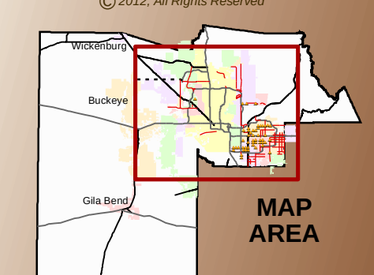

While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

7.1.2 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. 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. 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.

A total of nearly $31 million in reimbursements has been provided to ITS projects through FY 2012. It is estimated that an additional $34.8 million (2012 $'s) in reimbursements will be provided for ITS projects between FY 2013 and FY 2020.

7.2 ARTERIAL PROGRAM REIMBURSEMENTS AND FISCAL STATUS

7.2.1 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.

During FY 2012, a total of $103 million in ALCP project expenses were reimbursed to implementing agencies. This included reimbursements to eight individual agencies, as well as funding for projects in the MAG ITS program.

The ALCP Policies and Procedures detail the three required documents for each ALCP project - the Project Overview, the Project Agreement, and Project Reimbursement Request. The Project Overview describes the general design features of the project, the implementation schedule, estimated costs, and the relationships among participating agencies. The Project Agreement is developed jointly between the lead agency and MAG and determines the responsibilities of each party. 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, reimburses the lead agency.

Table 7-1 provides a summary of project reimbursements that have occurred through FY 2012. Appendix Tables B-1 and B-2 provide detailed information on reimbursements associated with individual ALCP projects. (Information on total project expenditures, which includes expenditures by the implementing agency, was not available when this report was prepared and will be provided in subsequent issues of the Annual Report.)

TABLE 7-1
ARTERIAL STREET LIFE CYCLE PROGRAM
SUMMARY OF PAST AND ESTIMATED FUTURE REIMBURSEMENTS: FY 2006-2026
(2012 and Year of Expenditure Dollars in Millions)

Category	Reimbursements from Regional Funding		
	Reimbursements through FY 2012 (YOE Dollars)	Estimated Future Reimbursements: FY 2013-2026 (2012 Dollars)	Total Reimbursements: FY 2006-2026 (2012 and YOE Dollars)
Capacity / Intersection Improvements	326.7	1,223.5	1,550.2
Intelligent Transportation Systems	30.9	34.8	65.7
MAG Implementation Studies	2.6	24.1	26.7
Total	**360.3**	**1,282.4**	**1,642.6**

7.2.2 Fiscal Year 2012 Program Rebalancing

During the past several years, actual and forecasted revenues from the Proposition 400 half-cent sales tax extension have declined significantly. In FY 2011, the half-cent sales tax revenue forecasts were revised, and it was determined that a $196.5 million reduction in the ALCP through FY 2026 would be necessary. Action was taken during FY 2012 to address the impacts of this decline in revenues.

On September 21, 2011, the MAG Regional Council approved the FY 2012 ALCP, which addressed the deficit in program funding and reestablished the fiscal balance of the program. Table 7-2 displays each agency's new allocation of the ALCP, as well as the required reduction from its previous level to maintain the fiscal balance of the ALCP.

TABLE 7-2
FY 2012 REVISED AGENCY PROGRAM ALLOCATIONS
(Million $'s)

Lead Agency	Agency Allocation (FY11 ALCP)				Required Reduction (2011$)	Reduced Allocation of ALCP
	FY06-10 (YOE$)	FY11 (2010$)	FY12-26 (2011$)*	Total		
Carefree	$ -	$ -	$ 5.6	$ 5.6	$ 0.6	$ 4.9
Chandler	$ 6.7	$ 5.0	$ 10.8	$ 142.5	$ 16.0	$ 126.5
Fountain Hills	$ 0.4	$ 1.7	$ 4.1	$ 6.2	$ 0.7	$ 5.5
Gilbert	$ 19.2	$ 6.6	$ 20.8	$ 146.6	$ 16.5	$ 130.1
Maricopa County	$ 34.3	$ 8.8	$ 368.8	$ 412.0	$ 46.3	$ 365.7
Mesa	$ 6.5	$ 7.1	$ 456.2	$ 469.8	$ 52.8	$ 417.0
Peoria	$ 44.7	$ 5.3	$ 38.9	$ 98.9	$ 11.2	$ 87.7
Phoenix	$ -	$ 21.3	$ 96.9	$ 118.2	$ 13.3	$ 104.9
Scottsdale	$ 25.5	$ 20.0	$ 301.6	$ 347.1	$ 39.0	$ 308.1
TOTAL	$ 157.3	$ 85.7	$1,503.9	$1,746.8	$196.5	$1,550.4

* Projects that were shifted beyond FY 2026 are included in these allocations.

7.2.3 Fiscal Year 2013 Program Rebalancing

As of the end of FY 2012, MAG committee discussions were still ongoing regarding the development of the FY 2013 ALCP. These discussions focused on addressing a deficit of $40 million through FY 2026 in total regional funding in the program, due to the continued decline of program revenues. Another equally critical factor was the need to balance annual expenditures and revenues, which were also out of balance in a number of years. Three proposed scenarios to rebalance the program were under review:

- *Scenario 1: Bonding & Inflation* - Bonding is one finance mechanisms that has been used to advance programmed reimbursements in the ALCP. However, the debt service associated with bonding places a burden on program revenues, since the interest cost for the bonds are an additional cost to the ALCP. Inflation adjustments have also been applied annually in the program, so that project reimbursements are able to keep up with rising prices in the construction market. Such inflation adjustments also place a burden on programmed revenues.

Under Scenario 1, bonding would be used to advance certain programmed reimbursements to the greatest extent possible. At the same time, other programmed reimbursements would need to be deferred due to a deficit of program funds under this option. In addition, to restore the balance of program funds, $30-45 million would need to be removed from the program to restore the fiscal balance of the ALCP.

- *Scenario 2: No Bonding* - Scenario 2 would drop any bonding to advance reimbursements, eliminating the associated debt service expenses. However, lead agencies could anticipate programmed reimbursements to be deferred between four to six years on average. Annual inflation adjustments would be retained under this scenario. Approximately $10-15 million would need to be removed from the program to restore the fiscal balance of the ALCP.

- *Scenario 3: No Bonding & No Inflation* - Scenario 3 would operate the same as Scenario 2; however, programmed reimbursements would not be adjusted for inflation. Under this Scenario, reimbursements would be deferred to a lesser extent than Scenario 2 because the burden on the program would be reduced. It is estimated that up to $5 million in programmed may need to be removed from the program to restore the fiscal balance to the ALCP.

Consideration of the FY 2013 ALCP is scheduled to continue during August-September 2012, with adoption of a final rebalanced program anticipated in September 2012.

7.2.4 Future Fiscal Status

Table 7-3 summarizes the future funding sources and uses applicable to the Arterial Life Cycle Program for FY 2013 through FY 2026. The estimates in Table 7-3 are based on Scenario 3 described above. Updated fiscal status information based on the final rebalanced FY 2013 FLCP will provided in subsequent issues of the Annual Report.

Sources for the Life Cycle Program include the Proposition 400 half-cent sales tax extension ($682 million); Federal Highway Congestion Mitigation and Air Quality (CMAQ) funds ($128 million); and Federal Highway Surface Transportation Program (STP) funds ($814 million). In addition, an allowance for inflation of $352 million has been deducted. Including a beginning balance of $28 million, this yields a net total of $1.3 billion (2012 $'s) for use on arterial street projects through FY 2026.

Table 7-3 also lists the estimated future regional funding reimbursements totaling $1.3 billion, identified in the Life Cycle Program for the period FY 2013 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 $17 million or 1.3 percent.

7.3 ARTERIAL STREET PROGRAM OUTLOOK

During FY 2012, a balanced ALCP was approved by the MAG Regional Council on September 21, 2011. As of the end of FY 2012, MAG committee discussions were ongoing regarding the development of the FY 2013 ALCP. These discussions focused on addressing a recurrence of imbalances in the program, due to declining revenues. These imbalances took the form of a deficit of $40 million in total regional funding in the program, as well as annual imbalances in expenditures and revenues in a number of years. Three proposed scenarios to rebalance the program were under review. Consideration of the FY 2013 ALCP is scheduled to continue during August-September 2012, with approval of a final rebalanced program by the MAG Regional Council anticipated in September 2012. Based on the scenario that will be under consideration, Life Cycle Program reimbursements are in balance with the projected available future funds, with funding in excess of disbursements by about $17 million or 1.3 percent.

TABLE 7-3
ARTERIAL STREET LIFE CYCLE PROGRAM
FUTURE SOURCES AND USES OF FUNDS: FY 2013-2026 *
(2012 and Year of Expenditure Dollars in Millions)

SOURCES OF FUNDS	
Source	**Projected Future Regional Funding FY 2013-2026 (YOE Dollars)**
Proposition 400: One-Half Cent Sales Tax Extension	681.9
Federal Highway / MAG CMAQ	127.8
Federal Highway / MAG STP	814.1
Other Income	-
Bond and Loan Proceeds	0.0
Plus Beginning Balance	28.2
Less Debt Service	0.0
Less Inflation Allowance	(352.1)
Total (**2012$'s**)	**1,299.9**
USES OF FUNDS	
Category	**Estimated Future Regional Disbursements: FY 2013-2026 (2012 Dollars)**
Capacity / Intersection Improvements	1,223.5
Intelligent Transportation Systems	34.8
MAG Implementation Studies	24.1
Total (**2012 $'s**)	**1,282.4**

* Reflects a tentative assessment of the program based on Scenario 3 (see Section 7.3.3 above.)

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, fare revenues 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., (VMR) a public nonprofit corporation, was created to form a partnership among the cities of Phoenix, Tempe, Mesa and Glendale to implement the LRT system. The cities of Chandler and Peoria are also current members of VMR. VMR is responsible for overseeing the operation of the light rail line, as well as the design, construction and operation of 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. Similarly, VMR uses the name "*METRO"* to refer to the light rail 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 (known as LINK), 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 2013 through FY 2017).

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.

Collectively, the Regional BRT/Express transit services account for a total of $129 million (2012 and YOE $'s) in regional funding for operating costs for the period FY 2006 through FY 2026 (see Table 8-2). This total represents approximately 2.6 percent of the total regional funding budget allocated for transit. There are a total of 16 BRT/Express routes identified for funding in the TLCP during the planning period from FY 2006 through 2026. An additional 15 routes have been shifted beyond FY 2026 but are in the Regional Transportation Plan. Also, another route (Chandler Blvd. Arterial BRT) is included in the RTP as an illustrative project. Since funding became available a total of 13 routes have been implemented. Two of the routes were implemented with two different patterns, one providing an express connection to downtown Phoenix and the other to light rail stations. As a result of the continued decline in revenues and the loss of Local Transportation Assistance Funds (LTAF), four of the express routes have been eliminated due to low productivity. The routes were eliminated in July 2010 and include routes 511 (East Loop 101 Connector), 536 (Part of Red Mountain Express), 572 (North Loop 101 Connector) and 576 (Part of West Loop 101 Connector).

During FY 2012, RPTA undertook a significant planning process to restructure and streamline many of the existing express routes. Many of the routes in operation prior to Proposition 400 were operated with significant local service and did not serve park-and-ride lots. With the construction of many new park-and-ride lots and the expansion of the region's HOV network, many routes were streamlined to provide faster service. These changes will be implemented during FY 2013.

During the next five years, FY 2013 through FY 2017, two additional routes are planned for implementation. The routes generally operate in the peak direction at

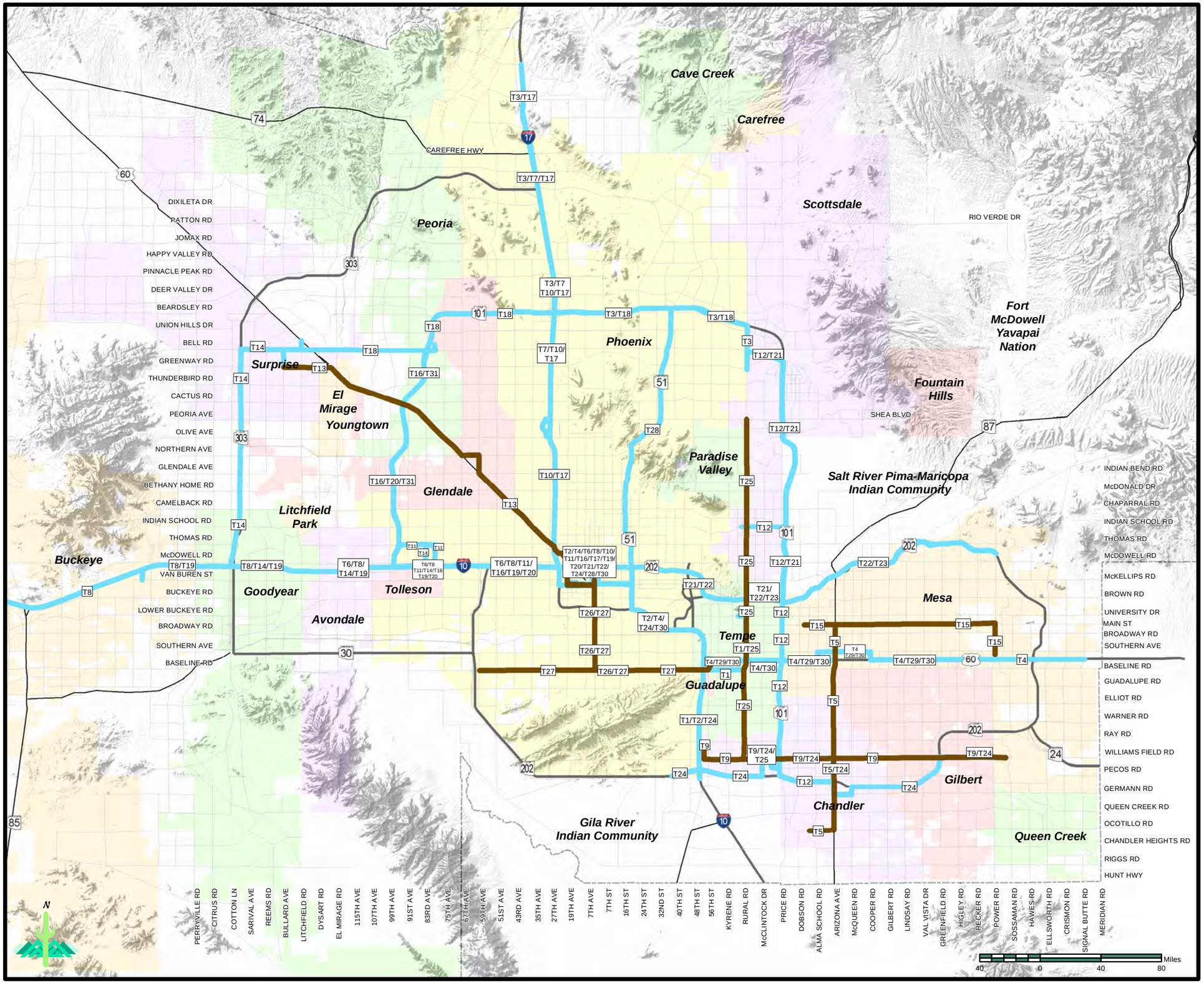

Figure 8-1

MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2012 Annual Report on Proposition 400

Bus Rapid Transit (BRT)

- 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.

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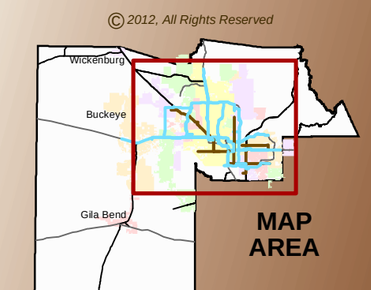

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30-minute intervals, during the three-hour morning and afternoon commute periods.

Routes Implemented During FY 2012

- None.

Routes Planned for Implementation During FY 2013 through FY 2017

- South Central Avenue Express (T26); Service start: FY 2013
- Scottsdale/Rural BRT (T25); Service start: FY 2015

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 addressed 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 was intended to ensure 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.

Regional Grid bus operations account for a total of $604 million (2012 and YOE $'s) in regional funding for the period FY 2006 through FY 2026 (see Table 8-2). This represents approximately 12.2 percent of the total regional funding budget allocated for transit. There are a total of 23 Regional Grid routes identified for funding in the TLCP during the planning period from FY 2006 through 2026. However, many of the routes scheduled for funding will not be implemented with the full service levels originally programmed. Lower levels of service have been programmed in order to implement more of the routes through FY 2026. An additional 10 routes have been shifted beyond FY 2026 but are in the Regional Transportation Plan. Also, another route (Litchfield Rd.) is included in the RTP as an illustrative project. Since funding became available eight routes have been implemented.

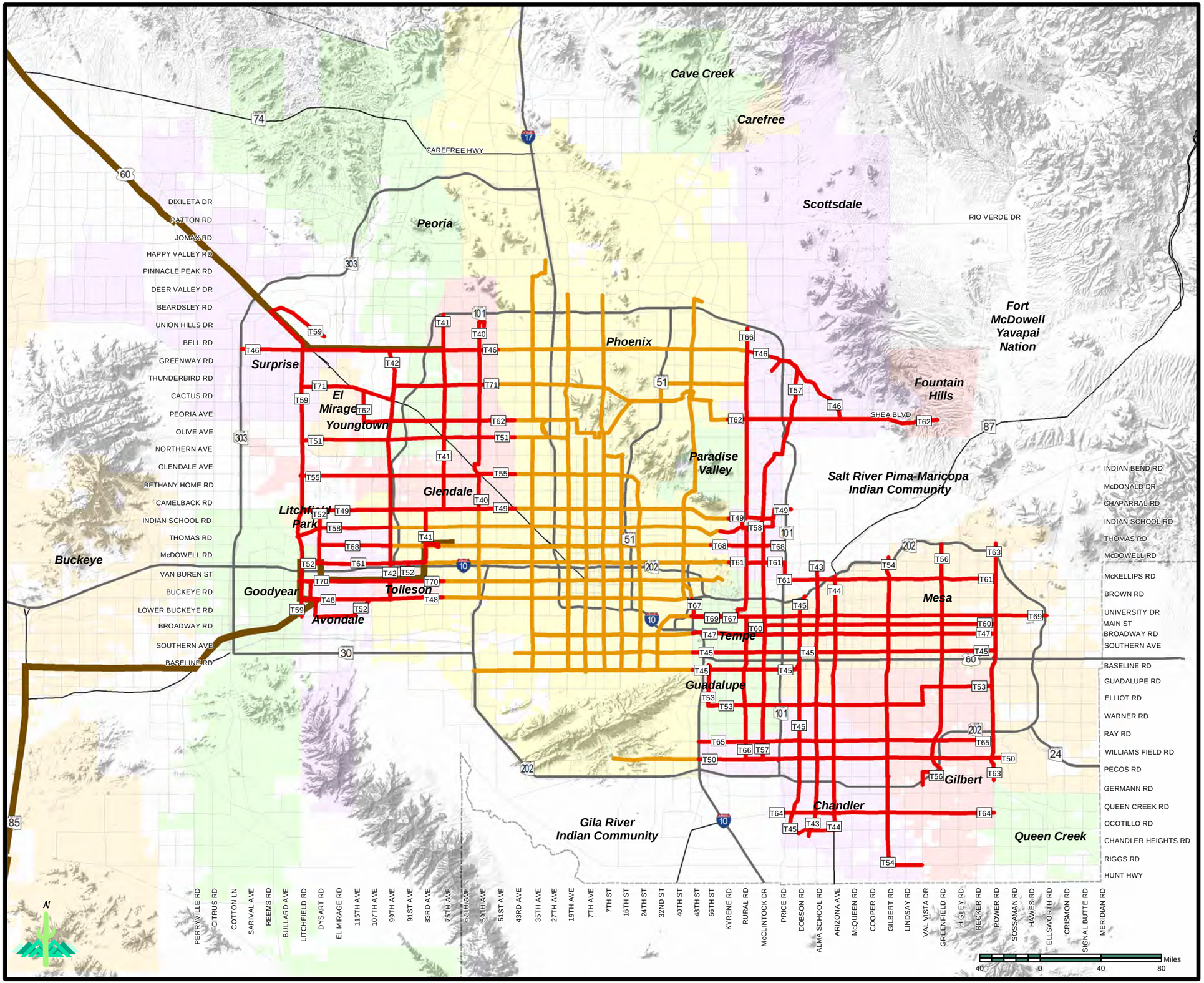

Figure 8-2

MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2012 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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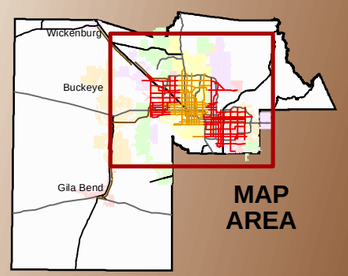

MAP AREA

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During the next five years, FY 2013 through FY 2017, six routes are planned for implementation. In general these routes were originally planned to 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 is provided. However, many of the routes are currently planned for lesser service levels due to the reduction in revenues. In some cases funding is only adequate for existing service levels.

Routes Implemented During FY 2012

- Arizona Avenue/Country Club Drive (T44); Service start: FY 2012.

Routes Planned for Implementation During FY 2013 through FY 2017

- Baseline Road (T45); Service start: FY 2013.
- Elliot Road (T53); Service start: FY 2013.
- Thomas Road (T68); Service start: FY 2013.
- Van Buren Street (T70); Service start: FY 2013.
- McDowell/McKellips Roads (T61); Service start: FY 2014.
- Waddell/Thunderbird (T71); Service start: FY 2015.

8.1.3 Bus Operations: Other

In addition to the BRT/Express and Regional Grid services, other services account for a total of $706 million (2012 and YOE $'s) in regional funding for operating costs for the period FY 2006 through FY 2026 (see Table 8-2). 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 $7 million (2012 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. Productivity on the Wickenburg route had been very low and Valley Metro looked at ways to enhance ridership. However, as the productivity continued to be very low, the route was eliminated in FY 2012.

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 $408 million (2012 and YOE $'s) in regional funding during FY 2006 through FY 2026 (see Table C-3). During the next five years (FY 2013 through FY 2017), it is anticipated that $118 million (2012 $'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.

Existing Local and Express Service: Supplementary funding is allocated to previously existing local and express services, which complement the planned

BRT and Supergrid networks. This accounts for a total of $74 million (2012 and YOE $'s) in regional funding during FY 2006 through FY 2026 (see Table C-3).

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 $271 million (2012 and YOE $'s) during FY 2006 through 2026 (see Table 8-2). There is $4 million (2012 and YOE $'s) for contingency included in this amount. The Regional Transportation Plan 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; two 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 2,154 vehicles. Not all of these facilities are currently funded through FY 2026. These facilities include 5 maintenance facilities, 2 park-and-ride facilities, 9 transit centers and 2 BRT corridors.

As of 2011, construction 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 $56 million (2012 $'s) in regional funding will be expended during the next five years (FY 2013 through FY 2017) on bus capital facilities.

8.1.5 Bus Capital: Fleet

Over the planning horizon associated with Proposition 400, fleet purchases account for a total of $850 million (2012 and YOE $'s) during FY 2006 to FY 2026 (see Table 8-2). This includes the purchase of 1,487 buses for fixed route networks; 26 buses for rural routes; 546 Dial-a-Ride (DAR) vans for paratransit purposes; and 1,305 vanpool vans. There is $1.5 million (2012 and YOE $'s) contingency included. It is anticipated that a total of $194 million (2012 $'s) in regional funding will be expended during the period FY 2013 through FY 2017 on vehicle purchases. These purchases will include 344 fixed route buses, 6 express/BRT buses, 5 rural transit buses, 154 paratransit vehicles, and 325 commuter vans. These reflect both replacement and expansion vehicles.

8.2 STATUS OF HIGH CAPACITY/ LIGHT RAIL TRANSIT PROJECTS

The Transit Life Cycle Program includes an extensive High Capacity / Light Rail Transit (HCT/LRT) component for the MAG Region. This covers support infrastructure for the HCT/LRT system, as well as future extensions of HCT/LRT corridors that are planned throughout the region. The construction of the 20-mile light rail Central Phoenix / East Valley (CP/EV) that was developed through the CP/EV 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 HCT/LRT throughout the metropolitan area. HCT/LRT projects account for a total of $2.4 billion (2012 and YOE $'s) in the Transit Life Cycle Program (see Table 8-2), which is approximately 48 percent of the total regional funding dedicated to transit. Of this amount, approximately $1.8 billion (2012 and YOE $'s) applies toward construction, whereas the remaining $596 million (2012 and YOE $'s) applies to support infrastructure affiliated with the HCT/LRT system. None of the regional funding for HCT/LRT is allocated to operating costs.

8.2.1 Central Phoenix/East Valley (CP/EV) LRT

The Central Phoenix/East Valley (CP/EV) LRT light rail transit (LRT) starter segment was an outgrowth of the CP/EV Major Investment Study (MIS) in 1998. The purpose of the CP/EV 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 CP/EV LRT extends from Bethany Home Road and 19th Avenue into downtown Phoenix; from downtown Phoenix to downtown Tempe and Arizona State University; and continuing to the intersection of Main Street and Sycamore in Mesa. The CP/EV LRT was completed in December 2008 and averaged over 42,000 boardings per day in FY 2012, over 50 percent higher than projected.

The CP/EV LRT operates primarily at-grade on city streets, with two tracks and light rail vehicles running in trains from one to three cars. The trains run in both directions approximately 18 hours per day on weekdays, and 22 hours per day on weekends. The trains operate every 12 minutes during peak hours, 15 minutes on weekends and 20 minutes during off-peak hours.

Important elements of the CP/EV LRT include 28 stations, 9 park-and-ride lots, 50 light rail vehicles and traffic signal priority strategies to improve speed. The park-and-ride facilities have over 3,600 spaces. Light rail stations are generally located about 3/4-mile apart, but closer (1/3-mile) in urban centers. Shuttle buses and an improved fixed route network play an important role in the light rail

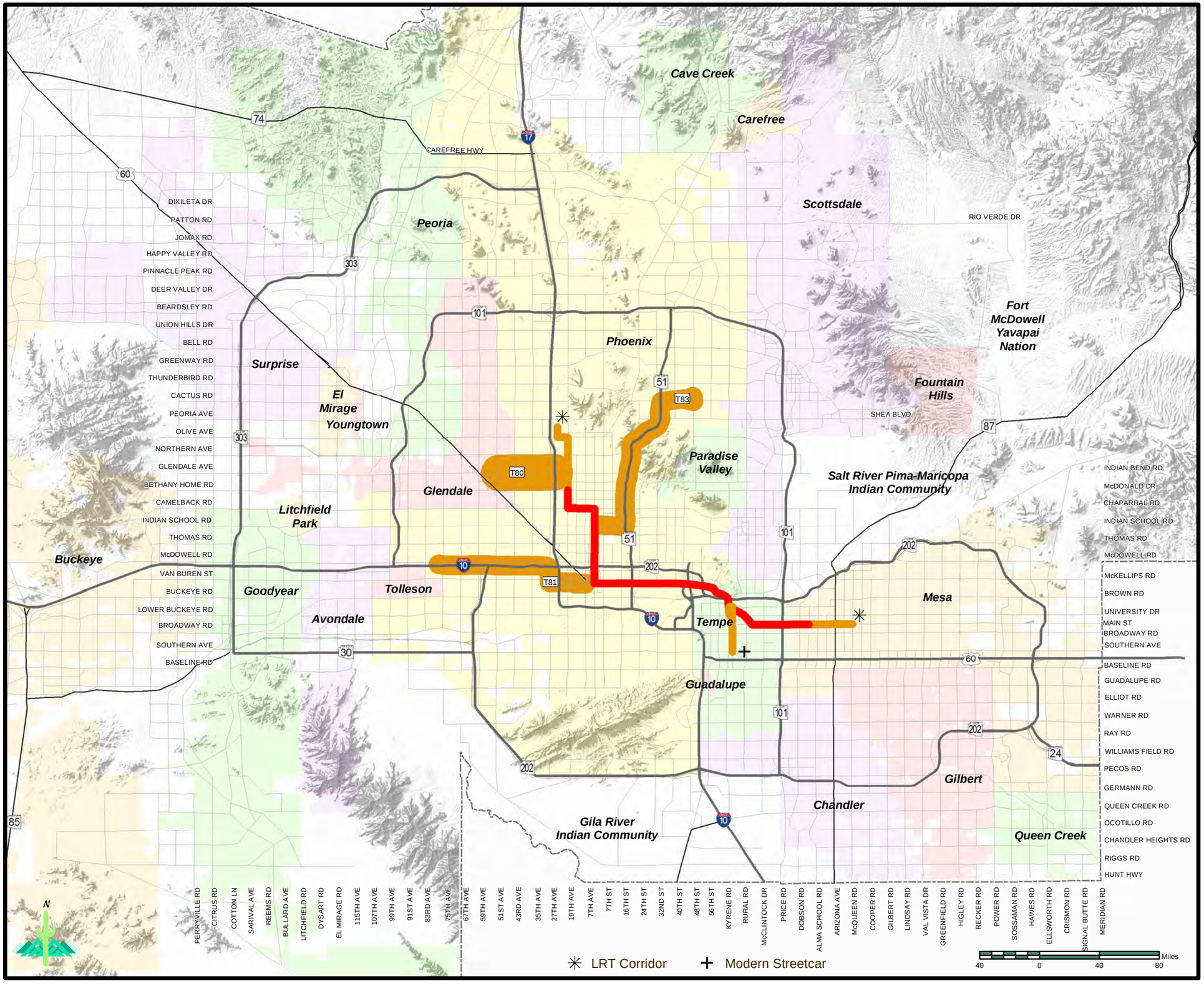

Figure 8-3

MARICOPA ASSOCIATION of GOVERNMENTS

MAG 2012 Annual Report on Proposition 400

Light Rail Transit (LRT)/ High Capacity Transit

- Initial 20-mile Light Rail Segment
- Future High Capacity Transit Corridor
- 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.

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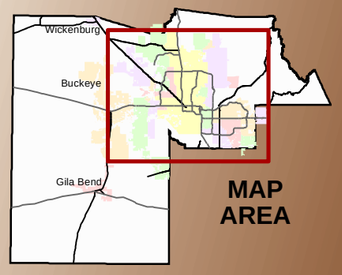

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system. Half-cent sales tax money from Proposition 400 was not utilized to pay for route construction of the CP/EV LRT, but is rather allocated toward certain elements of the support infrastructure. None of the regional funding for HCT/LRT is allocated to operating costs.

8.2.2 High Capacity / Light Rail Transit: Support Infrastructure

Completion of support infrastructure affiliated with the HCT/LRT system accounts for a total of $596 million (2012 and YOE $'s) in the Transit Life Cycle Program for the period FY 2006 through FY 2026. Of this amount, $199 million (2012 and YOE $'s) applies toward infrastructure along the CP/EV (expended by 2010); $66 million (2012 and YOE $'s) applies toward corridor preliminary planning, project development and system integration planning (to be expended by 2026); $197 million for utility relocation reimbursements; and $134 million (2012 and YOE $'s) applies to other HCT/LRT improvements throughout the system (to be expended by 2026).

8.2.3 High Capacity / Light Rail Transit: Future Corridors

The Transit Life Cycle Program includes regional funding for the completion of six additional LRT/HCT segments on the system. These include a five-mile Northwest Extension, which in FY 2007 was split into two phases; a 2.6-mile Tempe Streetcar; a 3.1-mile light rail extension from the east terminus of the CP/EV to Mesa Drive; a five-mile corridor to downtown Glendale; an 11-mile corridor along I-10 into west Phoenix; and a 12-mile corridor to northeast Phoenix; Development of the route extensions account for a total of $1.8 billion (2012 and YOE $'s) during FY 2006 through FY 2026 (see Table 8-2).

It should be noted that local sources will provide a significant share of the funding for the Northwest Extension and Glendale corridor. 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 and preliminary planning efforts, 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.

<u>Future Corridors</u>

In FY 2007 the Northwest Extension was split into two phases. For Phase 1 (to Dunlap Rd.), the design was completed in 2008-2009 and right-of-way acquisition occurring in 2008-2010. Construction of the extension for Phase 1 that was currently on-hold is now scheduled to be complete in FY 2016. Phase 2 is scheduled to be complete in FY 2026. It is expected that utility relocations and

street improvements will be completed in the corridor in FY 2013 to facilitate the light rail construction.

The Central Mesa LRT Extension is currently in the Small Starts Project Development (design) phase awaiting approval of the Project Construction Grant Agreement (PCGA) to begin construction. The light rail transit extension will extend along Main Street from the end of line station for the CP/EV at Sycamore eastward to Mesa Drive. Construction is scheduled to be complete in FY 2016.

The Tempe Streetcar locally preferred alternative was approved in FY 2011 and is currently in the Project Definition and Environmental Assessment phase. Construction is scheduled to be complete in FY 2016.

The Phoenix West corridor is currently in the Project Definition and Environmental Assessment phase. An early recommendation adopted by the METRO Board in 2008 was a high capacity transit alignment within the I-10 right-of-way west of I-17. The recommendation for alignment and technology were formally adopted by MAG regional council in July 2012. Construction is scheduled to be complete in FY 2023.

The City of Glendale and the City of Phoenix have engaged with METRO to discuss alternatives to the 2026 Glendale corridor currently shown in the RTP to ensure service to prominent activity centers and anticipated growth areas. As an initial step, an early Alternatives Analysis was completed in FY 2012. The purpose of the study was to identify the potential project alternatives for the Glendale corridor that would be eligible for FTA 5309 New Starts funding and further evaluated through AA/NEPA. The full Alternatives Analysis/Draft Environmental Impact Statement phase will begin in FY 2013. Construction is scheduled to be completed in FY 2026.

While remaining in the Regional Transportation Plan, the Northeast Phoenix LRT corridor, which is planned to begin at Indian School Rd./Central Ave. and extend to Paradise Valley Mall, has been shifted beyond the TLCP horizon year of FY 2026. It was necessary to delay this project beyond FY 2026 to accommodate the decrease in actual and forecasted revenues, and construction is scheduled to be complete in FY 2032.

8.3 TRANSIT PROGRAM CHANGES

The estimated total transit costs of $5.0 billion for FY 2006-2026 represent a 8.9 percent decrease over the figure of $5.5 billion provided in the 2011 Annual Report. During FY 2012, significant efforts were made to identify further cost savings or to enhance operating revenues. The major reductions in expenses were a result of identifying additional operating revenues, which offset costs, lowering the amount subsidized by regional revenues and a significant restructuring of the existing express bus system. The resulting cost adjustments

estimated for the Life Cycle Program components are summarized in Table 8-1. The net total of these cost changes amounts to approximately a $487 million decrease. The TLCP projects continue to be reevaluated and changes in project implementation and reductions in current service may be made based on actual revenues received.

As a result of the TLCP adjustments made in FY 2009 and FY 2010, the "service start date" for a number of bus routes was shifted beyond FY 2026. These routes are noted in the transit appendix tables. In addition, in FY 2011 four BRT/Express routes were eliminated and the City of Phoenix assumed funding for four other BRT/Express routes that are already in service. These routes are also noted in the transit appendix tables.

TABLE 8-1
TRANSIT LIFE CYCLE PROGRAM COST CHANGES
(2010, 2011 and Year of Expenditure Dollars in Millions)

Category	2011 Annual Report Total Costs: FY 2006 - 2026 (2011 and YOE Dollars)	2012 Annual Report Total Costs: FY 2006 - 2026 (2012 and YOE Dollars)	Change in Total Costs: 2011 vs. 2012
Bus Operations: BRT/Express	129.0	128.5	(0.5)
Bus Operations: Regional Grid	697.9	603.9	(94.1)
Bus Operations: Other	742.1	706.1	(36.1)
Bus Capital Projects: Facilities	265.6	270.5	4.8
Bus Capital Projects: Fleet	973.1	850.0	(123.0)
Light Rail Transit: Support Infrastructure	604.7	595.6	(9.0)
Light Rail Transit Capital: Route Extensions	2,041.3	1,812.2	(229.0)
Total	**5,453.6**	**4,966.7**	**(486.9)**

8.4 TRANSIT PROGRAM EXPENDITURES, ESTIMATED FUTURE COSTS AND FISCAL STATUS

8.4.1 Transit Life Cycle Program Update

Due to the continued economic downturn and the decrease in estimated future revenues, in FY 2011 it was determined estimated TLCP costs for FY 2012 to 2026 were not in balance with projected future funds available, with a deficit of approximately $581 million (2011 $'s). During FY 2012, after previously identified modifications to existing services were completed, RPTA/METRO

moved forward with rebalancing the TLCP by adjusting future services and capital projects to meet the projected revenues.

On May 17, 2012, the Valley Metro RPTA and METRO Board of Directors approved the 2012 Transit Life Cycle Program (TLCP) update. An updated financial model for bus service is balanced through FY 2018, shows deficits in FY 2019 through FY 2025 and a final positive balance in FY 2026. The updated bus financial model will provide guidance for the continuing effort to fully rebalance the bus component of the TLCP. The high capacity / light rail transit (HCT/LRT) component of the TLCP has a fund balance of $39 million in FY 2026 after the completion of all HCT/LRT projects in the RTP, with the exception of construction of the Northeast Phoenix corridor.

Balance was achieved in FY 2012 by delaying the implementation of numerous projects and reducing the scope of many other projects, especially bus route frequencies and routing. During FY 2012, significant efforts were made to identify further cost savings or to enhance operating revenues. The major reductions in expenses were a result of identifying additional operating revenues, which offset costs, lowering the amount subsidized by regional revenues and a significant restructuring of the existing express bus system.

8.4.2 Program Expenditures and Estimated Future Costs

Table 8-2 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. Also, for light rail projects only capital expenditures and costs are reported, since operating expenses were excluded from the Proposition 400 program from its inception. However, expenditures and costs reported for both bus and rail projects reflect total costs and include all funding sources.

As indicated in Table 8-2, the total estimated cost for the Transit Life Cycle Program for the period FY 2006 through FY 2026 is $5.0 billion (2012 and YOE $'s). Expenditures through FY 2012 total $1.2 billion (YOE $'s), while estimated future costs total $3.8 billion (2012 $'s).

8.4.3 Future Fiscal Status

Table 8-3 summarizes the future funding sources and uses that apply to the Transit Life Cycle Program for the period FY 2012 through FY 2026. Funding sources available for this period are estimated to total $3.8 billion (2012 $'s).

These sources include the Proposition 400 half-cent sales tax extension ($2.2 billion); Regional Area Road Fund transfer ($67 million); Federal Transit/5307 funds ($714 million); Federal Transit/5309 funds ($1.1 billion); Federal

TABLE 8-2
TRANSIT LIFE CYCLE PROGRAM
SUMMARY OF EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026
(2012 and Year of Expenditure Dollars in Millions)

Category	Expenditures: through FY 2012 (Year of Expenditure Dollars)			Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Costs: FY 2006 - 2026 (2012 and YOE Dollars)
	Operations	Capital Investments	Total		
Bus Operations: BRT/Express	32.8	--	32.8	95.7	128.5
Bus Operations: Regional Grid	108.6	--	108.6	495.3	603.9
Bus Operations: Other	159.3	--	159.3	546.7	706.1
Bus Capital Projects: Facilities	--	195.5	195.5	75.0	270.5
Bus Capital Projects: Fleet	--	249.3	249.3	600.7	850.0
Light Rail Transit: Support Infrastructure	--	356.8	356.8	238.8	595.6
Light Rail Transit Capital: Route Extensions		103.0	103.0	1,709.2	1,812.2
Total	**300.7**	**904.5**	**1,205.2**	**3,761.5**	**4,966.7**

Highway/CMAQ funds ($342 million); other income from local sources ($368 million); and bond and loan proceeds ($215 million). Estimated future bus farebox receipts of $187 million provide additional revenue. Expenses totaling $420 million are deducted from these sources, covering estimated future debt service. In addition, an allowance for inflation of $999 million is deducted. Including a beginning balance of $99 million, this yields a net total of $3.8 billion (2012 $'s) for use transit projects and programs through FY 2026.

Table 8-3 also lists the estimated future uses identified in the Life Cycle Program totaling $3.76 billion for the period covering FY 2012 through FY 2026, expressed in 2012 $'s. These costs cover bus operations ($1.1 billion), bus capital projects ($676 million), and light rail transit capital projects ($1.9 billion). Therefore, for the remainder of the Transit Life Cycle Program, projected revenues are sufficient to meet future projects costs, with a small surplus of approximately $74 million (2012 $'s). RPTA and METRO, in conjunction with their members and MAG, undertook significant efforts over the previous two years to bring the program back into balance.

TABLE 8-3
TRANSIT LIFE CYCLE PROGRAM
FUTURE SOURCES AND USES OF FUNDS: FY 2013-2026
(2012 and Year of Expenditure Dollars in Millions)

SOURCES OF FUNDS	
Category	**Projected Future Funding: FY 2013-2026 (YOE Dollars)**
Proposition 400: One-Half Cent Sales Tax Extension	2,162.6
Regional Area Road Fund	67.0
Federal Transit / 5307 Funds	713.8
Federal Transit / 5309 Funds	1,062.2
Federal Highway/ MAG CMAQ	342.4
STP-AZ	35.8
Other Income	368.1
Bond and Loan Proceeds	215.0
Bus Farebox Revenues	187.3
Plus Beginning Balance	99.4
Less Debt Service	(419.6)
Less Inflation Allowance	(999.0)
Total (2012 $'s)	**3,835.0**
USES OF FUNDS	
Category	**Estimated Future Costs: FY 2013-2026 (2012 Dollars)**
Bus Operations: BRT/Express	95.7
Bus Operations: Regional Grid	495.3
Bus Operations: Other	546.7
Bus Capital Projects: Facilities	75.0
Bus Capital Projects: Fleet	600.7
Light Rail Transit: Support Infrastructure	238.8
Light Rail Transit Capital: Route Extensions	1,709.2
Total (2012 $'s)	**3,761.5**

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 the development and implementation of transit projects, as identified in the MAG RTP. The estimated future costs for FY 2012 to 2026 are in balance with the projected future funds available, with a surplus of approximately $74 million (2012 $'s). Balance was achieved in FY 2012 by delaying the implementation of numerous

projects and reducing the scope of many other projects, especially bus route frequencies and routing.

A continuing requirement of the life cycle process is to maintain a balance, through effective financing and cash flow management, value engineering of projects, and Plan and Program adjustments as may be necessary. RPTA and METRO, together with their members and MAG, will continue to
Another consideration is that a large part of the funding for the LRT/HCT system is awarded by the US Department of Transportation through the discretionary "New Starts Program". 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. Revenues from the Federal Transit Administration, beyond the "New Starts Program" for the LRT/HCT system, are a key source of revenues for the bus capital program. Continued pressure at the federal level to reduce spending could result in decreased federal revenues for the TLCP, which could put additional projects in jeopardy in the future.

The recently approved legislation, Moving Ahead for Progress in the 21st Century (MAP-21), makes significant changes to the federal transit funding programs. MAP-21 eliminates many of the discretionary programs in favor of formula based programs. This allows a more predictable stream of federal revenues for planning purposes. RPTA, METRO and MAG will need to monitor the implementation of MAP-21 and evaluate its impact on the RTP.

CHAPTER NINE

PERFORMANCE MONITORING AND ASSESSMENT

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. A number of the goals and objectives adopted relate to the performance of the system as a whole, as well as the individual components of the systems across all modes, such as freeway, arterial and transit corridors.

MAG, continuing to place emphasis on performance-based planning, has established an ongoing Transportation System Performance Monitoring and Assessment Program. Over the last four years, this program has developed various reporting methodologies and web-based components, allowing the public easy access to performance data and visualization. The material presented in this chapter documents performance of the system based on the results of the on-going monitoring and assessment program, as well as forecasted performance of the system based on simulations for 2031.

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, normalization and analysis of observed 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 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. A large amount of data is collected annually in the MAG region related to the movement of people, goods, and services.

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.

Monitoring Data Sources: Data from the Arizona Department of Transportation's (ADOT) Freeway Management System (FMS), which now covers 122 centerline miles of the regional freeway system is collected continuously from sensors and other detector technologies that record the throughput, speed and classification of vehicles across a large portion of the MAG region. As the FMS system continues to grow, it will allow the use of these data for future reliability performance calculations.

For the past two years, MAG has also acquired speed traffic data for all freeways and arterials in the region from commercial sources; this acquisition has enhanced the baseline traffic data archive serving planning and performance measurement activities. Since 2011, MAG has contracted with private data collection sources to acquire GPS-based speed data for all regional freeways and major arterials thus supplementing the existing arterial and ADOT FMS freeway observed databases. This acquisition is proposed to be renewed on a yearly basis allowing the current data archive to be more geographically comprehensive and enable MAG to perform analysis on system and corridor performance from comprehensive data sources.

In addition, volume traffic data is collected on arterial roadways through both permanent and temporary counting stations deployed by a variety of MAG member agencies. Moreover, periodic studies are conducted to collect information on topics such as the average number of people in cars, the proportion of trucks on the roadways, and levels of congestion on the freeways and arterials.

Recent Monitoring Results: Per Capita Freeway Vehicle-Miles of Travel (VMT) is defined as the average number of freeway miles a vehicle in the Phoenix-Mesa urbanized area travels per day per person. This measure tracks overall vehicle use travel trends for the region. As seen in Table 9-1, the total number of freeway vehicle miles traveled in 2011 (29,495,000) is showing an average 1.6% increase from the previous two years. Results in Table 9-1 are illustrative of the fact that regional economic conditions - generally following the slight upward trend in the national economy - are starting to show increased travel in the MAG

region. Latest economic indicators point at an increased rate of economic activity, as Arizona slowly recovers from the Great Recession. HURF (Highway User Revenue Funds) revenues have shown an increase of 0.9% when comparing 2010 and 2011.

TABLE 9-1
PER CAPITA VMT for the PHOENIX/MESA URBANIZED AREA

	2008	2009	2010	2011
Total Freeway VMT*	28,960,000	28,950,000	29,087,000	29,495,000
Population of Phoenix-Mesa Urbanized Area**	3,278,843	3,308,396	3,348,298	3,370,250
Per Capita Freeway VMT	8.8	8.8	8.7	8.75

*Source: *ADOT Highway Performance Monitoring System (HPMS)*
*** ACS and Census*

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.

Travel Demand Forecasting: Forecasts of travel demand 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.

An important observation regarding the current MAG Four Step Travel Demand Model is that it is inherently a static model. Current performance results have been consolidated from model runs using the 2007 Update to the Socioeconomic Projections, which may not reflect recent changes in regional demographics. In addition, current that market conditions such as fuel costs are not factored immediately into the simulation runs.

Build vs. No-Build Scenarios: Transportation network simulation models are also used to assess the impact of improvements (Build Scenarios) compared to conditions without improvements (No-Build Scenarios). This capability is

especially important when an area experiences significant changes in growth patterns, such as observed differences between the years 2006 and 2011 in the MAG region. Under high growth conditions, the performance of the transportation system may decline even though improvements are made, due to additional travel demand brought on by the increase in housing units and population. The reverse occurs when a decrease in demand allows for a potential reduction in congestion levels. However, in the case of an increased demand scenario, such as the one depicted in the "2031 No-Build" column of Table 9-5, conditions easily reach critical levels, if improvements are not 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 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 last 2 years, the following studies have been completed: the ADOT Freeway Management System (FMS) Detector Accuracy Evaluation, the 2008 Regional Household Survey, the 2007 Regional On-Board Transit Survey conducted by RPTA and the Internal Truck Travel Survey. During the 2010-2011 Fiscal Year, four additional studies which have enhanced existing transportation databases have been initiated, the Southwest Corridor Major Investment Study, the update to the Mode Choice Model, the Central Phoenix Framework Study and the Sustainable Transportation-Land Use Study.

Volume Data: The ADOT Freeway Management System (FMS) provides count data on the mainline general purpose lanes and HOV lanes 24/7/365, and on ramps on the majority of the urbanized freeway system. Traffic counts are collected through in-pavement loop detectors and passive acoustic detectors (PADs). This data feeds directly to the Arizona AZ511 system, providing real-time traveler information. Data is also aggregated in periods from five minutes to 24 hours for weekdays and weekends.

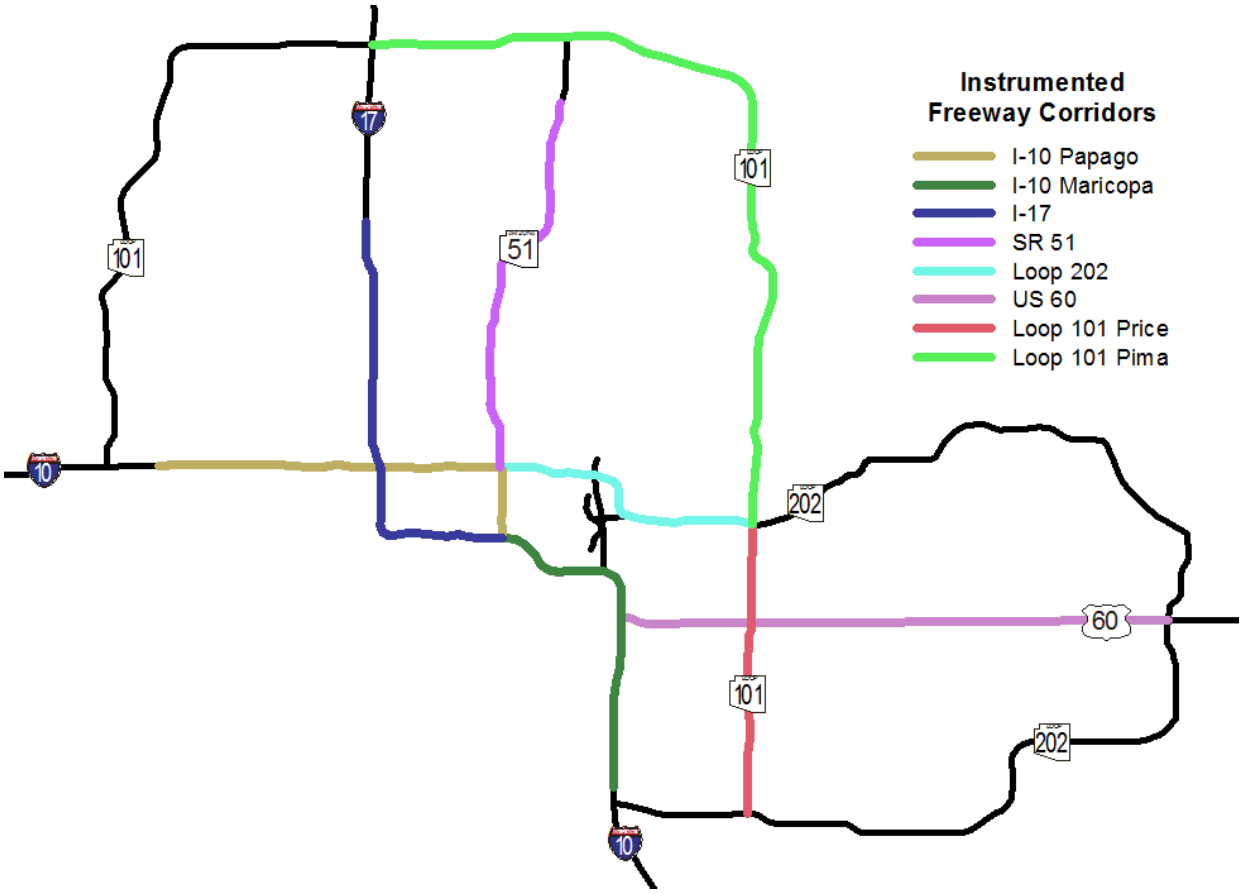
For the arterial system, MAG collects traffic data at over 770 stations using machine counts. Data is collected on weekdays every three to four years, over a 48-hour time period, and aggregated by 15 minute, hour, peak period, and 24 hours. Counts are conducted by direction at mid-block locations or at intersection approaches throughout the region. Data from the MAG count program undergoes a variety of data quality control checks; count data collected from other jurisdictions/member agencies is usually subject to the same kind of quality control checks. Since 2010 MAG has developed a web-based Traffic Data Management System which is a repository of all available traffic counts, turning movement counts and travel time databases.

Travel Time Data: Travel Time is among the measures that are most meaningful to travelers and system managers alike, since it relates to their experience of everyday travel. The Travel Time Index is a measure of average conditions that tells one how much longer, on average, travel times are during congestion compared to during light traffic. For example, a value of 1.30 TTI means that a 20 minute trip at free flow speeds takes 30% longer, or 26 minutes in the peak hours.

Figure 9-1 and Table 9-2 respectively depict the location of the regional freeway segments and the calculated commuting Travel Time Index for the a.m. and p.m. commuting peak periods on the instrumented freeway corridors based on 2010 and 2011 ADOT FMS Data. It can be observed that the 2010 TTI peak period values have slightly decreased in 2011 for most freeway corridors in the Phoenix region. This is likely due to a combination of factors related to the slow and uneven economic recovery across our region as well as the additional capacity built on several corridors on the system as part of the RTP. It should be noted that the enhanced ADOT Traffic Operations Center monitoring capabilities and the Dynamic Messaging System DMS on the urban freeways introduced with a pilot program in 2008, have since provided additional operational benefits to the travelling public which resulted in measurable mitigation of recurring congestion levels.

Speed Data: Currently, the two principal, most comprehensive sources of speed data for the MAG region are the private sector data bases being acquired by MAG starting in 2010, and ADOT freeway management system (FMS) permanent count detector data. The source for private sector traffic data is mainly GPS-equipped vehicles and other mobile consumer devices. The significant benefit to these products is their consistency in reporting, as well as the full coverage of the MAG freeway and major arterial network. Speed data is also available through the ADOT FMS, and the ADOT Transportation Planning Division traffic detector stations.

FIG. 9-1
SELECTED FREEWAY CORRIDORS



Tables 9-3 and 9-4 depict changes in average speed for all freeway corridors monitored by ADOT'S FMS System between 2009 and 2010. For these two years, we can observe that major facilities have generally maintained their average speeds, with changes fluctuating between two and five miles per hour with the exception of Eastbound SR-202 between SR-51 and SR-101, which experienced an increase in PM peak speeds between 2009 and 2010. Also, Southbound SR-101 between SR 202 and US 60 shows a difference of 7.5 mph between 2009 and 2010 during the PM peak period. Significant differences can exist in the consistency of valid data for individual detector locations. These corridors showing a difference in speed greater than 5 miles per hour are consequently the corridors with significant data for one or both years. Additionally, an upgrade to detector station controller units and associated software took place in 2010 and may account for some trending differences between these two years.

TABLE 9-2
TRAVEL TIME INDEX FOR SELECTED FREEWAY CORRIDORS

Freeway	Direction	From	To	AM Peak Period TTI			PM Peak Period TTI		
				2010	2011	% change	2010	2011	% change
I-10 Papago	EB	83rd Avenue	I−17 Split	1.33	1.23	-8%	1.08	1.11	3%
	WB	I−17 Split	83rd Avenue	1.09	1.07	-2%	1.53	1.42	-7%
I-10 Maricopa	NB	Chandler Blvd	I−17 Split	1.27	1.05	-17%	1.18	1.25	6%
	SB	I−17 Split	Chandler Blvd	1.08	1.17	8%	1.43	1.05	-27%
I-17	NB	I−17 Split	Peoria Avenue	0.96	0.91	-5%	1.17	1.14	-3%
	SB	Peoria Avenue	I−17 Split	1.07	1.03	-4%	0.95	0.90	-5%
SR 51	NB	I−10/Loop 202	Bell Road	0.86	0.80	-7%	0.92	0.87	-5%
	SB	Bell Road	I−10/Loop 202	0.96	0.93	-3%	0.89	0.83	-7%
Loop 202	EB	I−10/SR 51	Loop 101	1.10	0.98	-11%	1.23	1.04	-15%
	WB	Loop 101	I−10/SR 51	1.22	1.21	-1%	1.25	1.13	-10%
US 60	EB	I−10	Val Vista Dr.	1.04	1.01	-3%	1.08	1.05	-3%
	WB	Val Vista Dr.	I−10	1.08	1.08	0%	1.02	0.98	-4%
Loop 101 Price	NB	Loop 202 Santan	Loop 202 Red Mountain	1.28	1.20	-6%	1.01	0.96	-5%
	SB	Loop 202 Red Mountain	Loop 202 Santan	1.00	0.90	-10%	1.51	1.28	-15%
Loop 101 Pima	NB	Loop 202 Red Mountain	Pima Rd.	1.13	1.10	-3%	1.07	1.07	0%
	SB	Pima Rd.	Loop 202 Red Mountain	1.02	0.99	-3%	1.23	1.21	-2%
Loop 101 Pima	EB	Pima Rd.	I-17	1.33	1.25	-6%	1.06	1.02	-4%
	WB	I-17	Pima Rd.	1.07	1.00	-7%	1.27	1.27	0%

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.

Modeling Scenarios: For the analysis presented in this chapter, three network scenarios were modeled to assess potential future conditions on the transportation system in the region.

- 2010 Current Year Scenario - For this scenario the highway, arterial and transit networks reflect the base year 2010. This network reflects conditions after implementing a number of projects identified in the RTP, as well as 2010 travel demand. The socio-economic data that generated the travel demand for this scenario is based on the 2007 Update to the Socioeconomic Projections.

TABLE 9-3 (Source: ADOT FMS)
AVERAGE AM PEAK PERIOD SPEED FOR SELECTED FREEWAY CORRIDORS

Freeway Corridor	Dir	From	To	Average AM Peak Period Speed (mph)					
				General-purpose Lanes			HOV Lanes		
				2009	2010	% Change	2009	2010	% Change
I–10 Papago	EB	83rd Avenue	I–17	51.8	49.8	-3.8%	56.1	53.4	-4.8%
	WB	I–17	83rd Avenue	60.0	60.4	0.6%	61.2	61.8	0.9%
I–10 Papago	EB	I–17	SR 51/Loop 202	52.4	53.5	2.0%	62.6	62.5	-0.2%
	WB	SR 51/Loop 202	I–17	57.1	58.5	2.5%	64.0	65.8	2.7%
I–10 Maricopa	EB	SR 51/Loop 202	U.S. 60	60.9	61.5	1.0%	64.8	66.7	2.9%
	WB	U.S. 60	SR 51/Loop 202	58.3	57.4	-1.5%	60.8	59.7	-1.8%
I–10 Maricopa	EB	U.S. 60	Chandler Blvd	63.3	64.7	2.3%	67.4	68.3	1.2%
	WB	Chandler Blvd	U.S. 60	42.7	43.2	1.2%	59.7	58.7	-1.7%
I–17	NB	Maricopa TI	I–10	57.6	58.5	1.7%	not available	not available	not available
	SB	I–10	Maricopa TI	53.9	53.6	-0.6%	not available	not available	not available
I–17	NB	I–10	Peoria Ave.	57.1	58.0	1.6%	62.8	61.3	-2.4%
	SB	Peoria Ave.	I–10	50.7	50.3	-0.8%	59.8	60.2	0.8%
SR 51	NB	I–10/Loop 202	Glendale Avenue	61.8	62.6	1.3%	66.9	66.9	0.1%
	SB	Glendale Avenue	I–10/Loop 202	53.7	54.8	2.1%	58.8	58.9	0.2%
SR 51	NB	Glendale Avenue	Bell Road	64.2	65.1	1.4%	61.2	62.1	1.4%
	SB	Bell Road	Glendale Avenue	60.6	61.2	1.0%	65.1	65.7	0.9%
Loop 202	EB	I–10/SR 51	Loop 101	58.6	63.5	8.4%	62.8	not available	not available
	WB	Loop 101	I–10/SR 51	53.8	54.9	2.0%	62.1	63.7	2.5%
U.S. 60	EB	I–10	Loop 101	57.6	60.6	5.2%	62.0	61.5	-0.7%
	WB	Loop 101	I–10	48.4	53.3	10.1%	60.8	not available	not available
U.S. 60	EB	Loop 101	Val Vista Dr.	59.6	60.9	2.1%	62.6	61.7	-1.5%
	WB	Val Vista Dr.	Loop 101	58.8	59.3	0.8%	62.3	62.3	0.0%
U.S. 60	EB	Val Vista Dr.	Loop 202	64.8	65.7	1.4%	68.7	64.1	-6.7%
	WB	Loop 202	Val Vista Dr.	63.6	64.1	0.7%	68.0	68.1	0.2%
SR 143	NB	I–10	Loop 202/ McDowell	53.5	54.6	2.0%	not available	not available	not available
	SB	Loop 202/ McDowell	I–10	54.6	55.9	2.5%	not available	not available	not available
Loop 101	NB	Loop 202 Santan	U.S. 60	54.2	not available	not available	not available	not available	not available
	SB	U.S. 60	Loop 202 Santan	61.1	not available	na	not available	not available	not available
Loop 101	NB	U.S. 60	Loop 202 Red Mountain	52.5	53.0	1.0%	not available	63.9	not available
	SB	Loop 202 Red Mountain	U.S. 60	60.3	64.8	7.5%	not available	69.7	not available
Loop 101	NB	Loop 202 Red Mountain	90th St.	not available	55.4	not available	not available	63.9	not available
	SB	90th St.	Loop 202 Red Mountain	not available	63.4	not available	not available	70.0	not available
Loop 101	NB	90th St.	Pima Rd.	not available	62.7	not available	not available	66.6	not available
	SB	Pima Rd.	90th St.	not available	64.0	not available	not available	70.1	not available
Loop 101	EB	Pima Rd.	SR 51	not available	60.9	not available	not available	68.5	not available
	WB	SR 51	Pima Rd.	not available	65.9	not available	not available	70.3	not available
Loop 101	EB	SR 51	I-17	not available	45.1	not available	not available	not available	not available
	WB	I-17	SR 51	not available	65.0	not available	not available	not available	not available

TABLE 9-4 (Source: ADOT FMS)
AVERAGE PM PEAK PERIOD SPEED FOR SELECTED FREEWAY CORRIDORS

Freeway Corridor	Dir	From	To	Average PM Peak Period Speed (mph)					
				General-purpose Lanes			HOV Lanes		
				2009	2010	% Change	2009	2010	% Change
I–10 Papago	EB	83rd Avenue	I–17	61.9	61.8	0.0%	63.0	61.7	-2.0%
	WB	I–17	83rd Avenue	54.0	54.1	0.3%	58.1	58.6	0.9%
I–10 Papago	EB	I–17	SR 51/Loop 202	56.4	56.9	0.9%	62.9	63.5	0.9%
	WB	SR 51/Loop 202	I–17	40.0	37.5	-6.3%	49.3	47.3	-4.1%
I–10 Maricopa	EB	SR 51/Loop 202	U.S. 60	41.1	44.4	8.2%	48.2	51.4	6.5%
	WB	U.S. 60	SR 51/Loop 202	61.2	61.5	0.5%	62.9	62.4	-0.8%
I–10 Maricopa	EB	U.S. 60	Chandler Blvd	52.0	56.7	9.0%	61.5	63.0	2.5%
	WB	Chandler Blvd	U.S. 60	59.6	60.3	1.2%	68.7	67.1	-2.3%
I–17	NB	Maricopa TI	I–10	50.8	50.9	0.2%	not available	not available	not available
	SB	I–10	Maricopa TI	56.6	57.5	1.4%	not available	not available	not available
I–17	NB	I–10	Peoria Ave.	48.0	48.6	1.1%	57.1	55.5	-2.9%
	SB	Peoria Ave.	I–10	55.2	56.2	1.8%	61.2	62.3	1.9%
SR 51	NB	I–10/Loop 202	Glendale Avenue	56.3	55.8	-0.8%	65.0	65.0	0.1%
	SB	Glendale Avenue	I–10/Loop 202	56.3	57.6	2.3%	60.3	60.5	0.4%
SR 51	NB	Glendale Avenue	Bell Road	63.4	64.3	1.3%	61.1	62.1	1.8%
	SB	Bell Road	Glendale Avenue	63.7	64.6	1.4%	66.5	67.1	0.9%
Loop 202	EB	I–10/SR 51	Loop 101	48.7	62.8	29.0%	57.0	not available	not available
	WB	Loop 101	I–10/SR 51	56.4	54.7	-3.0%	63.0	62.9	-0.1%
U.S. 60	EB	I–10	Loop 101	52.1	57.6	10.6%	60.2	62.7	4.2%
	WB	Loop 101	I–10	61.1	62.4	2.1%	64.2	not available	not available
U.S. 60	EB	Loop 101	Val Vista Dr.	58.9	59.5	0.9%	63.9	62.9	-1.5%
	WB	Val Vista Dr.	Loop 101	61.9	62.4	0.8%	61.8	62.2	0.7%
U.S. 60	EB	Val Vista Dr.	Loop 202	65.6	66.3	1.1%	70.3	68.8	-2.1%
	WB	Loop 202	Val Vista Dr.	63.0	63.6	0.9%	66.4	66.6	0.3%
SR 143	NB	I–10	Loop 202/ McDowell	53.9	55.0	2.1%	not available	not available	not available
	SB	Loop 202/ McDowell	I–10	51.6	53.9	4.6%	not available	not available	0.0
Loop 101	NB	Loop 202 Santan	U.S. 60	61.0	not available	not available	not available	not available	not available
	SB	U.S. 60	Loop 202 Santan	56.5	not available	not available	not available	not available	not available
Loop 101	NB	U.S. 60	Loop 202 Red Mountain	59.8	63.0	5.4%	not available	68.6	not available
	SB	Loop 202 Red Mountain	U.S. 60	40.0	47.5	18.8%	not available	58.4	not available
Loop 101	NB	Loop 202 Red Mountain	90th St.	not available	59.9	not available	not available	66.4	not available
	SB	90th St.	Loop 202 Red Mountain	not available	52.0	not available	not available	63.6	not available
Loop 101	NB	90th St.	Pima Rd.	not available	61.7	not available	not available	66.5	not available
	SB	Pima Rd.	90th St.	not available	63.6	not available	not available	69.9	not available
Loop 101	EB	Pima Rd.	SR 51	not available	64.3	not available	not available	70.0	not available
	WB	SR 51	Pima Rd.	not available	55.6	not available	not available	66.1	not available
Loop 101	EB	SR 51	I-17	not available	59.6	not available	not available	not available	not available
	WB	I-17	SR 51	not available	52.3	not available	not available	not available	not available

- 2031 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 2031

- 2031 No-Build Scenario - The purpose of this scenario is to quantify the performance of the system without including the RTP major investments and assess the impact on levels of service. This scenario uses the same socioeconomic data for 2031 as that used for the RTP scenario, but does not include the regionally funded freeway 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 2010 Current Base Year, the 2031 RTP and the 2031 No-Build. All data is for the Maricopa County portion of the MAG transportation modeling area. Table 9-5 provides a comparison of key system level parameters and performance measures for the three scenarios that were modeled.

- Supply Measures - Two measures of the supply of roadway capacity in the region are included in Table 9-5: lanes miles and capacity miles. As shown, there is an increase of approximately 42 percent in freeway capacity between the 2010 Base Year and the 2031 RTP. Arterial capacity miles for the RTP, increases significantly by approximately 74 percent as compared to the Base 2010 Year network. For the No-Build scenario, the arterial and freeway capacities are the same as the 2010 Base Year.

- Demand Measures - The demand measure identified in Table 9-5 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 9-5. Comparing the 2010 Base Year and the 2031 RTP, a 63 percent VMT increase is observed on freeways and 59 percent on arterials. For the No-Build scenario, the VMT increases are 35 percent and 61 percent, respectively, reflecting the lack of facility improvements.

- Level of Service (LOS) Measures **-** A number of LOS measures are included in Table 9-5 for the three modeled scenarios, including congestion on freeways, congested VMT, and vehicle hours of delay. As noted previously, congested freeway segments are those with LOS E-F, and delay represents amount of extra travel time due to congestion.

TABLE 9-5
ROADWAY PERFORMANCE MEASURES FROM MAG MODEL

	Scenario		
Measures	**2010**	**2031 RTP**	**2031 No Build**
Population	4,431,503	6,466,372	6,466,372
Supply Measures			
Lane-Miles			
Freeways	2,037	2,891	2,037
Arterials	10,347	17,840	10,347
Capacity Miles			
Freeways	61,813,509	88,021,218	61,813,509
Arterials	104,657,400	182,123,345	104,657,400
Demand Measures			
Daily Vehicle-Miles (VMT)*			
Freeways	37,173,557	60,585,670	50,256,627
Arterials	45,263,534	71,921,334	72,684,899
Level of Service Measures			
Congested Lane-Miles			
Freeways	364	629	943
Arterials	447	811	2,203
% Congested Lane-Miles			
Freeways	17.9	21.8	46.3
Arterials	4.3	4.5	21.3
Daily Congested VMT			
Freeways	10,798,182	18,827,567	30,087,200
Arterials	4,608,815	8,727,030	26,430,634
% Daily Congested VMT			
Freeways	29.0	31.1	59.9
Arterials	10.2	12.1	36.4
Total Vehicle Hours of Delay			
Hours of Delay	516,677	866,380	1,537,348
Hrs of. Delay per 1000 VMT	6.3	6.7	12.5

Source: MAG Transportation Model; Maricopa County portion of modeling area.
*Note: VMT is calculated for facilities included in the Maricopa County portion of the MAG Modeling Area

A review of Table 9-5 indicates that, while the number of lane miles of congested freeways increases by 73 percent between the 2010 Base Year and the 2031 RTP, the portion of total lane miles that are congested increases by only 21 percent. When comparing the 2010 Base Year to the No Build scenario, the percentage of congested freeway lane miles increases by 159 percent. The total vehicle hours of delay experiences an increase of

68 percent between the 2010 Base Year and the 2031 RTP, but dramatically increases by 198 percent under the No Build scenario. Clearly, the freeway capacity added in the RTP helps significantly to mitigate the effects of a growing population. For arterials, the percentage of congested lane miles for the RTP does not show significant increases compared to the 2010 Base Year. This is, in part, a consequence of the projected increase of arterial lane miles between the 2010 Base and the RTP. For the 2031 No Build scenario, the percent of congested arterial lane miles increases to five times the value of 2010.

A similar pattern occurs for the percentage of daily congested VMT on arterials. 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 6 percent between the 2010 Base Year and the 2031 RTP, but dramatically increases by 98 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 also developed initial performance targets that allow comparison between performance expectations and actual performance. These performance measures and performance targets are being incorporated into the TPR. As plan implementation continues, targets are reviewed, refined and indexed to inflation as appropriate.

The SEES framework performance targets 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 (SEES) are listed in Tables 9-6 through 9-8. It is important to note that this year's update includes targets for LRT, since the system has been operational starting in December of 2008.

Tables 9-6 through 9-8 also include actual operating results, where available, from the 2008, 2009 and 2010 and 2011 Transit Performance Reports (TPR). The data presented is based on the findings from the SEES and other data available at this time. The modes covered by the TPR includes Fixed Route bus, Paratransit, and 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 corridor 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 consolidates the data collection efforts related to system performance and develops 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 continuously provide the public with timely and relevant information on the performance of the multi-modal transportation system. 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 to support performance measurement activities has been collected and state-of-the-art modeling capabilities are in place.

A Performance Measurement Framework has been developed with the participation of MAG's member agencies, and will continue to be used for periodic reporting as the implementation of the RTP moves forward. 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 developed an update to the Congestion Management Process in 2010 to coordinate results and implementation of strategies. Based on the multitude of observed and archived data sources, as well as input from the Transit Performance Report, MAG will publish semi-annual performance reports in various formats including hard-copy, web-based, map and interactive dashboards.

TABLE 9-6
FIXED ROUTE BUS PERFORMANCE MEASURES (SYSTEM-WIDE)

Measure	Target	2008 Results	2009 Results	2010 Results	2011 Results
Cost Efficiency/ Effectiveness					
Farebox Recovery Ratio	25.0%	22.4%	22.3%	24.1%	22.0%
Operating Cost per Boarding	$2.52	$3.05	$3.00	$3.50	$3.77
Subsidy (Net Operating Cost per Boarding)	$1.90	$2.37	$2.33	$2.66	$2.94
Operating Cost per Revenue Mile	$5.39	$5.61	$5.75	$5.90	$7.08
Average Fare	$0.73	$0.68	$0.67	$0.84	$0.83
Service Effectiveness					
Annual Increase in Total Boardings	3.00%	3.50%	9.00%	-15.22%	-1.37%
Annual Increase in Average Boardings (Weekday/Sat., /Sun.)	3.0%, 3.0%, 3.0%	3.3%, 3.8%, 12.1%	7.5%, 7.5%, . 13.4%	-14.08%, -14.08%, -16.58%	1.24%, -1.77%, 3.82%
Avg. Boardings per Revenue Mile	2.10	1.84	2.02	1.69	1.88

Sources: Valley Metro Transit Report and Valley Metro Fact Sheet

TABLE 9-7
PARATRANSIT PERFORMANCE MEASURES

Measure	Target	2008 Results	2009 Results	2010 Results	2011 Results
Cost Efficiency/ Effectiveness					
Farebox Recovery Ratio	5.00%	4.00%	4.10%	6.30%	6.80%
Operating Cost per Boarding	$31.03	$35.33	$36.44	$36.99	$37.72
Subsidy (Net Operating Cost per Boarding)	$29.52	$33.90	$34.95	$34.69	$35.17
Operating Cost per Revenue Hour	$54.68	$59.04	$60.70	$60.15	$68.26
Service Effectiveness					
Annual Increase in Total Boardings	3.00%	-2.10%	-3.30%	-11.05%	3.00%
Boardings per Revenue Hour	1.76	1.67	1.67	1.63	1.81
ADA On-time Performance	90.00%	94.70%	96.08%	97.35%	97.39%

Sources: Valley Metro Transit Report and Valley Metro Fact Sheet

TABLE 9-8
LIGHT RAIL TRANSIT (LRT) PERFORMANCE MEASURES

Measure	Target	Actual FY 09 July 1, 2008 thru June 30, 2009	Actual FY 10 July 1, 2009 thru June 30, 2010	Actual FY 11 July 1, 2010 thru June 30, 2011
Cost Efficiency/ Effectiveness				
Farebox Recovery Ratio	25.00%	21.22%	27.99%	33.00%
Operating Cost per Boarding	$3.19	$2.85	$2.72	$2.42
Subsidy (Net Operating Cost per Boarding)	$2.34	$2.24	$1.96	$1.62
Cost Per Revenue Mile	$16.19	$11.66	$12.43	$12.90
Average Fare	$0.86	$0.60	$0.76	$0.80
Service Effectiveness				
Annual Total Boardings	7,827,000	5,580,857	12,112,738	12,793,529
Boardings Average Weekday	26,090	No data	38,098	39,573
Boardings Average Saturday	20,800	No data	27,779	30,104
Boardings Average Sunday/Holiday	11,267	No data	16,801	20,274
Boardings per Vehicle Revenue Mile*	3.94	No data	4.57	5.32
Boardings per Revenue Mile	8.04	4.10	4.57	5.32
Safety Incidents per 100,000 Vehicle Miles	N/A	0.16	0.41	0.25**
Security Incidents per "x" Boardings	N/A	0	0	0
Complaints per "x" Boardings	28	No data	No data	No data
On-Time Performance	95.00%	93.90%	95.80%	97.50%
Miles Between Mechanical Failures	25,000	No data	11,738	20,557**
Customer Satisfaction	89.00%	74.00%	No data	No data

* Performance indicator is computed using revenue mile for 2011.

**Information not available for 2011 Vehicle Miles; calculated using revenue miles.

Sources: Valley Metro Transit Report and Valley Metro Fact Sheet

CHAPTER TEN

PERFORMANCE AUDIT OF THE REGIONAL TRANSPORTATION PLAN

Arizona Revised Statutes (ARS 28-6313) specifies that, 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. In 2010, the Auditor General contracted with an independent auditor to conduct the performance audit, and the results of the audit were released in report form in the *Performance Audit of the Maricopa County Regional Transportation Plan, December 21, 2011.*

10.1 KEY AUDIT REQUIREMENTS AND FINDINGS

One key requirement of the performance audit of the regional transportation plan as stated in Arizona legislation is that:

> "…the audit shall review past expenditures of the regional transportation plan and examine the performance of the system in relieving congestion and improving mobility."

Relative to this audit requirement, the Detailed Executive Summary of the 2011 audit report states that:

> "…Our review also evaluated the impact of project changes against budgets and schedules to actual expenditures and completion dates and found significant variances. Although we did not reevaluate the appropriateness of transportation engineer experts' technical design and scope estimates, we found explanations for changes were reasonably supported and documented in project files".
>
> "While success in meeting performance targets for freeway and arterial projects or corridors could not be measured, we found that transit performance is strong under the current plan - for instance, the light rail element of the plan has far surpassed performance expectations."
>
> (Pages 5 & 6 – Detailed Executive Summary, Performance Audit of the Maricopa County Regional Transportation Plan, December 21, 2010.)

A second key requirement of the performance audit of the regional transportation plan as stated in Arizona legislation is that:

> "…the audit shall make recommendations regarding whether further implementation of a project or transportation system is warranted, warranted with modification, or not warranted."

Relative to this audit requirement, the Detailed Executive Summary of the 2011 audit report states that:

> "Based on that review of performance data and other available documentation, we found no substantial evidence to warrant drastic modifications to the transportation system or specific projects."
>
> "As a result, we believe the RTP Partners should continue to implement the current transportation system and strive to continually reassess system performance to make modifications as needed."
>
> (Pages 5 & 6 – Detailed Executive Summary, Performance Audit of the Maricopa County Regional Transportation Plan, December 21, 2010.)

10.2 AUDIT RECOMMENDATIONS

In addition to the key findings cited above, the audit provided 27 recommendations aimed at more efficient and effective implementation of the RTP, as well as stronger accountability for the performance of the plan. Several of the more significant recommendations* are listed below:

- Establish and quantify what the MAG Regional Council, in collaboration with its partners, expects to achieve through implementation of the RTP—this includes setting targets, building baselines for performance, and formally analyzing and measuring all available performance data against the set baselines at the system, corridor, and project levels to insert more accountability into the process.

- Communicate project and system performance results in meeting goals and targets of the RTP to committees and the public on a quarterly basis, at a minimum.

- Continue to implement the current transportation system and strive to continually reassess system performance to make modifications as necessary.

- Create a "report card" feature to provide quick, 1-page project snapshots summarizing project budget and schedule project performance measures

and progress toward targets, and highlights of project changes to scope, schedule, or cost.

- Memorialize rationale for recommendations and impact on congestion, mobility, and safety behind project reprioritization decisions and program changes to ensure documentation exists, linking projects changes suggested with an assessment or ranking against the formal priority criteria established.

- Develop and use a performance based model as part of project change and reprioritization processes on a go forward basis to enhance both transparency of the process and accountability to legislative mandates and the public.

- Summarize and communicate data to MAG oversight committees on options available and alternatives considered, risk and opportunities for each alternative, impacts of each alternative related to congestion or performance such as mobility and safety, and rationale behind final recommendations.

- Continue efforts to develop a user-friendly guide book providing a public "road map" clarifying how the public can influence transportation projects, at what points input can be provided in the RTP development and update process, and where citizens can go to get information.

- Strengthen oversight by fully utilizing the MAG Transportation Policy Committee in a stronger and more proactive leadership role in setting the expectations for RTP-related activities. Additionally, reaffirm the role of the Citizens' Transportation Oversight Committee and increase its effectiveness through several suggested changes.

- Continue to investigate cost efficiencies that could result from combining RPTA and METRO operations, and implement measures as soon as practical to realize maximum value from such initiatives. Also, work towards realizing more benefits from regionalizing bus transit activities by strengthening the regional entity role and implementing regional activities that have potential for cost savings or better outcomes for riders such as route scheduling, fleet planning and purchasing, fare inspection and collection, coordinated automated tools, and regional service hearings.

*(Pages 7 & 8 – Detailed Executive Summary, Performance Audit of the Maricopa County Regional Transportation Plan, December 21, 2010.)

10.3 AGENCY RESPONSES TO RECOMMENDATIONS

Arizona Revised Statutes (ARS 28-6313) states that within forty-five days after the release of the audit, the Regional Public Transportation Authority, the Citizens Transportation Oversight Committee, the State Transportation Board, and the County Board of Supervisors shall submit recommendations to the

Transportation Policy Committee regarding the implementation of the audit findings. These agencies responded to the Transportation Policy Committee that they agree, or agree with modifications, with the audit recommendations. The one exception was that the County Board of Supervisors did not agree with the recommendation to adjust the MAG Transportation Policy Committee membership requirements to include RPTA and METRO transit representatives, since that is at the discretion of the state legislature. While not required to respond formally to the audit recommendations, MAG staff prepared an implementation plan to address recommendations directed at the agency.

Statues also require MAG to hold a public hearing on the audit findings and recommendations within forty-five days after the audit's release. This hearing was held by MAG on January 18, 2012 at the MAG offices.

On June 25, 2012, the Maricopa Association of Governments (MAG), the Arizona Department of Transportation (ADOT), the Regional Public Transportation Authority (RPTA), and METRO Rail provided a combined, detailed written assessment of the efforts made to date in implementing the audit recommendations. This included supporting material, covering ongoing efforts in all implementation areas. The combined response illustrates the continuing effort among the agencies to collaborate on a sound implementation plan to continue improving the successful delivery of the programs that comprise the RTP.

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, FY 2027-2031
(2012 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construction	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
	SR 30 (I-10 Reliever)											
F1	SR 85 to Loop 303	0.0	0.0	0.0	0.0	0.0	0.0	192.7	192.7	2031	11.0	Final construction moved beyond FY 2026 in FY 2010.
F2	Loop 303 to Loop 202	0.0	15.0	0.0	15.0	28.3	43.3	1,341.2	1,384.5	2031	13.0	Final construction moved beyond FY 2026 in FY 2010.
	Subtotal	**0.0**	**15.0**	**0.0**	**15.0**	**28.3**	**43.3**	**1,533.9**	**1,577.2**		**24.0**	
	Loop 202 (South Mountain Freeway)											
F3	I-10 (West) to 51st Avenue	0.0	0.9	0.0	0.9	1,041.7	1,042.6	0.0	1,042.6	2019	10.0	
F4	51st Avenue to Loop 202/I-10	0.0	0.0	0.0	0.0	877.2	877.2	0.0	877.2	2018	12.0	
	Subtotal	**0.0**	**0.9**	**0.0**	**0.9**	**1,918.9**	**1,919.8**	**0.0**	**1,919.8**		**22.0**	
	Loop 303 (Estrella Freeway)											
F5	I-17 to US 60 (Grand Avenue)	27.5	7.5	187.8	222.8	91.5	314.3	284.0	598.3	2030	18.0	Interim roadway (Happy Valley Rd. to I-17) completed in FY 2011.
F6	US 60 (Grand Avenue) to I-10	44.8	152.1	143.9	340.8	821.9	1,162.7	80.0	1,242.7	2014/2027	15.0	Includes final phase of Northern Pkwy. T.I. and Grand Ave. T.I. in FY 2027.
F7	I-10 to I-10R/MC 85	0.0	0.0	0.0	0.0	240.2	240.2	85.8	326.0	2027	5.0	Initial construction in FY 2016.
	Subtotal	**72.3**	**159.6**	**331.7**	**563.6**	**1,153.6**	**1,717.2**	**449.8**	**2,167.0**		**38.0**	
	SR 24 (Gateway Freeway)											
F8	Loop 202 to Ellsworth Road	9.8	20.4	5.4	35.6	94.7	130.3	43.8	174.1	2027	2.0	Interim construction advanced to FY 2012; final construction moved beyond FY 2026 in FY 2010.
F9	Ellsworth Road to Meridian Road	0.0	0.0	0.0	0.0	58.8	58.8	157.8	216.6	2028	3.0	Final construction moved beyond FY 2026 in FY 2010.
	Subtotal	**9.8**	**20.4**	**5.4**	**35.6**	**153.5**	**189.1**	**201.6**	**390.7**		**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	0.0	0.0	46.6	46.6	2030		Acquisition moved beyond FY 2026.
F11	Right-of-Way Protection for SR 74 (US 60 to Loop 303)	0.0	0.0	0.0	0.0	18.7	18.7	26.1	44.8	2030		Acquisition moved beyond FY 2026.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**18.7**	**18.7**	**72.7**	**91.4**			
	Sky Harbor Expressway											
F12	Superior Ave. to University Dr.											Project deleted from program in FY 2008.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construction	Project Length (Centerline Miles)	Other Information
		Design	R/W	Construc.	Total							
	TOTAL	**82.1**	**195.9**	**337.1**	**615.1**	**3,273.0**	**3,888.1**	**2,258.0**	**6,146.1**			

TABLE A-2

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - WIDEN EXISTING FACILITIES: GENERAL PURPOSE LANES

EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
	I-10											
F20	SR 85 to Loop 303	2.5	0.0	26.5	29.0	5.1	34.1	40.0	74.1	2009/2028	12.0	Includes advancement of segment between Loop 303 and Verrado Way as ARRA project in FY 2009, and was completed in FY 2011. Final construction of remainder moved beyond FY 2026 in FY 2010.
F21	Loop 303 to Loop 101	8.2	1.7	127.5	137.4	11.3	148.7	0.0	148.7	2009	9.0	Includes projects F22, F70 and F71; inside widening completed in FY 2010; outside widening completed in FY 2011.
F22	Dysart Road to Loop 101											Combined with project F21.
F23	Loop 101 to I-17	0.0	0.0	0.0	0.0	88.2	88.2	0.0	88.2	2019	7.0	
F24	SR 51 to 32nd Street											Project limits redefined from SR-51 to 40th to cover SR-51 to 32nd St.; Project dropped from program in FY 2010 and designated as an illustrative project in the 2010 RTP Update.
F25	32nd Street to Loop 202/Santan	0.1	81.6	3.2	84.9	601.7	686.6	0.0	686.6	2024	11.0	Includes auxiliary lane project from Southern Ave. to SR 143. Project limits redefined from 40th St. to Baseline to cover 32nd St. to 202L/Santan.
F26	Baseline Road to Loop 202/Santan											Combined with F25
F27	Loop 202/Santan Freeway to Riggs Rd.	0.0	0.0	0.0	0.0	73.7	73.7	0.0	73.7	2021	6.0	Includes project F72.
	Subtotal	**10.8**	**83.3**	**157.2**	**251.3**	**780.0**	**1,031.3**	**40.0**	**1,071.3**			
	I-17											
F28	New River Road to Anthem Way	0.0	0.0	0.0	0.0	0.0	0.0	57.4	57.4	2028	3.0	Final construction moved beyond FY 2026 in FY 2010.

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
F29	Anthem Way to Carefree Highway	2.5	0.0	13.6	16.1	6.4	22.5	83.6	106.1	2009/2027	5.0	Includes project F73. Interim GP lane improvements were completed in FY 2010 as an ARRA project. Final construction of remainder moved beyond FY 2026 in FY 2010.
F30	Carefree Highway to Loop 101	12.8	117.0	172.2	302.0	0.0	302.0	0.0	302.0	2008	9.0	Includes project F74; project completed in FY 2010.
F31	Loop 101 to Arizona Canal	0.0	0.0	0.0	0.0	6.0	6.0	0.0	6.0	2024	6.0	Funding reduced as part of rebalancing in FY 2012.
F32	Arizona Canal to McDowell Road	0.0	0.0	0.0	0.0	385.0	385.0	0.0	385.0	2024	7.0	Funding reduced as part of rebalancing in FY 2012.
	Subtotal	**15.3**	**117.0**	**185.8**	**318.1**	**397.4**	**715.5**	**141.0**	**856.5**			
	Loop 101 (Agua Fria Freeway)											
F33	US 60/Grand Avenue to I-17	0.0	0.0	0.0	0.0	0.0	0.0	150.4	150.4	2029	12.0	Final construction moved beyond FY 2026 in FY 2010.
F34	I-10 to US 60/Grand Avenue	0.0	0.0	0.0	0.0	7.6	7.6	108.8	116.4	2027	10.0	Final construction moved beyond FY 2026 in FY 2010.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**7.6**	**7.6**	**259.2**	**266.8**			
	Loop 101 (Pima Freeway)											
F35	I-17 to SR 51	0.0	0.0	0.0	0.0	73.5	73.5	0.0	73.5	2024	7.0	
F36	SR 51 to Princess Drive	0.0	0.0	0.0	0.0	77.9	77.9	0.0	77.9	2021	6.0	
F37	Princess Drive to Shea Boulevard	0.0	0.0	0.0	0.0	56.4	56.4	0.0	56.4	2021	4.0	
F38	Shea Boulevard to Loop 202 (Red Mt.)	6.2	0.0	0.0	6.2	91.2	97.4	0.0	97.4	2014	11.0	
	Subtotal	**6.2**	**0.0**	**0.0**	**6.2**	**299.0**	**305.2**	**0.0**	**305.2**			
	Loop 101 (Price Freeway)											
F39	Baseline Road to Loop 202/Santan	0.0	0.0	0.0	0.0	53.4	53.4	0.0	53.4	2023	6.0	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**53.4**	**53.4**	**0.0**	**53.4**			
	Loop 202 (Red Mountain Freeway)											
F40	I-10/SR 51 to Loop 101 (Pima)	0.9	0.0	212.4	213.3	13.7	227.0	0.0	227.0	2008	9.0	Includes project F41; converted to design-build project in FY 2008; project completed in FY 2010.
F41	Rural Road to Loop 101 (EB & WB)											Combined with project F40.
F42	Loop 101 to Gilbert Road	0.0	0.0	0.0	0.0	74.6	74.6	0.0	74.6	2019	6.0	
F43	Gilbert Road to Higley Road	0.0	0.0	0.0	0.0	0.0	0.0	51.9	51.9	2028	5.0	Final construction moved beyond FY 2026 in FY 2010.

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars) Design	R/W	Construc.	Total	Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
F44	Higley Road to US 60/Superstition	0.0	0.0	0.0	0.0	0.0	0.0	108.3	108.3	2029	10.0	Final construction moved beyond FY 2026 in FY 2010.
	Subtotal	**0.9**	**0.0**	**212.4**	**213.3**	**88.3**	**301.6**	**160.2**	**461.8**			
	Loop 202 (Santan Freeway)											
F45	I-10 to Dobson Rd.	0.0	0.0	0.0	0.0	3.3	3.3	47.0	50.3	2027	5.0	Final construction moved beyond FY 2026 in FY 2010.
F46	Dobson Rd. to Val Vista Dr.	0.0	0.0	0.0	0.0	0.0	0.0	83.5	83.5	2029	7.0	Final construction moved beyond FY 2026 in FY 2010.
F47	Val Vista Road to US 60	0.0	0.0	0.0	0.0	0.0	0.0	104.0	104.0	2030	11.0	Final construction moved beyond FY 2026 in FY 2010.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**3.3**	**3.3**	**234.5**	**237.8**			
	SR 51 (Piestewa Freeway)											
F48	Loop 101/Pima to Shea Boulevard	0.0	0.0	0.0	0.0	4.0	4.0	56.2	60.2	2027	6.0	Final construction moved beyond FY 2026 in FY 2010.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**4.0**	**4.0**	**56.2**	**60.2**			
	SR 85											
F49	I-10 to I-8	2.5	2.1	79.8	84.4	62.4	146.8	0.0	146.8	2010	32.5	Includes project F50. Completed in FY 2011. Project at Gila Bend Phase II deleted as part of rebalancing in FY 2012.
	Subtotal	**2.5**	**2.1**	**79.8**	**84.4**	**62.4**	**146.8**	**0.0**	**146.8**			
	US 60 (Grand Avenue)											
F51	Loop 303 to Loop 101	3.9	0.9	22.9	27.7	65.2	92.9	0.0	92.9	2009/2016	10.0	Widening phase identified as an ARRA project for programming in FY 2009. Completed in FY 2011.
F52	Loop 101 to Van Buren Street	4.0	0.0	0.0	4.0	74.4	78.4	67.5	145.9	2030	11.0	Final construction moved beyond FY 2026 in FY 2010.
F53	99th Ave. to 83rd Ave.	0.6	0.0	8.7	9.3	1.3	10.6	0.0	10.6	2009	2.0	Designated as an ARRA project. Completed in FY 2011.
F54	71st Ave. to Grand Canal Bridge	0.0	0.0	3.0	3.0	1.0	4.0	0.0	4.0	2006	6.5	Project completed in FY 2008.
	Subtotal	**8.5**	**0.9**	**34.6**	**44.0**	**141.9**	**185.9**	**67.5**	**253.4**			
	US 60 (Superstition Freeway)											
F55	I-10 to Loop 101	0.0	0.0	26.0	26.0	0.0	26.0	0.0	26.0	2008	5.0	Project completed in FY 2010.
F56	Gilbert Rd. to Power Road	1.0	0.0	86.8	87.8	0.0	87.8	0.0	87.8	2006	6.0	Includes project F91. Project completed in FY 2007.
F57	Crismon Road to Meridian Road	0.0	0.0	0.0	0.0	28.4	28.4	0.0	28.4	2020	2.0	Includes project F92.
	Subtotal	**1.0**	**0.0**	**112.8**	**113.8**	**28.4**	**142.2**	**0.0**	**142.2**			

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
	US 93 (Wickenburg Bypass)											
F58	Wickenburg Bypass	0.0	0.0	34.4	34.4	7.5	41.9	0.0	41.9	2007	1.7	Project completed in FY 2010.
	Subtotal	**0.0**	**0.0**	**34.4**	**34.4**	**7.5**	**41.9**	**0.0**	**41.9**			
	SR 143 (Hohokam Expressway)											
F59	Sky Harbor Blvd. T.I.	4.9	0.0	17.2	22.1	2.4	24.5	0.0	24.5	2011	1.0	Project added to program in FY 2008. Completed mid-2012.
	Subtotal	**4.9**	**0.0**	**17.2**	**22.1**	**2.4**	**24.5**	**0.0**	**24.5**			
	TOTAL	**50.1**	**203.3**	**834.2**	**1,087.6**	**1,875.6**	**2,963.2**	**958.6**	**3,921.8**			

TABLE A-3

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - WIDEN EXISTING FACILITIES: HIGH OCCUPANCY VEHICLE LANES

EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
	I-10											
F70	Loop 303 to Dysart Road											Combined with project F21.
F71	Dysart Road to Loop 101											Combined with project F21.
F72	Loop 202/Santan to Riggs Road											Combined with project F27.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			
	I-17											
F73	Anthem Way to Carefree Highway											Combined with project F29.
F74	Carefree Highway to Loop 101											Combined with project F30.
F75	I-10 (West) to I-10 (East)	0.0	0.0	0.0	0.0	400.0	400.0	0.0	400.0	2025	7.0	Expanded to include GP lanes.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**400.0**	**400.0**	**0.0**	**400.0**			
	Loop 101 (Agua Fria Freeway)											
F76	I-10 to SR-51	0.0	0.0	104.2	104.2	8.0	112.2	0.0	112.2	2010	29.0	Includes F77 and F78. Project limits expanded from US 60 to I-17 to cover I-10 to SR 51. Design-build project.
F77	I-10 to US 60/Grand Avenue											Combined with F76.
	Subtotal	**0.0**	**0.0**	**104.2**	**104.2**	**8.0**	**112.2**	**0.0**	**112.2**			
	Loop 101 (Pima Freeway)											
F78	I-17 to SR 51 (Tatum)											Combined with F76.
F79	SR 51 (Tatum) to Princess Drive	1.3	0.0	16.0	17.3	1.5	18.8	0.0	18.8	2008	6.0	Project completed in FY 2010.
F80	Princess Drive to Loop 202 (Red Mt.)	5.7	0.0	56.1	61.8	0.0	61.8	0.0	61.8	2007	4.0	Project completed in FY 2009.
F81	Shea Boulevard to Loop 202											Combined with project F80.
	Subtotal	**7.0**	**0.0**	**72.1**	**79.1**	**1.5**	**80.6**	**0.0**	**80.6**			
	Loop 101 (Price Freeway)											
F82	Loop 202/Red Mountain to Loop 202/Santan	3.2	0.0	35.3	38.5	4.7	43.2	0.0	43.2	2008	10.0	Includes project F83. Project completed in FY 2010.
F83	Baseline to Loop 202/Santan											Combined with project F82
	Subtotal	**3.2**	**0.0**	**35.3**	**38.5**	**4.7**	**43.2**	**0.0**	**43.2**			

Map Code	Facility	Expenditures Through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
	Loop 202 (Red Mountain Freeway)											
F84	Loop 101 to Gilbert Road	3.0	0.0	23.0	26.0	0.8	26.8	0.0	26.8	2008	6.0	Project completed in FY 2010.
F85	Gilbert Road to Higley Road	0.0	0.0	0.0	0.0	18.1	18.1	0.0	18.1	2019	5.0	
F86	Higley Road to US 60/Superstition	0.0	0.0	0.0	0.0	34.5	34.5	0.0	34.5	2022	10.0	
	Subtotal	**3.0**	**0.0**	**23.0**	**26.0**	**53.4**	**79.4**	**0.0**	**79.4**			
	Loop 202 (Santan Freeway)											
F87	I-10 to Gilbert Road	0.0	0.0	94.5	94.5	13.6	108.1	0.0	108.1	2010	10.5	Includes project F128 and F129 and portion of F88. Project limits extended from I-10 to Dobson Rd. to cover I-10 to Gilbert Rd. Design-build project.
F88	Dobson Road to Val Vista Road											Project combined with F87 and F89.
F89	Gilbert Rd. to US 60 (Superstition)	0.0	0.0	0.0	0.0	50.2	50.2	0.0	50.2	2022	14.5	Includes portion of F88. Project limits extended from Val Vista Dr. to US 60 to cover Gilbert Rd. to US 60.
		0.0	**0.0**	**94.5**	**94.5**	**63.8**	**158.3**	**0.0**	**158.3**			
	SR 51 (Piestewa Freeway)											
F90	Loop 101/Pima to Shea Boulevard	0.2	0.0	48.0	48.2	2.9	51.1	0.0	51.1	2007	6.0	Includes project F130. Project completed in FY 2009.
	Subtotal	**0.2**	**0.0**	**48.0**	**48.2**	**2.9**	**51.1**	**0.0**	**51.1**			
	US 60 (Superstition Freeway)											
F91	Gilbert Road to Power Road											Combined with project F56.
F92	Crismon Road to Meridian Road											Combined with project F57.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			
	TOTAL	**13.4**	**0.0**	**377.1**	**390.5**	**534.3**	**924.8**	**0.0**	**924.8**			

TABLE A-4

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - NEW ARTERIAL INTERCHANGES ON EXISTING FACILITIES

EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
	I-10											
F100	Bullard Avenue	1.1	5.5	9.5	16.1	0.0	16.1	0.0	16.1	2007	N/A	Project completed in FY 2008.
F101	Chandler Heights	0.0	0.0	0.0	0.0	22.9	22.9	0.0	22.9	2022	N/A	
F102	El Mirage	0.0	0.0	0.0	0.0	20.3	20.3	0.0	20.3	2023	N/A	
F103	Perryville Road	0.0	0.8	0.0	0.8	24.3	25.1	0.0	25.1	2013	N/A	
F113	Sky Harbor West Access	0.0	0.0	0.0	0.0	50.6	50.6	0.0	50.6	2025	N/A	Project added to program in FY 2010.
	Subtotal	**1.1**	**6.3**	**9.5**	**16.9**	**118.1**	**135.0**	**0.0**	**135.0**			
	I-17											
F104	Dixileta Drive/Jomax Road	2.8	2.7	40.2	45.7	4.0	49.7	0.0	49.7	2007	N/A	Includes project F106. Project completed in FY 2009.
F105	Dove Valley Road	2.2	0.0	20.2	22.4	2.6	25.0	0.0	25.0	2009	N/A	Local advancement; project completed in FY 2010.
F106	Jomax Road											Combined with project F104.
	Subtotal	**5.0**	**2.7**	**60.4**	**68.1**	**6.6**	**74.7**	**0.0**	**74.7**			
	Loop 101 (Agua Fria Freeway)											
F107	Beardsley Road/Union Hills Drive	0.6	0.0	17.6	18.2	0.0	18.2	0.0	18.2	2009	N/A	Local advancement. Identified as an ARRA project. Completed in FY 2011.
F108	Bethany Home Road	1.5	0.0	8.1	9.6	0.0	9.6	0.0	9.6	2006	N/A	Project completed in FY 2008.
	Maryland Ave. (HOV Ramps)	0.0	0.0	0.0	0.0	14.5	14.5	0.0	14.5	2013	N/A	Design/build added to program in FY 2012.
	Subtotal	**2.1**	**0.0**	**25.7**	**27.8**	**0.0**	**27.8**	**0.0**	**27.8**			
	Loop 101 (Pima Freeway)											
F109	64th Street	2.2	1.1	24.1	27.4	4.0	31.4	0.0	31.4	2007	N/A	Project completed in FY 2009.
	Subtotal	**2.2**	**1.1**	**24.1**	**27.4**	**4.0**	**31.4**	**0.0**	**31.4**			
	Loop 202 (Red Mountain Freeway)											
F110	Mesa Drive (Ramps Only)	0.0	0.0	0.0	0.0	0.0	0.0	13.5	13.5	2030	N/A	Final construction moved beyond FY 2026 in FY 2010.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**13.5**	**13.5**			

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars) Design	R/W	Construc.	Total	Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
	US 60 (Superstition Freeway)											
F111	Lindsay Road (Half Interchange)	0.0	0.0	0.0	0.0	0.6	0.6	7.6	8.2	2027	N/A	Final construction moved beyond FY 2026 in FY 2010.
F112	Meridian Road (Half Interchange)	0.0	0.0	0.0	0.0	12.5	12.5	0.0	12.5	2013	N/A	
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**13.1**	**13.1**	**7.6**	**20.7**			
	Other Arterial Interchange Improvements											
	Deer Valley Road at I-17											Deleted from program in FY 2006.
	Higley Road at US 60	0.3	0.0	4.9	5.2	0.1	5.3	0.0	5.3	2007	N/A	Project completed in FY 2008.
	Ray Road at I-10	0.0	0.0	9.3	9.3	0.0	9.3	0.0	9.3	2006	N/A	Project completed in FY 2008.
	Carefree Highway at I-17	1.4	0.0	22.4	23.8	1.2	25.0	0.0	25.0	2007	N/A	Project completed in FY 2009.
	43rd Avenue at I-10	0.3	0.0	2.4	2.7	0.0	2.7	0.0	2.7	2007	N/A	Project completed in FY 2008.
	51st Avenue at I-10											Combined with 43rd Avenue.
	Avondale Blvd. at I-10	0.0	0.0	2.7	2.7	0.0	2.7	0.0	2.7	2010	N/A	Included in program in FY 2009. Completed in FY 2011.
	SR 347 at I-10	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.2	2008	N/A	Included in program in FY 2007
	Cactus Rd. at I-17	0.0	0.0	6.5	6.5	0.3	6.8	0.0	6.8	2006	N/A	Project completed in FY 2008.
	Thunderbird Rd at Loop 101	0.0	0.0	3.4	3.4	0.0	3.4	0.0	3.4	2008	N/A	Included in program in FY 2007; project completed in FY 2010.
	Olive Ave. at Loop 102	0.0	0.0	3.2	3.2	0.0	3.2	0.0	3.2	2009	N/A	Included in program in FY 2009.
	Chaparral Rd. at Loop 101	0.0	0.0	0.8	0.8	0.0	0.8	0.0	0.8	2010	N/A	Included in program in FY 2009. Completed in FY 2011.
	Subtotal	**2.0**	**0.0**	**55.6**	**57.6**	**1.8**	**59.4**	**0.0**	**59.4**			
	TOTAL	**12.4**	**10.1**	**175.3**	**197.8**	**143.6**	**341.4**	**21.1**	**362.5**			

TABLE A-5

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - NEW HOV RAMPS AT FREEWAY-TO-FREEWAY INTERCHANGES

EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Map Code	Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
		Design	R/W	Construc.	Total							
	Loop 101											
F125	I-10											Project dropped from program in FY 2010 and designated as an illustrative project in the 2010 RTP Update.
F126	I-17											Project dropped from program in FY 2010 and designated as an illustrative project in the 2010 RTP Update.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			
	Loop 202 (Red Mountain Freeway)											
F127	Red Mountain and US 60 (Superstition)	0.0	0.0	0.0	0.0	0.0	0.0	42.1	42.1	2029	N/A	Final construction moved beyond FY 2026 in FY 2010.
F128	Santan and I-10											Combined with project F87.
F129	Santan and Loop 101 / Price											Combined with project F87.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**42.1**	**42.1**			
	SR 51											
F130	Loop 101 / Pima										N/A	Combined with project F90.
	Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			
	TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**42.1**	**42.1**			

TABLE A-6

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - OPERATIONS, MAINTENANCE AND SYSTEMWIDE PROGRAMS EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)			Estimated Future Costs: FY 2013-2026 (2012 Dollars)	Total Estimated Cost: FY 2006-2026 (2012 and YOE Dollars)	Estimated Future Costs: FY 2027-2031 (2012 Dollars)	Total Estimated Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Implementation	Other Information
	Operating	Capital	Total						
Freeway Management System									
Freeway Management System	0.5	14.2	14.7	133.0	147.7	0.0	147.7	2013-2026	Includes all corridor-specific FMS projects, ramp meters, as well as systemwide FMS activities.
Subtotal	**0.5**	**14.2**	**14.7**	**133.0**	**147.7**	**0.0**	**147.7**		
Maintenance									
Maintenance (Landscaping, including restoration and litter pick-up)	64.5	0.0	64.5	192.2	256.7	82.5	339.2	2013-2026	
Subtotal	**64.5**	**0.0**	**64.5**	**192.2**	**256.7**	**82.5**	**339.2**		
Noise Mitigation									
Noise Mitigation (noise walls and quiet pavement).	0.0	56.9	56.9	41.3	98.2	120.0	218.2	2013-2026	Noise walls project completed in mid-2012.
Subtotal	**0.0**	**56.9**	**56.9**	**41.3**	**98.2**	**120.0**	**218.2**		
Systemwide									
Right-of-Way Plans and Titles, Property Management, Advanced R/W Acquisition	2.0	31.3	33.3	86.1	119.4	7.8	127.2	2013-2026	
Preliminary Engineering, Design Change Orders, Risk Management, and Miscel. Studies.	126.8	0.0	126.8	264.2	391.0	74.0	465.0	2013-2026	
Minor projects (park-n-ride lots, T.I. improvements, freeway service patrol, miscel. utilities & imprv.).	0.0	54.1	54.1	0.0	54.1	0.0	54.1	2013-2026	
Subtotal	**128.8**	**85.4**	**214.2**	**350.3**	**564.5**	**81.8**	**646.3**		
TOTAL	**193.8**	**156.5**	**350.3**	**716.8**	**1,067.1**	**284.3**	**1,351.4**		

TABLE A-7

FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - OTHER PROJECTS

EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Est. Future Costs: FY 2013-2026 (2012 Dollars)	Total Est. Cost: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY 2027-2031 (2012 Dollars)	Total Est. Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
	Design	R/W	Construc.	Total							
I-17											
Greenway Rd./Thunderbird Rd. (Drainage Improvements)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		N/A	Combined with Peoria Avenue.
Peoria Ave./Cactus Rd. (Drainage Improvements)	0.0	0.0	0.0	0.0	16.5	16.5	0.0	16.5	2022	N/A	Includeds Greenway/Thunderbird.
Bethany Home Rd. - Northern Ave., Alhambra District (Construction)	0.2	0.0	0.5	0.7	0.0	0.7	0.0	0.7	2011	N/A	
16th Street - Buckeye Rd.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2006	N/A	Project completed in FY 2008.
Buckeye Rd./Northbound On-Ramp (Construction)										N/A	Project deleted in FY 2006.
I-10 to Indian School Rd.	0.0	0.0	1.4	1.4	0.0	1.4	0.0	1.4	2010	N/A	Project added in FY 2010 (ARRA). Completed in FY 2011.
Subtotal	**0.2**	**0.0**	**1.9**	**2.1**	**16.5**	**18.6**	**0.0**	**18.6**			
US 60 (Superstition Freeway)											
Val Vista to Power (landscape)	0.0	0.0	4.9	4.9	0.1	5.0	0.0	5.0	2007	N/A	Included in program in FY 2006. Completed in FY 2009.
Subtotal	**0.0**	**0.0**	**4.9**	**4.9**	**0.1**	**5.0**	**0.0**	**5.0**			
SR 74											
Passing Lanes	0.0	0.0	5.5	5.5	0.4	5.9	0.0	5.9	2010	N/A	Included in program in FY 2006. Completed in FY 2011.
Subtotal	**0.0**	**0.0**	**5.5**	**5.5**	**0.4**	**5.9**	**0.0**	**5.9**			
SR 87											
Forest Boundary - New Four Peaks (Construction)	0.0	0.0	22.2	22.2	0.0	22.2	0.0	22.2	2007	N/A	Project completed in FY 2009.
MP 211.8 - MP 213.0	0.0	0.0	0.0	0.0	1.4	1.4	0.0	1.4	2010	N/A	Included in program in FY 2007.
New Four Peaks Road - Dos S South Ranch Road	2.3	0.0	12.7	15.0	0.1	15.1	0.0	15.1	2010	N/A	Included in program in FY 2007. Completed in FY 2011.
Subtotal	**2.3**	**0.0**	**34.9**	**37.2**	**1.5**	**38.7**	**0.0**	**38.7**			
SR 88											
Apache Trail (District Force Account)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2006	N/A	Project completed in FY 2007.
Fish Creek Hill	0.2	0.0	0.0	0.2	0.0	0.2	0.0	0.2		N/A	Dropped from program in FY 2010.
Subtotal	**0.2**	**0.0**	**0.0**	**0.2**	**0.0**	**0.2**	**0.0**	**0.2**			

Facility	Expenditures through FY 2012 (Year of Expenditure Dollars)				Est. Future Costs: FY 2013-2026 (2012 Dollars)	Total Est. Cost: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY 2027-2031 (2012 Dollars)	Total Est. Cost: FY 2006-2031 (2012 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
	Design	R/W	Construc.	Total							
Loop 101 (Agua Fria Freeway)											
I-10 - MC 85 (99th Avenue)	0.6	0.0	2.9	3.5	2.6	6.1	0.0	6.1	2010	N/A	Project completed in FY 2011.
Northern Ave. to 31st Ave. (Landscape)	0.0	0.0	0.0	0.0	1.5	1.5	0.0	1.5	2007	N/A	Project completed in FY 2008.
Skunk Crk. To Union Hills	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2007	N/A	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	0.0	9.7	2007	N/A	Project completed in FY 2008.
Northern Ave. To Grand Ave. (SB)	0.0	0.0	1.7	1.7	0.3	2.0	0.0	2.0	2010	N/A	Project added FY 2010 (ARRA). Completed in FY 2011.
51st Ave. to 35th Ave. (EB)	0.0	0.0	1.5	1.5	0.2	1.7	0.0	1.7	2010	N/A	Project added FY 2010 (ARRA). Completed in FY 2011.
Subtotal	**0.6**	**0.0**	**15.8**	**16.4**	**4.6**	**21.0**	**0.0**	**21.0**			
Loop 101 (Pima Freeway)											
Pima Road Extension (JPA)	0.0	0.0	0.0	0.0	3.9	3.9	0.0	3.9	2014	N/A	Included in program in FY 2008.
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**3.9**	**3.9**	**0.0**	**3.9**			
Loop 101 (Price Freeway)											
Balboa Dr., Multi-Use Path (Local)	0.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2015	N/A	
Galveston St. (Drainage)	0.0	0.0	0.0	0.0	2.1	2.1	0.0	2.1	2009	N/A	Included in program in FY 2009.
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**4.1**	**4.1**	**0.0**	**4.1**			
Loop 202 (Santan Freeway)											
Lindsey Rd. to Gilbert Rd., Multi-Use Path	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.5	2013	N/A	
Subtotal	**0.0**	**0.0**	**0.0**	**0.0**	**0.5**	**0.5**	**0.0**	**0.5**			
TOTAL	**3.3**	**0.0**	**63.0**	**66.3**	**31.6**	**97.9**	**0.0**	**97.9**			

TABLE A-8
FREEWAY/HIGHWAY LIFE CYCLE PROGRAM - SUMMARY TOTALS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031
(2012 and Year of Expenditure Dollars in Millions)

Facility	Expenditures through FY 2010 (Year of Expenditure Dollars)				Est. Future Costs: FY 2011-2026 (2010 Dollars)	Total Est. Cost: FY 2006-2026 (2010 and YOE Dollars)	Est. Future Costs: FY 2027-2031 (2010 Dollars)	Total Est. Cost: FY 2006-2031 (2010 and YOE Dollars)	FY Prgm. for Final Construc-tion	Project Length (Center-line Miles)	Other Information
	Design	R/W	Const.	Total							
SUMMARY TOTALS	**355.1**	**440.6**	**1,911.9**	**2,707.6**	**6,574.9**	**9,282.5**	**3,564.1**	**12,846.6**			

Appendix B

Arterial Street Life Cycle Program

TABLE B-1
ARTERIAL STREET LIFE CYCLE PROGRAM
REGIONAL FUNDING REIMBURSEMENTS: FY 2006-2026
(2012 and Year of Expenditure Dollars in Millions)

YOE	Year of Expenditure	CONST	Construction
FY	Fiscal Year	Expend	Expenditures
$	Dollars	Reimb	Reimbursement(s)

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
CHANDLER								
A1	**Arizona Ave/Chandler Blvd**	3.582	0.000	0.000	3.582	2006	0.25	Project Completed
A2	**Arizona Ave/Elliot Rd**	3.211	0.000	0.000	3.211	2006	0.25	Project Completed
A3	**Arizona Ave/Ray Rd**	3.464	0.000	0.000	3.464	2007	0.25	Project Completed
A4	**Arizona Ave: Ocotillo Rd to Hunt Highway**	0.000	4.433	3.018	7.451	2024	3.00	
A5	**Chandler Blvd/Alma School Rd**	0.475	2.872	0.942	4.289	2015	0.25	HSIP Recipient
A6	**Chandler Blvd/Dobson Rd**	2.500	0.000	0.000	2.500	2011	0.25	Project Completed
A7	**Chandler Blvd/Kyrene Rd**	0.000	0.000	3.776	3.776	2027	0.25	
A8	**Gilbert Rd: SR-202L to Hunt Hwy**	8.577	18.644	1.770	28.991	2019		
	Gilbert Rd: SR-202L/Germann to Queen Creek Rd	6.752	0.000	0.000	6.752	2010	1.25	Project Completed
	Gilbert Rd: Queen Creek Rd to Hunt Hwy	1.826	1.418	0.000	3.244	N/A	N/A	Design and ROW project only.
	Gilbert Rd: Queen Creek Rd to Ocotillo Rd	0.000	7.537	0.000	7.537	2013	1.00	
	Gilbert Rd: Ocotillo Rd to Chandler Heights	0.000	6.160	0.000	6.160	2014	1.00	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Gilbert Rd: Chandler Heights Rd to Riggs Rd	0.000	1.764	0.885	2.649	2016	1.00	
	Gilbert Rd: Riggs Rd to to Hunt Hwy	0.000	1.764	0.885	2.649	2019	1.00	
A9	**Kyrene Rd/Ray Rd**	0.000	3.775	0.000	3.775	2025	0.25	
A10	**Price Rd Substitute Projects**	3.053	40.536	1.408	45.703	2024	6.00	
	Chandler Heights Rd: Arizona Avenue to McQueen Road	0.000	7.325	0.000	7.325	2024	1.00	
	Chandler Heights Road: McQueen Road to Gilbert Road	0.000	6.535	0.000	6.535	2022	3.00	
	McQueen Road: Ocotillo Road to Riggs Road	0.000	6.482	0.000	6.482	2018	2.00	
	Ocotillo Road: Arizona Avenue to McQueen Road	0.000	5.295	1.408	6.703	2014	1.00	
	Ocotillo Road: Cooper Road to Gilbert Road	0.000	6.499	0.000	6.499	2024	2.50	
	Price Rd at Germann Rd: Intersection Improvements	0.000	3.178	0.000	3.178	2021	0.25	
	Price Rd at Queen Creek Rd: Intersection Improvements	0.000	5.222	0.000	5.222	2021	0.25	
	Price Rd: Santan to Germann	3.053	0.000	0.000	3.759	2008	1.25	Project Completed
A11	**Ray Rd/Alma School Rd**	2.217	0.000	0.000	2.217	2012	0.25	HSIP Recipient
A12	**Ray Rd/Dobson Rd**	0.000	6.718	0.000	6.718	2020	0.25	
A13	**Ray Rd/McClintock Dr**	0.000	5.646	0.000	5.646	2018	0.25	
A14	**Ray Rd/Rural Rd**	0.000	3.775	0.000	3.775	2025	0.25	
CHANDLER/GILBERT								
A15	**Queen Creek Rd: Arizona Ave to Higley Rd**	16.565	7.448	5.112	29.125	2021	4.00	
	CHANDLER Queen Creek Rd: Arizona Ave to McQueen Rd	5.672	0.000	0.000	5.672	2009	1.00	Project Completed

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	CHANDLER Queen Creek Rd: McQueen Rd to Gilbert Rd	0.000	7.448	5.112	12.560	2021	2.00	
	GILBERT Queen Creek Rd: Greenfield Rd to Higley	10.893	0.000	0.000	10.893	2011	1.00	Project Completed. Savings reallocated to AIIGUD3003 and ACIGER2003B
EL MIRAGE/MARICOPA COUNTY								
A94	**El Mirage Rd: Northern Ave to Bell Rd (Phase I)**	1.448	23.213	0.000	24.661	2015	4.25	
	El Mirage Road Design Concept Report	1.448	0.000	0	1.448	NA	NA	
	El Mirage Rd: Bell Rd to Picerne Dr (MC)	0.000	0.000	0.000	0.000	2014	0.50	
	El Mirage Rd: Northern Ave to Cactus (MC)	0.000	1.140	0.000	1.140	NA	NA	Design only
	El Mirage Rd: Cactus to Grand & Thunderbird Rd: El Mirage to Grand (ELM)	0.000	1.788	0.000	1.788	NA	NA	Design only
	El Mirage Rd: Northern Ave to Peoria Ave (MC)	0.000	9.856	0.000	9.856	2015	2.00	
	Thunderbird Rd: El Mirage Rd to Grand Avenue (ELM)	0.000	2.817	0.000	2.817	2014	0.75	
	El Mirage Rd: Peoria Ave to Cactus Rd (ELM)	0.000	7.612	0.000	7.612	2015	1.00	
A37	**El Mirage Rd: Northern Ave to Bell Rd (Phase II)**	0.000	13.553	0.000	13.553	20231	3.60	
	El Mirage Rd: Cactus to Grand Avenue (ELM)	0.000	13.553	0.000	13.553	2019	1.60	
	El Mirage Rd: Grand Avenue to Picerne Drive (MC)	0.000	0.000	0.000	0.000	2031	2.00	
FOUNTAIN HILLS								
A16	**Shea Blvd: Palisades Blvd to Cereus Wash**	0.467	5.036	0.692	6.195	2021	3.00	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Shea Blvd: Palisades Blvd to Fountain Hills Blvd	0.247	0.000	0.000	0.247	----	----	Project is for design only. Project Completed.
	Shea Blvd: Technology Dr to Cereus Wash	0.220	2.905	0.000	3.125	2013	0.80	
	Shea Blvd: Fountain Hills Blvd to Technology Dr	0.000	2.131	0.692	2.823	2021	2.20	
GILBERT								
A17	**Elliot Rd/Cooper Rd**	0.000	4.140	0.000	4.140	2017	0.50	
A18	**Elliot Rd/Gilbert Rd**	0.000	3.775	3.600	7.375	2019	0.50	
A19	**Elliot Rd/Greenfield Rd**	0.000	3.774	0.000	3.774	2020	0.50	
A20	**Elliot Rd/Higley Rd**	0.000	3.775	1.137	4.912	2021	0.50	
A21	**Elliot Rd/Val Vista Dr**	0.000	3.775	0.699	4.474	2017	0.50	
A22	**Germann Rd: Gilbert Rd to Power Rd**	0.000	23.101	1.458	24.559	2020	4.00	
	Germann Rd: Gilbert Rd to Val Vista Dr	0.000	5.285	1.458	6.743	2020	2.00	
	Germann Rd: Val Vista Dr to Higley Rd	0.000	17.806	0.000	17.806	2015	2.00	Received project savings from ACIQNC1003C
A23	**Greenfield Rd: Elliot Rd to Ray Rd**	0.000	3.775	0.000	3.775	2020	2.00	
A24	**Guadalupe Rd/Cooper Rd**	0.385	4.803	0.000	5.188	2014	0.50	Project to be re-designed. Received project savings from ACIQNC1003C. Project Completed
A25	**Guadalupe Rd/Gilbert Rd**	0.000	3.775	0.000	3.775	2015	0.50	
A26	**Guadalupe Rd/Greenfield Rd**	0.000	2.992	1.919	4.912	2024	0.50	
A27	**Guadalupe Rd/Power Rd**	0.000	2.379	3.901	6.280	2020	0.50	
A28	**Guadalupe Rd/Val Vista Dr**	0.000	3.775	0.000	3.775	2021	0.50	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
A30	**Ray Rd: Val Vista Dr to Power Rd**	0.000	16.683	0.000	16.683	2020	4.00	Project segments combined
A31	**Ray Rd/Gilbert Rd**	0.000	0.000	3.775	3.775	2020	0.50	
A32	**Val Vista Dr: Warner Rd to Pecos**	10.398	0.000	0.000	10.398	2006	2.90	FY08 RARF Closeout Project. Project Completed.
A33	**Warner Rd/Cooper Rd**	3.701	0.000		3.701	2010	0.50	Project Completed
A34	**Warner Rd/Greenfield Rd**	0.000	3.775		3.775	2021	0.50	
GILBERT/MESA/MARICOPA COUNTY								
A29	**Power Rd: Santan Fwy to Chandler Heights**	5.143	15.488		20.631	2024	5.00	
	Power Rd/Pecos (GIL)	5.143	0.000		5.143	2009	0.50	Project Completed
	Power Rd: Santan Fwy to Pecos Rd (MES)	0.000	15.488		15.488	2011	1.50	Lead Agency changed from Gilbert to Mesa in July 2012
	Power Rd: Pecos to Chandler Heights (GIL)	0.000	0.000	0.000	0.000	2025	3.00	
A45	**Power Rd: Baseline Rd to Santan Fwy**	7.760	8.193	0.000	15.953	2018	4.50	
	Power Rd: East Maricopa Floodway to Santan Fwy/Loop 202 (MES)	0.000	8.193	0.000	8.193	2018	3.50	
	Power Rd: Baseline Rd to East Maricopa Floodway (MC)	7.760	0.000	0.000	7.760	2009	1.00	Project Completed
MARICOPA COUNTY								
A35	**Dobson Rd: Bridge over Salt River**	0.000	18.632	0.000	18.632	2019	1.60	
A36	**El Mirage Rd: Bell Rd to Jomax Rd**	9.735	9.725		19.461	2027	6.20	
	El Mirage Rd: Bell Rd to Deer Valley Dr	4.201	9.725	0.000	13.926	2011	3.00	Project Completed
	El Mirage Rd: L303 to Jomax	0.000	0.000	0.000	0.000	2027	2.00	
	El Mirage Rd: Deer Valley Dr to L303	5.535	0.000	0.000	5.535	2009	1.20	FY10 RARF Closeout Project. Project Completed.
A38	**Gilbert Rd: Bridge over Salt River**	0.000	14.005	0.000	14.005	2015	1.62	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
A39	**Jomax Rd: SR-303L to Sun Valley Parkway**	0.000	6.830	17.761	24.591	2018	18.50	ROW project only
A40	**McKellips Rd: Bridge over Salt River**	0.000	0.000	14.005	14.005	2028	0.80	
A41	**McKellips Rd: SR-101L to SRP-MIC/Alma School Rd**	0.000	22.885	14.567	37.452	2019	1.96	
A42	**Northern Pkwy: Sarival to Grand (Phase I)**	60.219	0.000	0.000	60.219	2013	12.50	Total corridor length is 12.5 miles
	Northern Parkway: Sarival to Dysart	57.618	0.000	0.000	57.618	2013	4.10	
	Northern Parkway: ROW Protection	2.601	0.000	0.000	2.601	2012	12.50	
A43	**Northern Pkwy: Sarival to Grand (Phase II)**	3.301	84.651	0.000	87.952	2020	12.50	
	Northern Parkway: Sarival to Dysart	0.496	2.410	0.000	2.906	2013	4.10	Landscape and construction project. Local match used from other segments
	Northern Pkwy: Dysart to 111th	2.457	24.290	0.000	26.747	2015	2.50	Project scope includes Agua Fria Bridge and Sarival Overpass
	Northern Parkway: Reems and Litchfield Overpasses	0.348	6.866	0.000	7.214	2014	0.20	Combined two segments
	Northern Pkwy: Northern Ave at L101	0.000	8.449	0.000	8.449	2016	0.50	
	Northern Pkwy: Dysart Overpass	0.000	23.357	0.000	23.357	2017	0.10	
	Northern Pkwy: ROW Protection	0.000	1.400	0.000	1.400	2017	12.50	
	Northern Parkway: Interim Construction	0.000	17.880	0.000	17.880	2020	12.50	
A44	**Northern Pkwy: Sarival to Grand (Phase III)**	0.000	88.566		88.566	2025	12.50	
	Northern Pkwy: El Mirage Alternative Access	0.000	2.915	0.000	2.915	2019	1.00	
	Northern Pkwy: El Mirage Overpass	0.000	21.515	0.000	21.515	2020	0.10	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Northern Pkwy: Agua Fria to 111th	0.000	2.817	0.000	2.817	2021	1.00	
	Northern Pkwy: 111th to 107th	0.000	15.424	0.000	15.424	2023	0.50	
	Northern Pkwy: 107th to 99th	0.000	20.572	0.000	20.572	2024	1.00	
	Northern Pkwy: Loop 101 to 91st	0.000	3.575	0.000	3.575	2025	0.50	
	Northern Pkwy: 91st to Grand Intersection Improvements	0.000	5.907	0.000	5.907	2025	3.00	
	Northern Pkwy: ROW Protection	0.000	0.000	0.000	0.000	2025	12.50	
	Northern Pkwy: Ultimate Construction	0.000	15.840	0.000	15.840	2025	12.50	
MESA								
A46	**Baseline Rd: Power Rd to Meridian Rd**	0.000	18.297	0.000	18.297	2017	6.00	
	Baseline Rd: Power Rd to Ellsworth Rd	0.000	8.936		8.936	2016	3.00	
	Baseline Rd: Ellsworth Rd to Meridian Rd	0.000	9.361	0.000	9.361	2017	3.00	
A47	**Broadway Rd: Dobson Rd to Country Club**	0.082	3.751	4.741	8.574	2019	2.00	
A48	**Country Club/University Dr**	0.000	8.325	0.000	8.325	2019	1.00	
A49	**Country Club/Brown Rd**	0.000	4.030		4.030	2019	0.50	
A50	**Crismon Rd: Broadway Rd to Germann Rd**	0.000	24.732	9.919	34.651	2025	9.00	
	Crismon Rd: Broadway Rd to Guadalupe Rd	0.000	0.000	9.919	9.919	2029	3.00	
	Crismon Rd: Guadalupe Rd to Ray Rd	0.000	12.406	0.000	12.406	2025	3.00	
	Crismon Rd: Ray Rd to Germann Rd	0.000	12.327	0.000	12.327	2017	3.00	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
A51	**Dobson Rd/Guadalupe Rd**	2.170	0.000	0.000	2.170	2011	0.50	Project Completed
A52	**Dobson Rd/University Dr**	0.000	0.000		2.784	2012	0.50	
A53	**Elliot Rd: Power Rd to Meridian Rd**	0.000	9.330	8.646	17.976	2027	6.00	
	Elliot Rd: Power Rd to Ellsworth Rd	0.000	0.000	8.646	8.646	2027	3.00	
	Elliot Rd: Ellsworth Rd to Meridian Rd	0.000	9.330	0.000	9.330	2025	3.00	
A54	**Germann Rd: Ellsworth Rd to Signal Butte Rd**	0.000	12.795	0.000	12.795	2018	2.00	
A55	**Gilbert Rd/University Dr**	2.741	0.000	0.000	2.741	2010	0.50	Project Completed
A56	**Greenfield Rd: University Rd to Baseline Rd**	5.777	0.000	6.585	12.361	2028	3.00	
	Greenfield Rd: Baseline Rd to Southern Ave	5.777	0.000	0.000	5.777	2010	1.00	Project Completed
	Greenfield Rd: Southern Ave to University Rd	0.000	0.000	6.585	6.585	2028	2.00	
A57	**Guadalupe Rd: Power Rd to Meridian Rd**	0.000	25.269	0.000	25.269	2019	6.00	
	Guadalupe Rd: Power Rd to Hawes Rd	0.000	8.790	0.000	8.790	2018	2.00	
	Guadalupe Rd: Hawes Rd to Crimson Rd	0.000	8.921	0.000	8.921	2018	2.00	
	Guadalupe Rd: Crimson Rd to Meridian Rd	0.000	7.558	0.000	7.558	2019	2.00	
A58	**Hawes Rd: Broadway Rd to Ray Rd**	0.416	11.523	0.000	11.939	2026	6.00	
	Hawes Rd: Broadway Rd to US60	0.000	0.000	0.000	0.000	2022	2.00	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Hawes Rd: Baseline Rd to Elliot Rd	0.000	7.108		7.108	2025	2.00	
	Hawes Rd: Elliot Rd to Santan Freeway	0.000	4.415		4.415	2026	1.25	
	Hawes Rd: Santan Freeway to Ray Rd	0.416	0.000		0.416	2011	0.75	Project Completed
A59	**Higley Rd Parkway: S 60 to SR-202L**	0.000	17.163		17.163	2020	6.50	
	Higley Rd Parkway: SR-202L to Brown Rd	0.000	8.582		8.582	2019	3.00	
	Higley Rd Parkway: Brown Rd to US-60	0.000	8.582		8.582	2020	3.50	
A60	**Higley Rd Parkway: US 60 to SR 202L (RM) Grade Separations**	0.000	22.490		22.490	2020	1.00	
A61	**Lindsay Rd/Brown Rd**	0.000	3.919		3.919	2026	0.50	
A62	**McKellips Rd: East of Sossaman to Meridian**	0.000	12.283		12.283	2027	5.00	
	McKellips Rd: East of Sossaman to Crismon Rd	0.000	12.283		12.283	2024	3.00	
	McKellips Rd: Crismon Rd to Meridian Rd	0.000	0.000	0.000	0.000	2027	2.00	
A63	**McKellips Rd: Gilbert Rd to Power Rd**	0.162	24.775		21.663	2026	3.00	
	McKellips Rd/Lindsay Rd	0.043	6.137	0.000	6.180	2026	0.50	
	McKellips Rd/Greenfield Rd	0.040	2.630		2.670	2026	0.50	
	McKellips Rd/Higley Rd	0.040	6.310		6.350	2026	0.50	
	McKellips Rd/Power Rd	0.000	3.393		3.393	2019	0.50	
	McKellips Rd/Recker Rd	0.000	3.393		3.393	2026	0.50	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	McKellips Rd/Val Vista Dr	0.040	2.911	0.000	2.950	2018	0.50	
A64	**Meridian Rd: Baseline Rd to Germann Rd**	0.000	29.945	0.000	29.945	2020	7.00	
	Meridian Rd: Baseline Rd to Ray Rd	0.000	17.224		17.224	2018	4.00	
	Meridian Rd: Ray Rd to Germann Rd	0.000	12.721		12.721	2020	3.00	
A65	**Mesa Dr: Southern Ave to US60 and Mesa Dr to Broadway Rd**	3.541	19.811		9.316	2016	2.00	
	Mesa Dr: US 60 to Southern Ave	3.485	11.594		8.456	2013	1.00	
	Mesa Dr/Broadway Rd	0.056	8.217		8.272	2016	1.00	
A66	**Pecos Rd: Ellsworth Rd to Meridian Rd**	0.000	15.381		15.381	2021	3.00	
A67	**Ray Rd: Sossaman Rd to Meridian Rd**	3.023	21.848	0.000	24.871	2026	5.00	
	Ray Rd: Sossaman Rd to Ellsworth Rd	3.023	0.000		3.023	2011	2.00	Project Completed
	Ray Rd: Ellsworth Rd to Meridian Rd	0.000	21.848		21.848	2026	3.00	
A68	**Signal Butte Rd: Broadway to Pecos Rd**	0.000	33.793		33.793	2026	8.00	
	Signal Butte Rd: Broadway Rd to Elliot Rd	0.000	17.217		17.217	2022	4.00	
	Signal Butte Rd: Elliot Rd to Pecos Rd	0.000	16.576		16.576	2026	4.00	
A69	**Southern Ave: Country Club Dr to Recker Rd**	0.277	28.284	0.000	28.561	2019	2.00	
	Southern/Country Club Dr	0.000	5.901		5.901	2014	0.50	
	Southern Ave/Stapley Dr	0.277	11.845		12.122	2013	0.50	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Southern Ave/Lindsay Rd	0.000	4.251		4.251	2019	0.50	
	Southern Ave/Higley Rd	0.000	6.287		6.287	2019	0.50	
A70	**Southern Ave: Sossaman Rd to Meridian Rd**	0.000	0.000	18.038	18.038	2025	5.00	
	Southern Ave: Sossaman Rd to Crismon Rd	0.000	0.000	8.014	8.014	2023	3.00	
	Southern Ave: Crismon Rd to Meridian Rd	0.000	0.000	5.296	5.296	2025	2.00	
A71	**Stapley Dr/University Dr**	0.000	7.785		2.784	2015	0.50	
A72	**Thomas Rd: Gilbert Rd to Val Vista Dr**	0.000	4.746		4.746	2020	2.00	
A73	**University Dr: Val Vista Dr to Hawes Rd**	0.000	22.033		22.033	2024	6.00	
	University Dr: Val Vista Dr to Higley Rd	0.000	11.204		11.204	2022	2.00	
	University Dr: Higley Rd to Hawes Rd	0.000	10.829		10.829	2024	4.00	
A74	**Val Vista Dr: University Dr to Baseline Rd**	0.000	8.320	4.722	13.042	2026	3.00	
	Val Vista Dr: Baseline Rd to Southern Ave	0.000	8.320	0.000	8.320	2019	1.00	
	Val Vista Dr: Southern Ave to University Dr	0.000	0.000	4.722	4.722	2026	2.00	
PEORIA								
A75	**Beardsley Connection: SR-101L to Beardsley Rd at 83rd Ave/Lake Pleasant Pkwy**	19.864	3.730		23.594	2012	3.95	
	Beardsley Connection: Loop 101 to 83rd Ave/Lake Pleasant Pkwy	6.696	0.000		6.696	2010	0.75	Project Completed.

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Loop 101 (Agua Fria Fwy) at Beardsley Rd/Union Hills Dr	10.851	0.000		10.851	2010	2.00	Project Completed
	83rd Avenue: Butler Rd to Mountain View	0.584	3.570		4.154	2013	1.00	
	75th Ave at Thunderbird Rd: Intersection Improvement	1.734	0.160	0.000	3.166	2013	0.20	
A76	**Happy Valley Rd: L303 to 67th Avenue**	20.634	0.000	0.000	20.634	2024	8.000	
	Happy Valley Rd: Loop 303 to Lake Pleasant Parkway	0.000	0.000		0.000	2024	3.00	
	Happy Valley Rd: Lake Pleasant Pkwy to 67th Ave	20.634	0.000		20.634	2010	5.00	Project Completed
A77	**Lake Pleasant Pkwy: Union Hills to SR74**	29.772	13.867	0.000	43.639	2020	14.06	
	Lake Pleasant Pkwy: Dynamite Blvd to CAP	2.645	13.867	0.000	16.512	2012	2.50	
	Lake Pleasant Pkwy: Union Hills to Dynamite Rd	27.127	0.000	0.000	27.127	2008	9.76	Project Completed
	Lake Pleasant Pkwy: CAP to SR-74/Carefree Hwy	0.000	0.000	0.000	0.000	2024	1.80	
PHOENIX								
A78	**Avenida Rio Salado: 51st Ave. to 7th St.**	23.189	21.505	0.000	44.693	2015	6.00	Project length and scope changed.
A79	**Black Mountain Blvd: SR-51and Loop 101/ Pima Fwy to Deer Valley Rd**	1.300	21.230	0.000	22.530	2015	2.00	
A80	**Happy Valley Rd: 67th Ave to I-17**	0.000	5.343	13.292	18.634	2030	4.50	
	Happy Valley: I-17 to 35th Ave	0.000	5.343	0.078	5.421	2005	1.00	Project Completed

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Happy Valley: 35th Ave to 43rd Ave	0.000	0.000	5.232	5.232	2023	1.00	
	Happy Valley: 43rd Ave to 55th Ave	0.000	0.000	4.671	4.671	2030	1.50	
	Happy Valley: 55th Ave to 67th Ave	0.000	0.000	3.310	3.310	2030	1.00	
A81	**Sonoran Blvd: 15th Avenue to Cave Creek**	18.208	14.364	0.000	32.572	2013	7.00	
SCOTTSDALE/CAREFREE								
A87	**Pima Rd: SR101L to Happy Valley Rd and Dynamite Rd to Cave Creek**	31.487	58.816		90.302	2020	10.65	
	Pima Rd: Thompson Peak Parkway to Pinnacle Peak (SCT)	17.847	0.000		17.847	2012	1.50	Project completed. Savings reallocated to ACISCT1003A
	Pima Rd/Happy Valley (SCT)	0.000	0.000		0.000	2008	0.40	Project Completed
	Pima Rd: Pinnacle Peak to Happy Valley Rd (SCT)	0.000	15.990		15.990	2017	1.00	
	Pima Rd: Dynamite Blvd to Stagecoach Rd (SCT)	0.000	37.892		37.892	2020	5.00	
	Pima Rd: Stagecoach Rd to Cave Creek (CFR)	0.000	4.933	0.625	5.558	2020	0.25	
	Pima Rd: SR101L to Thompson Peak Pkwy (SCT)	13.639	0.000		13.639	2008	2.50	Project Completed
SCOTTSDALE								
A82	**Carefree Hwy: Cave Creek Rd to Scottsdale Rd**	0.000	8.012		8.012	2026	2.00	
A83	**SR-101L North Frontage Roads: Pima/Princess Dr to Scottsdale Rd**	3.745	0.000	29.014	32.759	2028	2.00	
	SR-101L Frontage Rd: Hayden Rd to Scottsdale Rd	3.745	0.000		3.745	2009	1.00	Project Completed
	SR-101L Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	0.000	0.000	29.014	29.014	2028	1.00	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
A84	**SR-101L South Frontage Rd: Hayden Rd to Pima**	0.000	0.000		0.000	0	1.00	This project was deleted in FY2009.
A85	**Miller Rd/SR-101L Underpass**	0.000	14.005	0.000	14.005	2020	1.30	
A86	**Pima Rd: Happy Valley Rd to Dynamite Blvd**	0.000	23.747		23.747	2018	2.00	
A88	**Pima Rd: McKellips Rd to Via Linda**	7.463	23.257		30.719	2011	7.40	
	Pima Rd: Via Linda to Via De Ventura	0.000	1.339		1.339	2014	1.30	
	Pima Rd: Via De Ventura to Krail	7.463	0.000		7.463	2011	1.30	Project Completed
	Pima Rd: Thomas Rd to McDowell Rd	0.000	6.129		6.080	2014	1.00	
	Pima Rd: Krail to Chaparral	0.000	9.463		9.463	2016	1.80	
	Pima Rd: Chaparral Rd to Thomas Rd	0.000	6.326		6.326	2018	2.00	
A89	**Scottsdale Airport: Runway Tunnel**	0.399	69.640	0.001	69.543	2026	6.85	
	Frank Lloyd Wright -Loop 101 Traffic Interchange	0.000	5.633		5.633	2019	0.40	
	Raintree -Loop 101 Traffic Interchange	0.000	2.817		2.817	2017	0.40	
	Northsight Blvd: Hayden to Frank Lloyd Wright	0.399	8.755		9.154	2013	0.35	
	Frank Lloyd Wright Frontage Rd: Northsight to Greenway-Hayden Loop	0.000	7.746		7.746	2015	0.75	
	Redfield Rd: Scottsdale Rd to Hayden	0.000	3.873		3.873	2014	1.20	
	Raintree Extension: Hayden to Redfield	0.000	13.523		13.027	2014	1.00	Renamed in FY2012
	Raintree Drive: Loop 101 to Hayden	0.000	11.266	0.000	11.266	2016	1.00	
	Frank Lloyd Wright at 76th/78th/82nd Street: Intersection Improvements	0.000	0.844		0.844	2024	0.50	

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Southbound Loop 101 Frontage Road Connections	0.000	3.052	0.000	3.052	2014	0.50	Project Scope changed in FY2012
	Hayden Rd - Loop 101 Interchange Improvements	0.000	11.427	0.001	11.428	2026	0.75	
	Airpark DCR	0.000	0.704	0.000	0.704	2013	NA	Received $704,000 in project savings from ACISHA2003E
A90	**Scottsdale Rd: Thompson Peak Pkwy to Jomax Rd**	0.757	18.756	0.000	19.514	2015	4.00	
	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Pkwy	0.757	16.956		17.714	2012	2.00	Received $6.1m in project savings from ACIPMA1003A and $16,756 in project savings from ACISHA2003E
	Scottsdale Rd: Pinnacle Peak Pkwy to Jomax Rd	0.000	1.800		1.800	2019	2.00	
A91	**Scottsdale Rd: Jomax Rd to Carefree Hwy**	0.000	28.497		28.497	2022	5.00	
	Scottsdale Rd: Jomax Rd to Dixileta Dr	0.000	9.499	0.000	9.499	2019	2.00	
	Scottsdale Rd: Dixileta Dr to Ashler Hills Dr	0.000	9.499	0.000	9.499	2021	1.50	
	Scottsdale Rd: Ashler Hills Dr to Carefree Highway	0.000	9.499	0.000	9.499	2022	1.50	
A92	**Shea Blvd: SR-101L to SR-87**	5.455	17.198	0.000	22.653	2019	12.80	
	Shea Blvd at 90th/92nd/96th	4.056	0.000		4.056	2007	0.75	Project Completed
	Shea Auxiliary Lane from 90th St to Loop 101	0.000	6.390		6.390	2021	1.00	
	Shea Blvd at Via Linda (Phase1)	0.621	0.000		0.621	2006	0.20	Project Completed
	Shea Blvd at Via Linda (Phase 2)	0.000	2.086		2.086	2017	0.25	
	Shea Blvd at 120/124th St	0.183	0.000	0.000	0.183	2011	0.40	Project Completed

MAP CODE	FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH* (Miles)	OTHER PROJECT INFORMATION
		Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
			FY13-FY26 (2012$)	Phase V (Unfunded)				
	Shea Blvd at Mayo/134th St	0.162	0.000		0.162	2006	0.20	Project Completed
	Shea Blvd: SR-101L to 96th St, ITS Improvements	0.433	0.000	0.000	0.433	2010	1.00	Project Completed
	Shea Blvd: 96th St to 144th St, ITS Improvements	0.000	2.360		2.360	2016	6.25	
	Shea Blvd at Loop 101	0.000	3.688		3.688	2018	1.00	
	Shea Blvd at 110th St	0.000	0.266		0.266	2017	0.25	
	Shea Blvd at 114th St	0.000	0.266		0.266	2019	0.25	
	Shea Blvd at Frank Lloyd Wright Blvd	0.000	0.664		0.664	2017	0.25	
	Shea Blvd at 115th St	0.000	0.111		0.111	2019	0.25	
	Shea Blvd at 125th St	0.000	0.880		0.880	2013	0.25	
	Shea Blvd at 135th St	0.000	0.111		0.111	2019	0.25	
	Shea Blvd at 136th St	0.000	0.376		0.376	2013	0.25	
A93	**Legacy Dr: Hayden Rd to 88th Street**	0.000	2.073	10.021	12.094	2026	1.20	
TOTALS		**326.7**	**1,223.6**	**180.4**	**1,723.2**			

TABLE B-2
ARTERIAL STREET LIFE CYCLE PROGRAM - INTELLIGENT TRANSPORTATION SYSTEMS
REGIONAL FUNDING REIMBURSEMENTS: FY 2006-2026
(2012 and Year of Expenditure Dollars in Millions)

Year of Expenditure	CONST	Construction
Fiscal Year	Expend	Expenditures
Dollars	Reimb	Reimbursement(s)

FACILITY/LOCATION	REGIONAL FUNDING				FINAL FY for CONST	LENGTH (Miles)	OTHER PROJECT INFORMATION
	Reimb. through FY12 (YOE$)	Estimated Future Reimb		Total Reimb. (2012$, YOE$)			
		FY13-FY26 (2012$)	Phase V (Unfunded)				
REGION-WIDE							
Intelligent Transportation System Projects	30.900	34.800	0.000	65.700	2013-19	N/A	

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 2006-2026, FY 2027-2031
(2012 and Year of Expenditure Dollars in Millions)

Map Code	Route	Expenditures: through FY 2012: (YOE Dollars):	Est. Future Costs: FY2013 - 2026 (2012 Dollars):	Total Est. Costs: FY 2006-2026 (2012 and YOE Dollars):	Est. Future Costs: FY2027 - 2031 (2012 Dollars):	Total Est. Costs: FY 2006-2031 (2012 and YOE Dollars):	Funding Start (Fiscal Year)	Other Project Information
T1	Ahwatukee Connector	0.00	0.00	0.00	0.43	0.43	2030	
T2	Ahwatukee Express	3.76	0.00	3.76	0.00	3.76	2006	I-10 East RAPID (Phoenix assumed funding in FY 2011)
T3	Anthem Express	0.00	0.00	0.00	0.65	0.65	2031	
T4	Apache Junction Express	0.00	0.00	0.00	2.40	2.40	2027	
T5	Arizona Avenue LINK	1.76	18.89	20.65	7.50	28.15	2011	
T6	Avondale Express	0.00	1.65	1.65	1.35	3.00	2020	
T7	Black Canyon Freeway Corridor	0.00	0.00	0.00	0.71	0.71	2030	
T8	Buckeye Express	0.00	0.00	0.00	1.69	1.69	2029	
T9	Chandler Boulevard LINK	0.00	0.00	0.00	0.00	0.00	2034	Designated as illustrative project in FY 2010.
T10	Deer Valley Express	4.08	0.00	4.08	0.00	4.08	2006	I-17 RAPID (Phoenix assumed funding in FY 2011)
T11	Desert Sky Express	1.43	0.00	1.43	0.00	1.43	2006	I-10 West RAPID (Phoenix assumed funding in FY 2011)
T12	East Loop 101 Connector	1.28	4.02	5.29	1.60	6.89	2009	Route 511 - Chandler/Scottsdale Airpark Express (route modified in FY 2012)
T13	Grand Avenue Limited	1.41	1.90	3.31	0.75	4.06	2006	
T14	Loop 303 Express	0.00	0.00	0.00	0.78	0.78	2031	
T15	Main Street LINK	5.68	22.47	28.14	8.45	36.60	2009	
T16	North Glendale Express	3.41	7.17	10.58	2.85	13.44	2008	Route 573 - Northwest Valley
T17	North I-17 Express	0.00	0.00	0.00	0.70	0.70	2031	
T18	North Loop 101 Connector	2.66	0.00	2.66	0.00	2.66	2008	Route 572 - Surprise/Scottsdale Express (route eliminated in FY 2011)
T19	Papago Fwy Connector	0.99	4.78	5.77	1.90	7.67	2009	Routes 562 - Goodyear Express and Route 563 - Buckeye Express
T20	Peoria Express	0.00	0.00	0.00	1.18	1.18	2030	
T21	Pima Express	0.00	0.00	0.00	1.40	1.40	2029	
T22	Red Mountain Express	1.21	6.14	7.35	2.44	9.79	2009	Routes 535 & 536 - Northeast Mesa Express (route 536 eliminated in FY 2011)
T23	Red Mountain Fwy Connector	0.00	0.00	0.00	0.60	0.60	2031	
T24	Santan Express	0.00	0.00	0.00	1.71	1.71	2031	
T25	Scottsdale/Rural LINK	0.00	12.07	12.07	5.62	17.69	2015	Limited implementation (Rural/Apache LRT station to Scottsdale/Thunderbird park and ride)

Map Code	Route	Expenditures through FY 2012 (YOE Dollars)	Est. Future Costs: FY2013 - 2026 (2012 Dollars)	Total Est. Costs: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY2027 - 2031 (2012 Dollars)	Total Est. Costs: FY 2006-2031 (2012 and YOE Dollars)	Funding Start (Fiscal Year)	Other Project Information
T26	South Central Avenue	0.00	12.00	12.00	4.76	16.77	2013	Advanced 2 years
T27	South Central Avenue LINK	0.00	0.00	0.00	1.85	1.85	2030	
T28	SR 51 Express	3.14	0.00	3.14	0.00	3.14	2006	SR-51 RAPID (Phoenix assumed funding in FY 2011)
T29	Superstition Fwy Connector	0.00	0.00	0.00	0.65	0.65	2028	
T30	Superstition Springs Express	0.00	0.00	0.00	0.91	0.91	2031	
T31	West Loop 101 Connector	1.94	4.63	6.57	1.84	8.42	2009	Routes 575 & 576 - Northwest Valley Express (route 576 eliminated in FY 2011)
	TOTAL	**32.76**	**95.72**	**128.48**	**54.75**	**183.23**		

TABLE C-2
TRANSIT LIFE CYCLE PROGRAM - BUS OPERATIONS: REGIONAL GRID
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031
(2012 and Year of Expenditure Dollars in Millions)

Map Code	Route	Expenditures Through FY 2012 (YOE Dollars)	Est. Future Costs: FY2013 - 2026 (2012 Dollars)	Total Est. Costs: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY2027 - 2031 (2012 Dollars)	Total Est. Costs: FY 2006-2031 (2012 and YOE Dollars)	Funding Start (Fiscal Year)	Sched. Imprv. (Fiscal Year)	Other Project Information
T40	59th Avenue	3.82	14.55	18.37	5.77	24.14	2006		Route 59 - 59th Avenue
T41	83rd Avenue/75th Avenue	0.00	0.00	0.00	10.53	10.53	2028		
T42	99th Avenue	0.00	0.00	0.00	2.24	2.24	2031		
T43	Alma School Rd.	1.74	14.60	16.35	7.70	24.05	2006	2018	Route 104 - Alma School Road
T44	Arizona Avenue/Country Club	3.64	17.46	21.10	8.82	29.92	2006	2012	Route 112 - Country Club Drive/Arizona Avenue
T45	Baseline Rd	0.00	15.39	15.39	6.81	22.20	2013		Route 77 - Baseline Road
	Dobson Rd	7.89	25.24	33.14	10.03	43.16	2009		Route 96 - Dobson Road
	Southern Ave	8.54	48.55	57.09	19.28	76.37	2006	2009	Route 61 - Southern Avenue
T46	Bell Road	0.00	3.65	3.65	5.59	9.24	2022		Route 170 - Bell Road
T47	Broadway	0.93	7.98	8.91	3.17	12.08	2011		Route 45 - Broadway Road
T48	Buckeye Road	0.00	0.00	0.00	1.03	1.03	2031		
T49	Camelback Road	0.67	4.34	5.00	2.50	7.51	2006	2019	Route 50 - Camelback Road
T50	Chandler Blvd.	14.34	40.23	54.57	15.98	70.55	2008		Route 156 - Chandler Boulevard
T51	Dunlap/Olive Avenue	0.00	0.00	0.00	1.85	1.85	2031		
T52	Dysart Road	0.00	0.00	0.00	1.17	1.17	2030		
T53	Elliot Road	0.56	22.88	23.44	9.53	32.97	2011	2014	Route 108 - Elliot Road
T54	Gilbert Road	3.43	19.87	23.30	7.89	31.19	2010		Route 136 - Gilbert Road
T55	Glendale Avenue	11.35	26.14	37.49	10.44	47.93	2006	2008	Route 70 - Glendale Avenue
T56	Greenfield Road	0.00	0.00	0.00	6.38	6.38	2029		
T57	Hayden/McClintock	3.93	29.95	33.87	18.88	52.76	2006	2021	Route 81 - Hayden Road/McClintock Drive
T58	Indian School Road	0.00	0.00	0.00	1.62	1.62	2031		
T59	Litchfield Road	0.00	0.00	0.00	0.00	0.00	2032		Designated as illustrative project in FY 2010.
T60	Main Street	6.84	29.29	36.14	11.64	47.78	2009		Route 40 - Apache/Main Street
T61	McDowell/McKellips	0.00	15.02	15.02	6.00	21.03	2013		Route 17 - McDowell Road
T62	Peoria Ave./Shea	6.51	22.92	29.44	9.18	38.61	2006		Route 106 - Peoria Road/Shea Boulevard
T63	Power Road	2.28	23.53	25.81	9.34	35.16	2011		Route 184 - Power Road
T64	Queen Creek Road	0.00	0.00	0.00	0.88	0.88	2031		
T65	Ray Road	0.00	0.00	0.00	12.57	12.57	2027		
T66	Scottsdale/Rural	31.33	77.86	109.18	31.03	140.22	2006	2007	Route 72 - Scottsdale/Rural Road
T67	Tatum / 44th Street	0.00	0.00	0.00	0.58	0.58	2027		

Map Code	Route	Expenditures through FY 2012 (YOE Dollars)	Est. Future Costs: FY2013 - 2026 (2012 Dollars)	Total Est. Costs: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY2027 - 2031 (2012 Dollars)	Total Est. Costs: FY 2006-2031 (2012 and YOE Dollars)	Funding Start (Fiscal Year)	Sched. Imprv. (Fiscal Year)	Other Project Information
T68	Thomas Road	0.00	5.99	5.99	3.00	8.99	2014	2031	Route 29 - Thomas Road
T69	University Drive	0.79	10.36	11.15	10.02	21.18	2021		Route 30 - University Drive
T70	Van Buren	0.00	10.71	10.71	4.66	15.37	2013	2016	Route 3 - Van Buren Street
T71	Waddell/Thunderbird	0.00	8.74	8.74	5.09	13.83	2015	2015	Route 138 - Thunderbird Road
	TOTAL	**108.61**	**495.26**	**603.86**	**261.23**	**865.09**			

TABLE C-3
TRANSIT LIFE CYCLE PROGRAM - BUS OPERATIONS: OTHERS
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031
(2012 and Year of Expenditure Dollars in Millions)

Route	Expenditures through FY 2012 (YOE Dollars)	Est. Future Costs: FY2013 - 2026 (2012 Dollars)	Total Est. Costs: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY2027 - 2031 (2012 Dollars)	Total Est. Costs: FY 2006-2031 (2012 and YOE Dollars)	Service Start (Fiscal Year)	Other Project Information
ADA Paratransit	66.95	341.18	408.14	123.97	532.10	2006	
Regional Passenger Support Services	39.19	90.07	129.26	25.99	155.25	2006	
Existing Local Service	4.27	9.13	13.40	3.64	17.03	2006	
Existing Express Service	21.42	39.39	60.81	15.53	76.34	2006	
Rural/Non-Fixed Route Service	2.46	4.56	7.01	1.82	8.83	2006	
Vanpool Service	0.00	0.00	0.00	0.00	0.00	2006	Vanpool operations are funded entirely through fares
Safety and Security Costs	2.19	12.27	14.46	4.16	18.62	2006	
Operating Contingency	0.00	1.87	1.87	0.00	1.87	2006	Most contingencies were eliminated to help balance the program
RPTA Planning and Administration	22.83	48.28	71.11	15.41	86.52	2006	Primarily funded through RPTA's allocation from Regional Area Road Fund
TOTAL	**159.31**	**546.75**	**706.06**	**190.51**	**896.57**		

TABLE C-4
TRANSIT LIFE CYCLE PROGRAM - BUS CAPITAL: FACILITES
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031
(2012 and Year of Expenditure Dollars in Millions)

Category	Expenditures through FY 2012 (YOE Dollars)	Est. Future Costs FY2013 - 2026 (2012 Dollars)	Total Est. Costs FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs FY2027 - 2031 (2012 Dollars)	Total Est. Costs FY 2006-2031 (2012 and YOE Dollars)	No. of Units Construc./ Installed through FY 2012	Tot. No. of Units to be Construc./ Installed through FY 2026	Tot. No. of Units to be Construc./ Installed through FY 2031	Other Project Information
Arterial BRT Right-of-Way and Improvements	24.04	7.11	31.15	0.32	31.47	25	39	51	
Bus Stop Pullouts/Improvements	5.49	0.00	5.49	0.00	5.49	230	230	230	Major reduction in planned bus stop improvements beginning in FY 2011 due to funding shortfall.
Dial-a-Ride and Rural Bus Maintenance Facilities	0.00	0.00	0.00	0.20	0.20	0	0	1	Rural facility was postponed beyond 2031 and 1 DAR facilities is started
Intelligent Transportation Systems (ITS) / Vehicle Management Systems (VMS)	4.29	17.65	21.93	0.00	21.93				Funding designated for system wide radio communications. Also see note below.
Park & Ride Lots	48.93	45.91	94.85	0.00	94.85	5	11	11	
Standard Bus Maintenance Facilities	106.34	0.00	106.34	0.00	106.34	2	2	2	
Transit Centers (4 Bay)	0.00	2.26	2.26	7.03	9.28	0	1	5	
Transit Centers (6 Bay)	1.53	2.07	3.60	3.34	6.94	0	1	2	
Transit Centers (Major Activity Centers)	4.86	0.00	4.86	8.00	12.85	1	1	2	
Vanpool Vehicle Maintenance Facilities	0.00	0.00	0.00	0.00	0.00	0	0	0	Project was postponed indefinitely
Contingency	0.00	0.00	0.00	0.00	0.00				
TOTAL	**195.46**	**75.00**	**270.47**	**18.88**	**289.35**				

Note: Expenditures through FY 2012 are lower than those reported for FY 2011, due to deferral of IGA with City of Phoenix.

TABLE C-5
TRANSIT LIFE CYCLE PROGRAM - BUS CAPITAL: FLEET
EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031
(2012 and Year of Expenditure Dollars in Millions)

Category	Expenditures through FY 2012 (YOE Dollars)	Est. Future Costs FY2013-2026 (2012 Dollars)	Total Est. Costs FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs FY2027-2031 (2012 Dollars)	Total Est. Costs FY 2006-2031 (2012 and YOE Dollars)	No. of Units to be Acquired through FY 2012	Tot. No. of Units to be Acquired through FY 2026	Tot. No. of Units to be Acquired through FY 2031	Other Project Information
Paratransit	10.69	34.50	45.19	28.65	73.83	178	546	714	See note below.
Fixed Route	225.34	534.73	760.07	13.70	773.77	492	1487	1678	
Rural Route	1.56	1.02	2.59	111.57	114.16	13	26	31	
Vanpool	11.06	29.69	40.75	0.39	41.14	350	1305	1445	
Contingency	0.65	0.80	1.44	0.00	1.44				
TOTAL	**249.29**	**600.74**	**850.04**	**154.30**	**1,004.34**				

Note: Expenditures through FY 2012 are lower than those reported for FY 2011, due to local purchase of vehicles that were not reimbursed by the TLCP as originally planned.

TABLE C-6

TRANSIT LIFE CYCLE PROGRAM - LIGHT RAIL TRANSIT/HIGH CAPACITY TRANSIT: SUPPORT INFRASTRUCTURE EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Facilitiy	Expenditures: through FY 2012 (Year of Expenditure Dollars)				Est. Future Costs: FY 2013-2026 (2012 Dollars)	Tot. Costs: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY 2027-2031 (2012 Dollars)	Tot. Costs: FY 2006-2031 (2012 and YOE Dollars)	Target Opening Date	Project Length (Center-line Miles)	Other Project Information
	Design	R/W	Construc.	Total							
Glendale Link: 19th Ave./Bethany Home to Downtown Glendale	0.87	0.00	0.00	0.87	5.41	6.29	0.00	6.29	9/2026	5	AA Costs
Northwest Link Phase 1: 19th Ave/Bethany Home to 19th Ave/Dunlop	4.58	0.00	0.00	4.58	0.00	4.58	0.00	4.58	9/2015	3.2	
Northwest Link Phase 2: 19th Ave./Dunlop to Rose Mofford Sports Complex	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	9/2026	1.8	AA & Draft EA
Tempe South Link: Main St./ Rural Rd. to Southern Ave.	5.31	0.00	0.09	5.41	0.00	5.41	0.00	5.41	12/2015	2.6	Project added in FY 2012 to cover AA costs as part of infrasturcture support.
Phoenix West Link: Washington Ave./Central Ave. to 79th Ave.	5.37	0.00	0.00	5.37	4.48	9.85	0.00	9.85	9/2023	11	AA Costs
Central Mesa Link: Main St./Sycamore to Main St./Mesa Dr. *	4.25	0.00	0.00	4.25	0.00	4.25	0.00	4.25	3/2016	3.1	AA Costs
CPEV Regional Reimbursements	0.00	0.00	198.75	198.75	0.00	198.75	0.00	198.75	12 / 2008	20	Includes final disbursement request
Systemwide Support Infrastructure	0.71	0.00	42.19	42.89	90.88	133.77	250.00	383.77	N/A		
Design Standards and System Planning	3.84	0.00	0.00	3.84	4.70	8.53	0.00	8.53	N/A		

Capital Project Development Admin.	3.81	0.00	0.00	3.81	21.60	25.41	7.50	32.91	N/A		
Utility Reimbursements	2.00	0.00	84.99	86.99	109.77	196.76	43.20	239.96	N/A		
TOTAL	**30.74**	**0.00**	**326.02**	**356.76**	**238.84**	**595.60**	**300.70**	**896.30**			

TABLE C-7

TRANSIT LIFE CYCLE PROGRAM - LIGHT RAIL TRANSIT/HIGH CAPACITY TRANSIT: ROUTE EXTENSIONS

EXPENDITURES AND ESTIMATED FUTURE COSTS: FY 2006-2026, FY 2027-2031

(2012 and Year of Expenditure Dollars in Millions)

Map Code	Facilitiy	Expenditures: through FY 2012 (Year of Expenditure Dollars)				Est. Future Costs: FY 2013-2026 (2012 Dollars)	Tot. Costs: FY 2006-2026 (2012 and YOE Dollars)	Est. Future Costs: FY 2027-2031 (2012 Dollars)	Tot. Costs: FY 2006-2031 (2012 and YOE Dollars)	Target Opening Date	Project Length (Center-line Miles)	Other Project Information
		Design	R/W	Construc.	Total							
T80	Glendale Link: 19th Ave./Bethany Home to Downtown Glendale	0.00	0.00	0.00	0.00	336.42	336.42	28.58	365.00	9/2026	5.0	
T81	Phoenix West Link: Washington Ave./Central Ave. to 79th Ave.	0.00	0.00	0.40	0.40	788.25	788.65	0.00	788.65	9/2023	11.0	
T82	Northwest Link Phase 1: 19th Ave/Bethany Home to 19th Ave/Dunlap	27.41	63.37	0.00	90.78	171.50	262.28	0.00	262.28	9/2015	3.2	
T82	Northwest Link Phase 2: 19th Ave./Dunlap to Rose Mofford Sports Complex	0.00	0.00	0.00	0.00	95.11	95.11	7.09	102.20	9/2026	1.4	
T83	Northeast Phoenix Link: Indian School Rd./Central Ave. to Paradise Valley Mall	0.00	0.00	0.00	0.00	25.99	25.99	474.58	500.57	9/2032	12.0	Project begins in FY 33
T84	Tempe South Link: Main St./ Rural Rd. to Southern Ave.	0.00	0.00	0.00	0.00	113.79	113.79	0.00	113.79	12/2015	2.6	See note below.
T85	Central Mesa Link: Main St./Sycamore to Main St./Mesa Dr. *	10.73	0.96	0.12	11.81	178.16	189.98	0.00	189.98	03/2016	3.1	Permission to enter PE in 8/2010
	TOTAL	**38.14**	**64.33**	**0.52**	**103.00**	**1,709.22**	**1,812.22**	**510.25**	**2,322.47**			

Note: Expenditures through FY 2012 are lower than those reported for FY 2011, due to transfer of project development costs to support infrastructure (see Table C-6). Table C-7 covers final design only.

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 2012 (Thousands)	Farebox Revenues through FY 2012 (YOE Dollars)	Annual Average Boardings through FY 2012 (Thousands)	Annual Average Farebox Revenues through FY 2012 (YOE Dollars)	Other Project Information
T1	Ahwatukee Connector	2031	14.7	30.0					
T2	Ahwatukee Express	2008	20.8	160.3	654.0	928,635	218.0	309,500	
T3	Anthem Express	2031	30.4	77.4					
T4	Apache Junction Express	2027	37.4	76.4					
T5	Arizona Avenue Arterial BRT	2011	12.0	152.9	356.4	314,368	178.2	157,200	
T6	Avondale Express	2020	19.0	77.6					
T7	Black Canyon Freeway Corridor	2031	16.6	67.7					
T8	Buckeye Express	2028	43.7	66.9					
T9	Chandler Boulevard Arterial BRT	2034	18.5	226.6					
T10	Deer Valley Express	2008	13.6	188.2	900.2	1,391,804	300.1	463,900	
T11	Desert Sky Express	2008	22.6	89.1	520.4	523,880	173.5	174,600	
T12	East Loop 101 Connector	2009	44.6	73.2	29.8	70,259	7.4	17,600	
T13	Grand Avenue Limited	2013	25.9	158.4	63.0	38,174			
T14	Loop 303 Express	2031	38.1	77.8					
T15	Main Street Arterial BRT	2009	13.0	385.1	1,127.7	868,803	281.9	217,200	
T16	North Glendale Express	2008	29.6	94.6	231.8	294,980	46.4	59,000	
T17	North I-17 Express	2031	34.4	87.6					
T18	North Loop 101 Connector (Surprise to Scottsdale)	2008	31.6	105.3	57.5	74,520	19.2	24,800	
T19	Papago Fwy Connector	2009	30.0	26.4	157.5	129,318	39.4	32,300	
T20	Peoria Express	2028	24.1	73.6					
T21	Pima Express	2028	35.4	72.2					
T22	Red Mountain Express	2009	32.8	54.4	154.2	195,714	38.6	48,900	
T23	Red Mountain Fwy Connector	2031	19.2	78.5					

Map Code	Route	Service Start (Fiscal Year)	Route Length (Miles)	Annual Bus Miles of Service (Thousands)	Total Boardings through FY 2012 (Thousands)	Farebox Revenues through FY 2012 (YOE Dollars)	Annual Average Boardings through FY 2012 (Thousands)	Annual Average Farebox Revenues through FY 2012 (YOE Dollars)	Other Project Information
T24	Santan Express	2031	44.9	228.9					
T25	Scottsdale/Rural Arterial BRT	2016	13.2	282.8					
T26	South Central Avenue	2015	9.4	114.8					
T27	South Central Avenue Arterial BRT	2031	11.4	120.9					
T28	SR 51 Express	2008	22.3	128.3	541.6	701,856	180.5	234,000	
T29	Superstition Fwy Connector	2027	17.5	26.8					
T30	Superstition Springs Express	2031	31.9	162.5					
T31	West Loop 101 Connector	2009	31.4	64.4	175.5	174,766	43.9	43,700	
	TOTAL				**4,969.6**	**5,707,074**	**1,527.0**	**1,782,700**	

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 2012 (Thousands)	Farebox Revenues: through FY 2012 (YOE Dollars)	Annual Average Boardings: through FY 2012 (Thousands)	Annual Average Farebox Revenues: through FY 2012 (YOE Dollars)	Other Project Information
T40	59th Avenue	2014	16.2	394.2					
T41	83rd Avenue/75th Avenue	2023	21.4	542.4					
T42	99th Avenue	2031	16.5	401.3					
T43	Alma School Rd.	2018	19.1	523.5					
T44	Arizona Avenue/Country Club	2012	16.3	462.4	477.0	375,981	477.0	376,000	
T45	Baseline Road	2015	19.6	586.1					
T45	Dobson Road	2009	15.7	481.7	2,609.7	1,721,677	652.4	430,400	
T45	Southern Avenue	2009	28.1	961.8	5,652.2	3,960,380	1,413.1	990,100	
T46	Bell Road (via 303)	2024	38.1	1,138.5					
T47	Broadway	2018	27.8	776.3					
T48	Buckeye Road (Litchfield Road to Central Ave.)	2031	22.7	586.5					
T49	Camelback Road	2025	28.5	851.2					
T50	Chandler Blvd.	2008	32.7	768.5	1,765.3	1,788,164	353.1	357,600	
T51	Dunlap/Olive Avenue	2031	14.3	411.7					
T52	Dysart Road	2030	21.0	311.9					
T53	Elliot Road	2013	21.9	600.0					
T54	Gilbert Road	2010	20.9	519.1	656.9	502,090	219.0	167,400	
T55	Glendale Avenue	2008	32.7	965.2	7,477.8	7,204,836	1,495.6	1,441,000	
T56	Greenfield Road	2022	15.2	369.3					
T57	Hayden/McClintock	2021	29.7	827.0					
T58	Indian School Road	2031	30.4	879.1					
T59	Litchfield Road	2032	21.5	523.8					
T60	Main Street	2009	17.3	406.7	2,321.0	1,487,219	580.3	371,800	
T61	McDowell/McKellips	2014	41.8	1,250.2					
T62	Peoria Ave./Shea	2030	43.0	1,506.1					
T63	Power Road	2011	14.2	345.2	158.7	158,945	79.4	79,500	

Map Code	Route	Service Start (Fiscal Year)	Route Length (Miles)	Annual Bus Miles of Service (Thousands)	Total Boardings through FY 2012 (Thousands)	Farebox Revenues through FY 2012 (YOE Dollars)	Annual Average Boardings through FY 2012 (Thousands)	Annual Average Farebox Revenues through FY 2012 (YOE Dollars)	Other Project Information
T64	Queen Creek Road (Pecos P&R to Power Road)	2031	12.0	293.4					
T65	Ray Road	2023	18.4	447.9					
T66	Scottsdale/Rural	2007	28.9	1,193.0	9,039.2	6,382,763	1,506.5	1,063,800	
T67	Tatum / 44th Street	2031	22.8	682.2					
T68	Thomas Road	2031	26.7	770.5					
T69	University Drive (to Ellsworth Road)	2016	27.8	802.2					
T70	Van Buren	2021	23.4	711.5					
T71	Waddell/Thunderbird	2024	27.9	692.4					
	TOTAL				**30,158.0**	**23,582,056**	**6,776.4**	**5,277,600**	

Appendix D

2012 Annual Report Data Sources

2012 ANNUAL REPORT DATA SOURCES

- **Total costs and future program years for freeway/highway program:**

  File: “RTPFP 2006 -2032 (5-23-12) Modified Scenario 10B.xls”
  From: ADOT
  Date: 6/6/2012

- **RARF revenue forecasts:**

  “Maricopa County Transportation Excise Tax – Forecasting Process and Results FY 2012-2026”; ADOT Financial Management Services, October 2011.

- **RARF historical collections:**

  File: “ V:\Revenues\RARF\Ongoing RARF Revenues.xlsx”; compiled by MAG staff from Arizona Department of Revenue data.

- **ADOT funds historical collections:**

  File: “MAG Cash flow10B061312RTPFPrevised_Adj Bonding_Final”
  From: ADOT
  Date: 7/12/2012

- **ADOT funds forecasts:**

  File: “MAG Cash flow10B061312RTPFPrevised_Adj Bonding_Final”
  From: ADOT
  Date: 7/12/2012

- **Freeway/highway expenditures (Appendix A):**

  File: “RogerHerzog2012expenses”
  From: ADOT
  Date: 8/7/2012

- **Arterial program funding sources and uses:**

  File: “UpdatedAR-Chap 7 Tables”
  From: MAG
  Date: 8/14/12

- **Arterial program reimbursements (Appendix B):**

File: “FY13 Draft”
From: MAG
Date: 8/15/12

- **MAG Federal Funding:**

File: “Long range projections with Actuals 8-17-12 Annual Report Input”
From: MAG
Date: 8/17/12

File: “ALCPFedRevenues” (for arterial STP and CMAQ)
From: MAG
Date: 8/16/12

File: “Table 5-1 and 5-3” (for 5307, 5309 and STP-AZ)
From: RPTA
Date: 8/31/12

- **Transit expenditures (Appendix C):**

File: “12 Ann Rep – Transit Apdx Tables”
From: RPTA
Date: 9/18/12

- **Transit program funding sources and uses:**

File: “12 Ann Rep – Chap 8 Tables”
From: RPTA
Date: 8/31/12