Regional Transportation Plan

Final Draft Summary

Maricopa Association of Governments

September 17, 2003

CONTENTS

	Page
INTRODUCTION	**1**
REVENUE AND COST CONSIDERATIONS	**1**
PLAN DEVELOPMENT PROCESS	**2**
REGIONAL TRANSPORTATION REVENUES	**3**
DRAFT PLAN COMPONENTS	**8**
ANALYSIS OF DRAFT PLAN	**14**
PLAN PHASING PRIORITIES	**17**
POLICY CONCEPTS	**31**

APPENDIX A – Goals, Objectives and Performance Measures

APPENDIX B – Draft Plan Elements

APPENDIX C – Performance Measure Results

APPENDIX D – Draft Plan Phasing Priorities

INTRODUCTION

Under the direction of the Transportation Policy Committee (TPC), a new Regional Transportation Plan (RTP) has been developed for the MAG area. The Plan will provide a blueprint for future transportation investments in the region for the next several decades, focusing on the period covering FY 2005 through FY 2026. The last major update of the RTP occurred during the mid-1980s. The new RTP includes all modes of transportation and is based on adopted goals, objectives, and strategies for the future. It is also important to note that the current county-wide, one-half cent sales tax for transportation, which has been crucial in meeting regional transportation needs, will end on December 31, 2005. A new Plan is needed to guide transportation investment decisions for new revenue sources that support the continued development of the transportation system in the region.

The Draft RTP that is presented in this document has been developed through a detailed, comprehensive process that focused on performance based planning. This included the development of a solid policy foundation for future transportation infrastructure decisions. The RTP process has examined future economic and demographic trends, current and future transportation conditions, and potential technology and other factors that could influence transportation demand and how transportation services are provided. In addition, an extensive outreach program has been conducted to obtain public input regarding current transportation concerns and how to address future transportation issues. These efforts have led to the identification of a set of regional transportation goals and objectives to guide the development of the RTP.

In addition to policy issues, the RTP process has also identified and prioritized specific transportation projects and programs to address future transportation needs in the region. This effort considered information and recommendations from a number of background studies that have been conducted for the RTP, including three area transportation studies, corridor studies, a regional freeway bottleneck study, a high capacity transit study, a regional transit study, a high occupancy vehicle lane study, a park-and-ride lot study, and other regional and local transportation studies.

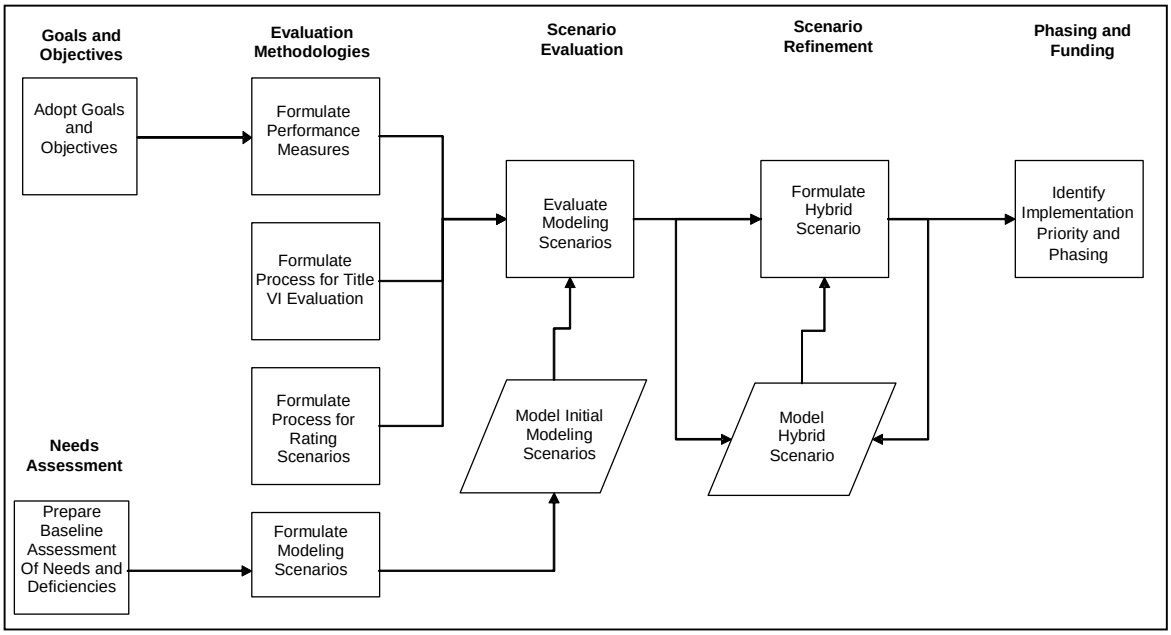
REVENUE AND COST CONSIDERATIONS

As part of the preparation of the Draft Plan, overall revenue and project cost estimates were prepared and are considered to be reasonable for planning purposes. Contingency factors have been applied in recognition of the uncertainties associated with projecting costs and revenues over a 20-year period. In addition to revenues and costs, future bonding strategies represent another area of uncertainty. Bonding can accelerate the timing of project completion, but it also reduces the total work that can be accomplished due to the interest costs associated with bonding. It is important to note that cost, revenue and bonding uncertainties can only be resolved once detailed engineering studies are completed and economic conditions are revealed over time. Periodic updating of the Plan will be needed to respond to these changing conditions and new information.

PLAN DEVELOPMENT PROCESS

The process that was used in the preparation of the RTP is depicted in Exhibit 1. This approach is distinguished by the use of performance-based planning and the application of performance measures in the evaluation of the modeling scenarios. The methodology includes six major components: 1) goals and objectives, 2) needs assessment, 3) evaluation methodologies, 4) scenario evaluation, 5) scenario refinement, and 6) phasing and funding.

Exhibit 1
Plan Development Process



Goals and Objectives

Regional Transportation Plan goals and objectives have been developed. These goals and objectives provide the structure for developing options and evaluating scenarios. Performance measures have also been identified and linked with specific goals and objectives, so that the evaluation process reflects key regional issues and concerns. (See Appendix A for a complete listing of Goals, Objectives and Performance Measures.)

Needs Assessment

A series of background studies have been conducted for the RTP, including area transportation studies, corridor assessments, and modal specific analyses, as well as other regional planning studies. Transportation needs and deficiencies identified in these studies have been assessed as part of the RTP process. In addition, projects identified by MAG member agencies have been tabulated and considered in the assessment of transportation needs in the region.

Evaluation Methodologies

The methodology for assessing system performance and evaluating scenarios has utilized a set of performance measures. The performance measures were used to provide information regarding the advantages and disadvantages of various approaches to meeting future travel demand needs and assess the relative strengths and weaknesses of the modeling scenarios. This was done within the overall context of regional transportation goals and objectives. As part of the overall evaluation framework, procedures for the assessment of Title VI and Environmental Justice considerations were also included.

Scenario Evaluation

The Regional Transportation Plan process included the development of transportation system modeling scenarios that were evaluated using performance measures. Three scenarios were identified for evaluation. The scenarios were structured generally to reflect consistent levels of future funding and project eligibility. The primary goal of the scenarios was to provide a basis for analyzing the performance of potential plan components, rather than to provide a detailed allocation of funding resources.

Scenario Refinement

The analysis of the scenarios provided insights into the tradeoffs associated with different transportation investment strategies and the performance of system components. With the results of the evaluations, a hybrid scenario was defined. This scenario was modeled, evaluated and refined further. Based on this analysis, a final hybrid scenario was developed and evaluated to provide the basis for a plan for adoption.

Phasing and Funding

A final hybrid modeling scenario was established and defined in terms of elements for implementation and phasing, including potential funding mixes. The phasing of these elements considered a range of both quantitative and qualitative factors.

REGIONAL TRANSPORTATION REVENUES

The funding sources that are addressed in the RTP include: 1) ADOT 15 percent funds, 2) ADOT discretionary funds, 3) federal transit 5307 funds, 4) federal transit 5309 funds, 5) federal surface transportation funds (STP), 6) federal congestion mitigation and air quality funds (CMAQ), and 7) extension of the county-wide half-cent sales tax for transportation. The Draft Plan was developed to reflect specific levels of future funding from these sources for the period covering FY 2005 through FY 2026. A total of $15.7 billion (in 2002 dollars) has been projected to be available from these regional revenue sources for the period. All forecasts of revenues are in 2002 dollars to be consistent with project cost estimates, which also are in terms of 2002 dollars.

The regional transportation revenues identified above are the focus of the RTP process, since they represent those resources that can be planned and programmed at the regional

level. However, there are other revenue sources that play an important role in meeting transportation needs. Examples of these include local revenue contributions, city and county shares of the Arizona Highway User Revenue Fund (HURF), local sales taxes and general funds, and developer financed street construction.

The Exhibit 2 summarizes estimated future revenues from regional transportation sources (in 2002 dollars) and the types of projects to which they may be applied. It is estimated that revenues from an extension of the one-half cent sales tax for transportation, net of $500 million set aside for interest expense, would generate approximately $8.5 billion or about 54% of the regional revenues expected to be available over the planning period. Other major sources include ADOT funds (federal and state), $4.1 billion or 26%, and Federal Transit Funds, $1.9 billion or 12%. The remaining 8% is provided to the region through federal highway and congestion mitigation/air quality funds. Individual funding sources and assumptions regarding projected available revenues are described in greater detail following the table.

Exhibit 2
Regional Revenue Sources: FY 05 - FY 26 (millions '02 $'s)

Funding Source	Potential Uses	20-Year Revenues	%
ADOT Funds (Federal and State)	State highway improvements	$4,122	26.1%
5307 Funds (Federal Suballocated)	Bus - capital	$952	6.0%
5309 Funds (Federal Discretionary)	Light rail - capital, Bus - capital	$945	6.0%
STP (Federal Suballocated)	Streets, highways, freeways, transit - capital	$500	3.2%
CMAQ (Federal Allocated)	Air quality and congestion relief projects, transit - capital	$800	5.1%
One-Half Cent Sales Tax Extension	Freeways, highways,major streets,transit	$8,500	53.7%
Total		$15,819	100.0%

ADOT Funds

ADOT funds include both ADOT 15% funds and ADOT Discretionary funds. ADOT 15% funds refer to state statute requirements that 12.6 percent of ADOT's share of the Arizona Highway User Revenue Fund (HURF) be allocated to urban controlled access roads in the MAG and PAG areas. In addition, the State Transportation Board has allocated another 2.6 percent for a total of 15.2 percent. Of this amount, 75 percent is allocated to the MAG area for the MAG Regional Freeway System. A portion of the 15% Funds for the MAG area is already allocated to the completion of the regional freeway program and to the repayment of bonds. The remainder, approximately $860 million over the planning period, is available for additional regional freeway projects on the State Highway System in the MAG area.

ADOT discretionary funds also include the HURF funds allocated to ADOT to support the State Highway System, ADOT Federal Aid Highway Funds, and other miscellaneous sources. A significant portion of the ADOT HURF funds, specified by the legislature as part of the state budgeting process, are used to pay for maintenance, operations and other road related expenses. Of the funds remaining for construction, 37 percent have generally been targeted to the MAG area. Over the planning horizon, this source is expected to generate $4.5 billion for construction on state highways, including freeways and other state highways, in the MAG area.

Exhibit 3
ADOT Funds (millions '02 $'s)

ADOT 15 % Funds	$859
ADOT Discretionary Funds	$4,512
Total ADOT	**$5,371**
Less: Subprogram Allocation *	$660
Less: 2007 MAG Life-Cycle Freeway Allocation	$230
Balance Available	**$4,481**
Less: Allowance for ADOT Contingencies	$359
Net Available	**$4,122**

* Includes: pavement preservation, bridge and safety preservation, traffic engineering, development support (design, utilties, ROW, environmental, planning, engineering support), operating support (training, work zone safety, outdoor advertising control, public information, risk management), minor and major spot improvements, enhancement program, major corridor improvement support, freeway safey patrol.

These two sources have been adjusted as shown in Exhibit 3 to account for other demands that will be placed on the funds, reducing the amount available to $4.1 billion.

Federal Transit 5307 Funds

These Federal Transit formula grants are available to large urban areas to fund bus purchases and other transit development. Purchases made under this program must include 20 percent local match. Over the planning horizon this source is expected to generate $952 million for transit development.

Federal Transit 5309 Funds

These 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 (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. Over the planning horizon, it is estimated that $945 million in 5309 funds for bus and rail transit projects will be made available to the MAG region from the FTA. This estimate includes $50 million per year of 5309 funds for light rail for the period from 2011 to 2025, $120 million of 5309 funds for bus maintenance facilities and $75 million for light rail upgrades. The total does not include the 5309 funds for the 20-mile light rail starter segment (MOS). The cost for this segment is also excluded from the Draft Plan summaries.

Federal Surface Transportation Program (STP) Funds

These are the most flexible Federal Transportation funds and may be used for highways or transit. Some of these funds are dedicated to repayment of bonds issued to achieve accelerated completion of the regional freeway system program. Net of these obligations, $500 million will be available from STP funds for highway and transit projects during the planning period.

Federal Congestion Mitigation and Air Quality Funds

These federal 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 area. They are projected to generate $800 million over the life of the plan.

Extension of One-Half Cent Sales Tax for Transportation

The current half-cent sales tax goes almost entirely to the regional freeway system. A renewed sales tax may be available for a variety of uses including arterials, rail transit and bus expansion, as well as freeways. If renewed, this source is projected to generate an additional $9.0 billion for transportation between 2006 and 2025. To account for

potential financing/bonding costs in connection with the implementation of specific regional projects in the RTP, this figure has been reduced by $500 million to $8.5 billion.

Funding Assumptions

For purposes of developing the financial cash flow for the phasing of the Draft Plan, the following funding assumptions were applied to the regional funding sources:

One-half cent sales tax extension: Sales tax funds collected annually will be distributed annually to the designated funding categories as follows. These are in the same percentages as they are distributed in the Draft Plan.

- Freeway/Highway (56.1)
- Arterial Street (10.2%)
- Transit (33.3%)
- Planning Programs (0.4%).

Additional assumptions regarding the funding from the one-half cent sales tax extension include the following principles:

- "Firewalls" are established so funding cannot be transferred from one category to another; for example, to cover cost overruns in another category.

- Bond proceeds will not be used for non-capital costs, such as maintenance or operations expenses.

- Consistent with the "firewall" principle, bonding for each funding category will be done independently.

Bonding assumptions:

The phasing concepts for the Draft Plan assume revenue bonding, supported by the ½ cent sales tax for capital projects. Bond revenues are distributed to freeway construction, street construction, and transit capital. It is important to note that these bonding levels were assumed for planning purposes. Actual future bonding levels will depend on a variety of factors, including the financial markets and program cash flow requirements.

Matching Requirements

In developing funding allocations among the various Plan components and project types, following local matching requirements were generally assumed:

- 30% Major street projects, including ITS elements.

- 30% Bicycle and pedestrian projects.

- For air quality and transit projects involving Federal funds, minimum Federal match requirements were assumed. Depending on the specific project funding mix, this match may be provided from regional revenue sources.

DRAFT PLAN COMPONENTS

The Transportation Policy Committee developed a Draft Plan that covers transportation improvements and proposed funding allocations for the regional transportation network for the period covering FY 2005 through FY 2026. The Draft Plan includes funding for freeways and highways, streets, regional bus, and high capacity transit, as well as bicycle and pedestrian facilities. In addition to funding highway infrastructure and transit vehicles, funding is also provided for freeway maintenance and regional bus operations. Funding allocations and transportation network maps depicting the components of the Draft Plan are provided in Appendix B.

Exhibit 4 briefly summarizes the distribution of funding among the key components in the Draft Plan. In the Plan, a total of $15.8 billion in transportation improvements, including the allocations for cost contingencies, has been identified. The Plan allocates approximately 57% of the total regional funds to freeway/highway projects, 32% to transit improvements, 7% to major streets projects, and the remaining 2% to other regional programs. In terms of the one-half cent revenue source only, these percentages are very similar, with 56% freeway/highway, 33% transit, 10% major streets, and less than 1% to other programs.

Exhibit 4
Draft Hybrid Funding by Mode
(million '02 $'s)

	One-Half Cent		State & Federal		Total	
	$'s	%	$'s	%	$'s	%
Available $'s	$8,500		$7,319		$15,819	
Freeways/ Highways	$4,774	56.2%	$4,269	58.6%	$9,043	57.3%
Major Streets	$863	10.2%	$602	8.3%	$1,465	9.3%
Transit	$2,831	33.3%	$2,170	29.8%	$5,001	31.7%
Programs	$31	0.4%	$246	3.4%	$277	1.8%
Total	$8,499	100.0%	$7,287	100.0%	$15,786	100.0%
Excess/(Deficit)	$1		$32		$33	

In terms of the type of expenditure, Exhibit 5 indicates that the Draft Plan directs 89% of the total funding to capital items and 11% to operating and maintenance functions. For the one-half cent revenues, these figures are 81% and 19% respectively. The major portion of the $1.7 billion in expenditures on operating and maintenance functions is represented by funding for regional bus operations. This item totals $1.0 billion for the planning period, which amounts to 12% of the $8.5 billion in one-half cent revenues estimated to be available.

Exhibit 5
Draft Hybrid Funding by Function
(million '02 $'s)

	One-Half Cent		State & Federal		Total	
	$'s	%	$'s	%	$'s	%
Available $'s	$8,500		$7,319		$15,819	
Capital	$6,894	81.1%	$7,173	98.4%	$14,067	89.1%
O&M/Programs	$1,604	18.9%	$114	1.6%	$1,718	10.9%
Total	$8,498	100.0%	$7,287	100.0%	$15,785	100.0%
Excess/(Deficit)	$2		$32		$34	

As indicated in the preceding exhibits, the cost of the projects identified in the Draft Plan totals $15.8 billion, while the estimated revenues total $15.8 billion. The $15.8 billion cost figure includes a contingency factor to help account for the uncertainty associated with the planning-level project cost estimates used in the Draft Plan. The dollar amounts represented by this contingency element are tabulated in Exhibit 6.

Exhibit 6
Contingency by Mode
(millions of '02 $'s)

Mode	Project Costs	Contingency	% of Project Costs
Freeways/Highways	$8,407	$637	7.6%
Arterial Streets	$1,345	$120	8.9%
Bus Transit	$2,582	$91	3.5%
Light Rail	$2,178	$150	6.9%
Programs	$263	$14	5.2%
Subtotal	$14,774	$1,011	6.8%
ADOT Set-aside	N/A	359	N/A
Total	$14,774	$1,370	9.3%

The total estimated project costs without the contingency factor is about $14.8 billion compared to total estimated revenues of $15.8 billion. Thus estimated revenues are projected to be about $1.0 billion higher than the estimated project costs, without a contingency allowance. In addition, as shown in Exhibit 3, $359 million of ADOT funds have also been set aside for unforeseen needs over the planning period.

Each of the major components of the Draft Plan is described in greater detail below.

Freeways/Highways

The Draft Plan contains a major freeway/highway element, providing for both new freeway corridors and improvements to existing, or soon to be completed, freeway facilities. These improvements are also shown on the “Freeways/Highways” map included Appendix B.

The new freeway/highway corridors total $3.7 billion, which represents approximately 23% of the $15.8 billion in projects identified by the Draft Plan, and include:

- Loop 303, from I-17 to MC 85, which extends from I-17 near Lone Mountain Road west to Grand Avenue and then south to MC 85, covering a distance of approximately 39 miles;
- Loop 202, from I-10/east (in Chandler) to I-10/west (in Phoenix), covering a distance of approximately 23 miles;
- Williams Gateway, from Loop 202 (Santan Freeway at Hawes Road) south and east to the County line, which connects to the Santan Freeway at Hawes Road, extends east to the Pinal County line and ultimately to US 60, with the segment within Maricopa County funded as part of this plan.
- I-10 Reliever, from Loop 202 to SR 85, which runs parallel to and south of I-10 on the west side of the region; with the segment from Loop 202 to Loop 303 as a freeway, covering a distance of 14 miles; and the segment from Loop 303 to SR 85 as a 2-lane, interim roadway with right-of-way for a freeway, covering a distance of 12 miles.

The Plan also includes widenings and other improvements to the regional freeway/highway network, which total $4.4 billion, representing 28% of the $15.8 billion in projects identified by the Draft Plan. Improvements to the freeway system include 530 lane-miles of additional general purpose lanes, as well as 300 lane-miles of HOV lanes, covering essentially the entire existing system and the loop elements now under construction. As part of these improvements, a number of bottleneck segments on the freeway system will be addressed, including I-17 (Dunlap to McDowell), I-10 (SR 51 to Baseline), and Loop 202 (I-10 to Loop 101, including the Red Mountain/Pima interchange). Also included in the Draft Plan are improvements along Grand Avenue from I-17 to Loop 303. These improvements provide additional lanes along certain segments and construction of grade separations at selected locations.

In addition to new travel lanes, a series of new interchanges with arterial streets on existing freeways is included in the Plan. Improvements at freeway-to-freeway interchanges to provide direct connections between HOV lanes have also been included. Together, these improvements total $396 million, which is about 3% of the project costs identified in the Draft Plan. These projects are identified on the "Freeways/Highways" map included Appendix B.

The Draft Plan also identifies funding for maintenance on the freeway system directed at litter-pickup, sweeping and landscaping restoration. Another aspect in this category is funding for rubberized asphalt/noise mitigation ($75 million). In addition, the need to keep traffic flowing smoothly is addressed through funding identified for freeway management functions. Together, these components total $497 million or 3% of the total.

In total, $9.0 billion, or 57%, of the $15.8 billion in projects identified by the Draft Plan is allocated to the freeway/highway element.

Major Streets

The Draft Plan includes funding for new and improved major streets in the region. These improvements are shown on the "New/Improved Arterials" map included Appendix B. These projects cover a variety of improvements to the major street system, including widening existing streets, improving intersections, and constructing new arterial segments. Examples of these types of projects are the development of a "super-street" along Northern Avenue between Grand Avenue and Loop 303, construction of the Rio Salado Parkway link along the Salt River in South Phoenix, and a series of intersection and arterial improvements in the East Valley. Taken together, all the improvements in the major street category add a total of approximately 860 lane-miles. The total regional funding for these improvements amounts to $1.4 billion.

In addition to street construction, the need to maintain smooth traffic flow is addressed in the Draft Plan, through funding for intelligent transportation systems (ITS) that inform the motorist and coordinate traffic control functions. The Draft Plan directs a total of $50 million to this function.

In total, $1.5 billion, or 9%, of the $15.8 billion in projects identified by the Draft Plan is allocated to the major street element. The Plan calls for a match of 30% from the implementing jurisdiction for projects in this category.

Regional Bus Service

The Draft Plan includes funding for regional bus service in the MAG area. These improvements are shown on the "Proposed Super-grid System" map included the Appendix B. The implementation of the super-grid system would ensure that residents of the region have access to dependable, integrated, region-wide transit services. The nature of the proposed service varies from area-to-area across the region, representing totally new service in some areas, enhancements to service in others, and replacement of existing service in still other areas. The Draft Plan calls for regional funding of both capital and operating costs (net of fare receipts) for this system, ensuring a geographically continuous network that would not be subject to gaps due to the potential inability of certain jurisdictions to cover operating costs.

Express bus and bus rapid transit (BRT) service are also included under regional bus in the Draft Plan. These improvements are shown on the "Proposed Freeway and Arterial BRT Routes" map included Appendix B. The express bus and BRT routes would complement the super-grid system, providing a higher level of service for longer transit trips, with an emphasis on linking key activity centers in regional. The Draft Plan calls for regional funding of both capital and operating costs (net of fare receipts) for this service, as was the case for the super-grid system.

The Draft Plan also includes funding for bus maintenance and passenger facilities. The passenger facilities include both park-and-ride lots and transit centers. The location of passenger facilities is indicated on the "Proposed Freeway and Arterial BRT Routes" map in Appendix B.

In total, $2.3 billion, or 14% of the $15.8 billion in projects identified by the Draft Plan is allocated to the regional bus element. This includes $1.3 billion for capital needs and $1.0 billion for operating costs. A significant portion of the capital needs is devoted to maintenance and passenger facilities. As noted, the Draft Plan does not require a match from local jurisdictions for operating costs related to transit services provided under this element.

Light Rail Transit

The Draft Plan includes funding for the development of an extensive light rail system (LRT) in the MAG area. These LRT segments are also shown on the "Identified High Capacity Corridors" map included in the appendix and represent a total system of 57.7 miles. The Draft Plan addresses different cost elements in the various corridors identified on the map. In addition, it is important to note that, unlike the regional bus element, the Draft Plan does not direct any regional funding to operating costs for LRT.

The LRT corridors addressed in the Draft Plan are listed below, with a brief description of their funding status.

- Minimum Operating System (19th Ave./Bethany Home to Main/Longmore); 20 miles in length; $164 million regional funding identified for regional-support infrastructure.
- Metrocenter Link (19th Ave./Bethany Home to Metrocenter); 5 miles in length; $30 million regional funding identified for regional-support infrastructure and $150 million of 5309 funds for route construction.
- Glendale Link (19th Ave./Bethany Home to Downtown Glendale); 5 miles in length; $30 million regional funding identified for regional-support infrastructure and $150 million of 5309 funds for route construction.
- I-10 West Link (Washington/Central to I-10/79th Ave.); 11 miles in length; $660 million regional funding for route construction.
- Northeast Phoenix Link (Indian School/Central to Paradise Valley Mall); 12 miles in length; $720 million regional funding for route construction.
- Tempe South Link (Main/Rural to Rural/Southern); 2 miles in length; $120 million regional funding for route construction.
- East Mesa Link (Main/Longmore to Main/Mesa Drive); 2.7 miles in length; $150 million regional funding for route construction, with the technology for this segment to be determined.
- Future Regional-Support Infrastructure; $154 million in regional funding.

In total, $2.3 billion, or 15% of the $15.8 billion in projects identified by the Draft Plan is allocated to the LRT element. As noted, funding for this element represents expenditures

on capital items only, and the Plan does not cover operating costs, which would be the responsibility of the implementing local jurisdictions.

Commuter Rail

The Draft Plan provides for continuing development of commuter rail options for the region. A total of $5 million is allocated in the Draft Plan to develop commuter rail options and implementation strategies.

Other Transit Services

In addition to regional bus and LRT, the Draft Plan includes funding for other transit services in the MAG area. These include paratransit services required by the Americans with Disabilities Act (ADA), the regional van pool program, and rural/non-fixed route transit service. (The City of Phoenix will continue to fund ADA paratransit service inside Phoenix with local funds.) Taken together, these other transit items are allocated a total of $332 million in the Draft Plan, which represents approximately 2% of the total $15.8 billion identified in the Plan. Of this total, $121 million is designated for capital items and the remainder for operating costs (net of fare receipts).

Bicycle, Pedestrian and other Regional Programs

This element of the Draft Plan totals $276 million or about 2% of the total $15.8 billion identified in the Plan. The major components in this item are bicycle and pedestrian projects ($132 million), and air quality mitigation projects ($113 million). Plan implementation studies, such as corridor assessments and major investment studies (MIS), are also included in the regional programs element.

The Draft Plan incorporates funding for measures to reduce PM-10 emissions generated by vehicle travel. In FY 2001- FY 2003, $6.7 million in Congestion Mitigation and Air Quality Improvement (CMAQ) funds was committed to purchase 52 PM-10 certified sweepers. An additional $5.8 million in CMAQ funds is programmed to purchase 48 additional PM-10 certified sweepers in the FY 2004-FY 2007 TIP. After FY 2007, it is anticipated that local governments will continue to purchase PM-10 certified sweepers to replace older broom sweepers, expand the area swept, and increase the frequency of sweeping. The RTP assumes that eight PM-10 sweepers will be acquired each year in FY 2008-FY 2010. After FY 2010, it is assumed that five additional PM-10 certified units will be purchased each year to increase the frequency of sweeping and clean new streets in developing areas of the rapidly-growing region.

In the RTP, the paving of dirt roads by local jurisdictions reflects a continuation of current commitments to reduce fugitive dust on unpaved roads with high traffic volumes, eliminate dirt roads in areas of new development, and pave dirt alleys, shoulders, and access points. Consistent with past trends, the Plan assumes that ten centerline miles of high ADT unpaved roads (i.e., 100 ADT or greater) will continue to be paved each year.

ANALYSIS OF DRAFT PLAN

The Draft Plan was evaluated using a set of transportation system performance measures and plan evaluation criteria, which were accepted by the TPC on May 21, 2003. The results of this evaluation are tabulated in Appendix C and discussed in the following section. Title VI/Environmental Justice considerations are also discussed below.

Performance measures and criteria were developed to provide information regarding the advantages and disadvantages of various approaches to meeting future travel needs and assess the relative strengths and weaknesses of transportation network scenarios. To ensure that the evaluation process reflects key regional issues and concerns, each of the measures and criteria was linked with a specific RTP goal and objective. These goals and objectives were developed earlier in the RTP process and approved by the Transportation Policy Committee at their meeting of February 19, 2003.

In addition to their use on the Draft Plan, the performance measures and criteria were applied earlier in the RTP process to evaluate a series of transportation network modeling scenarios. The results were presented in the Alternatives Stage report, dated May 22, 2003. This performance information was utilized to prepare a hybrid network scenario, which provided the basis for the Draft Plan. (Note: The modeling scenarios presented in the May 22, 2003 report were targeted at a $17.1 billion investment level, a funding level needed to include all potential projects in at least one of the scenarios. As previously discussed, the most recent revenue estimates have resulted in a total of $15.8 billion being available. Therefore, the results of the Draft Plan evaluation are not directly comparable to the results of the modeling scenario evaluations.)

Performance Measure Assessment

Values for the transportation performance measures were estimated using the MAG regional transportation demand modeling system. The MAG model was applied to a base network and to the Draft Plan utilizing population, employment, and land use projections for the year 2025. It should be noted that the transit modeling results are preliminary and undergoing continuing refinement. For example, bus ridership levels do not reflect usage from the potential expansion of local bus service from non-regional funding sources. Similarly, LRT ridership does not reflect the use of submodels for Sky Harbor and special events.

The results of the modeling are presented, by goal and objective, in the table in Appendix C. The highlights of the performance of the Draft Plan compared to the base case and the general conclusions of the evaluation are provided below:

- The $15.8 billion that would be invested in multi-modal transportation improvements in the Draft Plan reduce regional PM peak period delay to half of

  what it would be without the investment, 1,754,851 hours compared to 907,230 hours.

- On a per capita basis, PM peak period delay would result in a decrease of 49% from the base scenario.
- On arterial streets, when compared to the base case, the Draft Plan has 50% fewer intersections operating at level-of-service "F", 34% vs. 17%.
- The Draft Plan has a balanced combination of freeway, major arterial, and transit improvements that results in 29% lower peak-period hours of travel per capita.
- The Draft Plan has 4% higher VMT per capita. Total travel is estimated at 184.8 vehicle-miles for the base case and 192.3 vehicle-miles for the Draft Plan. However, even with higher travel levels in the Draft Plan, the annual crash rate per 100 million vehicle miles traveled dropped from 4.22 in the base case to 3.93, due to more travel carried by freeways.
- New freeways in the Draft Plan provide congestion relief and link future growth areas to the regional transportation network. The Draft Plan has 57% higher average PM peak period freeway speed, 22 mph vs. 14 mph.
- Congested lane miles of freeways (level-of-service "E" or worse), as a percentage of the total, improves from 58% in the base network to 48% in the Draft Plan.
- In the Draft Plan, total transit boardings increase by 36%.
- With the expanded transit network coverage provided in the Draft Plan, there are 22% more jobs within ¼ miles of transit compared to the base.

Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color and national origin by recipients and sub-recipients of Federal funds and prohibits exclusion from participation in, denial of benefits, or being subjected to discrimination under any program or activity receiving Federal financial assistance. Additional Federal and state laws and directives prohibit discrimination on the basis of religion, age, gender, handicap or disability. The Act and its related laws and directives hereinafter will be referred to collectively as Title VI. In 1994, Executive Order 12898 directed every Federal agency to make Environmental Justice (EJ) part of its mission by identifying and addressing the effects of all programs, policies and activities on minority and low-income populations.

MAG, as the designated Metropolitan Planning Organization (MPO) in the region, is a recipient and sub-recipient of Federal funds. Acceptance of Federal funds requires that MAG address the Federal laws and directives relating to nondiscrimination in its planning and programming processes.

The Maricopa Association of Governments employs several methods to comply with Title VI and EJ issues in its transportation planning and programming processes. MAG's effort to incorporate environmental justice into regional transportation planning is an ongoing effort. Reaching out to disadvantaged communities and assessing their needs and interests is paramount to ensuring the continued quality of life of all residents in the metropolitan area.

For the Title VI and Environmental Justice assessment analysis of the Draft Plan, U.S. Census 2000 data was used to determine communities of concern. Communities of concern are census tracts that contained higher than the countywide average for any of the following population groups: minority, low income, aged populations, populations with mobility disabilities, and female heads of households with children.

The proposed Draft regional Transportation Plan dedicates 58 percent of the total available funds to freeways; 32 percent of the total available funds to transit; 8 percent of the total available funds to streets; and 2 percent of the total available funds to planning, and bicycle and pedestrian facilities. The Title VI and Environmental Justice assessment for each mode are summarized below:

- *Freeways/highways:* With the exception of the population aged 60 and older, over 40 percent of census tracts (with a higher than countywide average percentage of communities of concern) are located within one-quarter mile of a freeway/highway component of the Draft Plan. This compares to 26 percent for all other tracts. Many of the tracts with a higher than average percentage of population aged 60 and older are located in the northern portion of the MAG Area. These tracts are well served by the freeway network, but fall outside the quarter mile buffer of the proposed alignments.

- *New/improved Arterial Streets:* Less than 20 percent of the census tracts (with a higher than countywide average percentage of communities of concern) are directly affected by the RTP improvements that consist of arterial street improvements and new arterial streets. The Draft Plan includes a limited number of these improvements, as most arterial are constructed by the local jurisdictions. Most of the regional arterial improvements are located in the peripheral parts of the region, outside of the areas where the majority of the census tracts with communities of concern are located.

- *Transit Network:* Nearly 90 percent of census tracts (with a higher than countywide average percentage of communities of concern) are served by the proposed RTP transit network. Local transit service that is not regionally funded may serve much of the rest. RTP funding for transit represents approximately one-third of the overall funding, demonstrating a continuing commitment to provide transportation options for low income residents.

MAG has demonstrated a commitment to listening to residents through the Community Outreach Associate Program and the numerous events and activities that have been attended. Through the continued expression of this outreach effort, transportation planning for the region can equitably address the needs of all residents.

Environmental justice does not create an entitlement for transportation projects and their benefits; it is an effort to assure that the proposed transportation program does not have discriminatory effects or disparate impacts on any populations, especially those traditionally disadvantaged groups that were identified through this study. The results of this analysis demonstrate MAG's commitment to equity and environmental justice in the RTP.

PLAN PHASING PRIORITIES

The sequence in which the components of the Regional Transportation Plan are implemented over time is a key element in the planning process. In the following section, phasing concepts for freeways and highways, traffic interchanges, arterial streets, light rail transit, and the regional bus system are discussed. Schedules and network maps depicting the phasing of the Draft Plan are provided in Appendix D.

The implementation of the Draft Plan was divided into four phases, covering the planning period as follows:

- Phase I FY 2005- FY 2010
- Phase II FY 2011- FY 2015
- Phase III FY 2016- FY 2020
- Phase IV FY 2021- FY 2026

In order to prepare the phasing plan, modal elements were reviewed using a series of phasing factors, which are described below. In addition, a cash flow matrix was developed to quantify available funding by mode on an annual basis. The funding assumptions followed in preparing this matrix were previously described in the section labeled "Regional Transportation Revenues". Using the phasing factors as a guide, plan elements were matched against cash flows to identify a project implementation sequence constrained by available revenues. Project listings in Appendix D provide traffic volumes on freeway, highway and arterial projects addressed in the phasing process.

Plan Phasing Factors

The preparation of the phasing plan considered a number of factors. These factors responded to the goals and objectives addressed in the plan evaluation process. Objectives addressed included items such as: Objective 2A - Maintain level of service; Objective 2B - Provide residents and employers with access; Objective 4A - Use public resources effectively and efficiently; Objective 4C - Develop a regionally balanced plan; and Objective 4D - Recognize previously authorized corridors. The factors considered in phasing the elements of the Draft Plan are discussed below.

Traffic demand and congestion: Traffic demand served and levels of congestion, taking into account traffic volumes throughout the planning period, are key considerations in phasing plan elements. Segments with higher volumes and greater congestion early in the period are considered for implementation earlier.

System continuity: The phasing of facility development needs to expand the highway network in a logical sequence, so that system continuity, connectivity and efficiency are maintained to the maximum degree possible.

Revenue availability: The cash flow patterns from revenue sources obviously limit the amount of work that can be accomplished within a given period of time. In addition, since revenue streams are less in the early years and greater in the later years, generally more construction can be phased in the later parts of the planning period.

Bonding capacity and strategies: Through bonding, funding can be shifted to earlier phases in the planning period, but this has to be weighed against the reduction in total revenues available for constructing projects, resulting from interest costs. A conservative bonding scenario, based on a $500 million allocation for interest costs, was assumed in developing the phasing plan.

Cost: Large projects with high total costs may need to be spread over a period of years to accommodate cash flows.

Project development process: The implementation of freeway and highway projects requires a complex development process. The early stages of this process involve 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. All these steps must be sequenced over a multi-year period.

Project readiness: Certain projects have already been under study for a number of years and are further along in the highway development process. These projects would continue to proceed through the process from their current stage.

Concurrent progress on multiple projects: Major needs for freeway and highway improvements exist throughout the MAG area. The phasing of projects should proceed so that improvements to the roadway network can be accomplished throughout the planning period in all areas of the region.

Freeway/Highway Phasing

The phasing concepts for the freeway/highway element of the Draft Plan are listed in Exhibits 7 through 10, which address new corridors, widenings, other capacity improvements, and new interchanges. The phase designation for projects in these tables indicates the period in which construction is programmed. In Appendix D, Maps D-1 and D-2, as well as Tables D-1 and D-2, provide more detailed cost and phasing information by project. It should be noted that this information does not include items that have not been specifically phased, such as maintenance and freeway management system (FMS) projects. The overall pattern of phasing for the freeway/highway element is discussed below.

Exhibit 7: Phase I Projects - Freeways/Highways/Arterials

Facility	Segment
New Freeways	
Loop 202	South Mountain: I-10 (West) to 51st Ave
Loop 303	I-17 (Interim Connection) to El Mirage Rd
New General Purpose Lanes	
I-10	101L to I-17
I-10	40th St to Baseline Road (CD Roads)
I-10	Loop 202 Interchange to Riggs Rd
I-17	Carefree Hwy to Loop 101
Loop 202	Red Mountain: I-10/SR 51 Interchange to Rural Rd
SR 85	I-10 to Hazen Rd
SR 85	Hazen Rd to I-8
US 60	Superstition: I-10 to Loop 101
US 60	Superstition: Val Vista to Power
US 60	Grand: 83rd Ave to Loop 101 (programmed projects)
TBD	Wickenburg Bypass
New High Occupancy Vehicle Lanes	
I-10	Loop 202 Interchange to Riggs Rd
I-17	Carefree Hwy to Loop 101
Loop 101	Pima: Princess to Loop 202/Red Mtn
Loop 101	Price: Loop 202/Red Mtn to Baseline Rd
Loop 101	Price: Baseline Rd to Loop 202/Santan
Loop 202	Red Mountain: Loop 101 to Gilbert
SR 51	Loop 101 to Shea Blvd
US 60	Superstition: Val Vista to Power
New System HOV Ramp Connections	
SR 51	L101/Pima
New Interchanges	
I-10	Bullard Rd
I-17	Jomax Rd
Loop 101	Bethany Home Rd
Loop 101	64th St
Arterial Improvements/Construction	
101L North Frontage	Princess Dr to Scottsdale Rd
101L South Frontage	Hayden Rd to Princess Dr
Beardsley Rd	Loop 101 to Lake Pleasant Parkway
Black Mtn Pkway	SR 51 to Blk Mtn Pkwy
Broadway Rd	Dobson Rd to Country Club Dr
Dobson Rd	Salt River
El Mirage Rd	Paradise Ln over Grand Ave to Thunderbird Rd
Germann Rd	Gilbert Rd to Power Rd
Greenfield Rd	University Rd to Baseline Rd
McKellips Rd	Gilbert Rd to Power Rd
Mesa Dr	Broadway Rd to US 60
Northern Ave	Dysart Rd to Loop 303 (ROW, interim construction)
Pecos Rd	Ellsworth Rd to Meridian Rd
Pima Rd	S. Scottsdale City Limits to 90th St
Shea Blvd	Palisades Blvd to Saguaro Blvd
Southern Ave	Country Club Dr to Recker Rd
Thomas Rd	Gilbert Rd to Val Vista Dr
Arizona Ave/Ray Rd	Intersection Improvement
Chandler Blvd/Alma School	Intersection Improvement
Chandler Blvd/Dobson	Intersection Improvement
Dobson/Guadalupe	Intersection Improvement
Elliot/Cooper	Intersection Improvement
Guadalupe/Cooper	Intersection Improvement
Guadalupe/Gilbert	Intersection Improvement
Ray/Alma School	Intersection Improvement
Warner/Cooper	Intersection Improvement

Exhibit 8: Phase II Projects - Freeways/Highways/Arterials

Facility	Segment
New Freeways	
Loop 202	South Mountain: I-10 (West) to 51st Ave
Loop 202	South Mountain: 51st Ave to Loop 202/I-10
Loop 303	I-17 to US 60 (Grand Avenue)
Loop 303	US 60 (Grand Avenue) to I-10
New General Purpose Lanes	
I-10	Loop 303 to Dysart
I-10	Dysart to 101L
I-10	SR 51 Interchange to 40th St (CD Roads)
I-10	Baseline Rd to Loop 202 Interchange
I-17	Loop 101 to Arizona Canal (between Peoria & Dunlap)
Loop 101	Pima: Shea Blvd to Loop 202/Red Mtn
Loop 202	Red Mountain: Rural Rd to Loop 101
Loop 202	Red Mountain: Loop 101 to Gilbert
US 60	Grand: Loop 101 to Loop 303
New High Occupancy Vehicle Lanes	
I-10	Loop 303 to Dysart
I-10	Dysart to 101L
Loop 101	Pima: I-17 to SR 51
Loop 101	Pima: SR 51 to Princess
Loop 202	Santan: I-10 to Dobson
Loop 202	Santan: Dobson to Val Vista
New System HOV Ramp Connections	
Loop 202	I-10
New Interchanges	
I-10	Perryville Rd
I-17	Dixileta Dr
Loop 101	Beardsley Rd
US 60	Superstition: Meridian Rd
US 60	Superstition: Lindsay Rd
Arterial Improvements/Construction	
Arizona Ave	Ocotillo to Hunt Hwy
Beardsley Rd	Loop 101 to Lake Pleasant Parkway
El Mirage Rd	Paradise Ln over Grand Ave to Thunderbird Rd
Gilbert Rd	Salt River
Guadalupe Rd	Power Rd to Meridian Rd
Lake Pleasant Parkway	Beardsley Rd to Loop 303
McKellips Rd	Salt River
McKellips Road	Loop 101 Pima - SRP-MIC
Pima Rd	Deer Valley to Happy Valley & Dynamite to Cave Crk
Power Rd	Baseline Rd to Williams Field Rd
Queen Creek Rd	Arizona Ave to Power Rd
Rio Salado Pkwy	7th St to Loop 202
Scottsdale Rd	Thompson Peak to Happy Valley
Sonoran Pkwy	Central to 32nd Ave
Val Vista Dr	Warner Rd to Pecos Rd
Arizona Ave/Chandler Blvd	Intersection Improvement
Chandler Blvd/Kyrene	Intersection Improvement
Ray/Dobson	Intersection Improvement
Ray/McClintock	Intersection Improvement
Ray/Rural	Intersection Improvement
Warner/Greenfield	Intersection Improvement

Exhibit 9: Phase III Projects - Freeways/Highways/Arterials

Facility	Segment
New Freeways	
Loop 303	I-10 to I-10R
WGP	Williams Gateway Parkway
New General Purpose Lanes	
I-17	Arizona Canal to McDowell Rd
US 60	Superstition: Crismon to Meridian Road
New High Occupancy Vehicle Lanes	
I-17	I-10 (west) to I-10 (east)
Loop 101	Agua Fria: I-10 to Grand Ave
Loop 202	Red Mountain: Gilbert to Higley
US 60	Superstition: Crismon to Meridian Road
New System HOV Ramp Connections	
Loop 202	L101/Price
Arterial Improvements/Construction	
Carefree Highway	Cave Creek Rd to Scottsdale Rd
El Mirage Rd	Bell Rd to Jomax Rd
El Mirage Rd	Thunderbird to Northern Ave
Higley Rd Pkwy	US 60 to 202L (Red Mt.)
Higley Rd Pkwy	Grade Separations
Jomax Rd	Loop 303 to Sun Valley Pkwy (ROW Protection)
Meridian Rd	Baseline Rd to Germann Rd
Miller Rd	Loop 101 Underpass (Princess to Center)
Northern Ave	Grand Ave to Loop 101
Pima Rd	Happy Valley to Dynamite
Price Rd Extension	Loop 202 to I-10
Runway Tunnel	Scottsdale Airport
Scottsdale Rd	Happy Valley to Carefree Hwy
Val Vista Dr	University Dr to Baseline Rd
Country Club/University	Intersection Improvement
Dobson/University	Intersection Improvement
Elliot/Gilbert	Intersection Improvement
Guadalupe/Val Vista	Intersection Improvement
Ray/Gilbert	Intersection Improvement

Exhibit 10: Phase IV Projects - Freeways/Highways/Arterials

Facility	Segment
New Freeways	
I-10 R	SR 85 to Loop 303 (Interim Facility)
I-10 R	Loop 303 to Loop 202/South Mountain
New General Purpose Lanes	
I-10	SR 85 to Loop 303
I-17	New River to Anthem Way
I-17	Anthem Way to Carefree Hwy
Loop 101	Agua Fria: I-10 to Grand Ave
Loop 101	Agua Fria: Grand Ave to I-17
Loop 101	Pima: I-17 to SR 51
Loop 101	Pima: SR 51 to Shea Blvd
Loop 101	Price: Baseline Rd to Loop 202/Santan
Loop 202	Red Mountain: Gilbert to Higley
Loop 202	Red Mountain: Higley to US 60
Loop 202	Santan: I-10 to Dobson
Loop 202	Santan: Dobson to Higley
Loop 202	Santan: Higley to US 60
SR 51	Loop 101 to Shea Blvd
US 60	Grand Avenue: Loop 101 to Van Buren (includes grade separations at 51st, 35th & 19th Ave)
New High Occupancy Vehicle Lanes	
I-17	Anthem Way to Carefree Hwy
Loop 101	Agua Fria: Grand Ave to I-17
Loop 202	Red Mountain: Higley to US 60
Loop 202	Santan: Val Vista to Higley
Loop 202	Santan: Higley to US 60
New System HOV Ramp Connections	
Loop 101	I-10
Loop 101	I-17
Loop 202	US 60/Superstition
New Interchanges	
I-10	Chandler Heights
I-10	El Mirage
I-17	Dove Valley Rd
Loop 202	Mesa Dr
Arterial Improvements/Construction	
Baseline Rd	Power Rd to Meridian Rd
Crismon Rd	Broadway Rd to Germann Rd
Elliot Rd	Power Rd to Meridian Rd
Germann	Ellsworth Rd to Signal Butte Rd
Gilbert Rd	Loop 202 (Santan) to Hunt Hwy
Greenfield Rd	Elliot Rd to Warner Rd
Happy Valley Rd	Loop 303 to 67th Ave
Happy Valley Rd	67th Ave to I-17
Hawes Rd	Broadway Rd to Ray Rd
McKellips Rd	E of Sossaman to Meridian Rd
Northern Ave	Loop 101 to Loop 303 (ultimate construction)
Power Rd	Williams Field Rd to Chandler Heights
Ray Road	Val Vista Dr to Power Rd
Ray Road	Sossaman Rd to Meridian Rd
Shea Blvd	Loop 101 to SR 87
Signal Butte Rd	Broadway Rd to Pecos Rd
Southern Ave	Sossaman Rd to Meridian Rd
Union Hills Dr	Hayden Rd to Pima Rd
University Dr	Val Vista Dr to Hawes Rd
Arizona Ave/Elliot	Intersection Improvement
Country Club/Brown	Intersection Improvement
Elliot/Greenfield	Intersection Improvement
Elliot/Higley	Intersection Improvement
Elliot/Val Vista	Intersection Improvement
Gilbert/University	Intersection Improvement
Guadalupe/Greenfield	Intersection Improvement
Guadalupe/Power	Intersection Improvement
Kyrene/Ray	Intersection Improvement
Lindsay/Brown	Intersection Improvement
Stapley/University	Intersection Improvement

Phase I: In this phase, the emphasis is on addressing the currently congested parts of the system, moving forward with projects that are at a more advanced design stage, preparing for the construction of new corridors and beginning investigations of complex design issues. Key projects include construction of improvements on I-10, Loop 202L (Red Mountain), US 60 (Superstition), including HOV lanes on Loop 101L (Pima/Price). Design and right-of-way preservation on the 303L and South Mountain freeways, as well as location and design studies on the I-10 Reliever and the Williams Gateway Parkway are also included. In order to provide system continuity and connectivity, an interim connection of Loop 303 to I-17 is constructed. In addition, an interim facility in the South Mountain corridor from I-10 (west) to 51st Avenue is constructed.

Phase II: A major accomplishment in this phase is the completion of Loop 303 between I-10 and I-17, as well as the completion of the South Mountain Freeway. Early in the RTP process, the TPC identified these projects as being critical elements of the regional system. Also in Phase II, work continues to move forward on the more congested elements of the system, with the addition of general purpose lanes on parts of I-17, I-10, Loop 101 (Pima), Loop 202 (Red Mountain), and US 60 (Grand Avenue). HOV lanes are also added on other parts of 101L and 202L. Right-of-way acquisition proceeds on the I-10 Reliever and Williams Gateway Freeways.

Phase III: In this phase, work is completed on capacity improvements on I-17 between McDowell Road and Dunlap Avenue. Although this project is on a stretch of freeway with currently high congestion, its engineering complexity and need for large amounts of funding in a single block necessitated focusing the work in Phase III. Other key projects in this phase include additional mileage of HOV lanes on Loop 101 and 202, as well as construction of the Williams Gateway Freeway.

Phase IV: Phase IV completes the planned improvements on the system with general purpose lane widening and completion of a full HOV network. Another key accomplishment in this phase is the construction of system interchange HOV ramp connections. Phase IV also includes the construction of the I-10 Reliever as a full freeway between the South Mountain and Loop 303, as well as an interim connection between Loop 303 and SR 85.

New interchanges are phased throughout the planning period, as well as HOV ramp connections at freeway-to-freeway interchanges.

Arterial Street Phasing

The phasing concepts for the freeway/highway element of the Draft Plan are also listed in Exhibits 7 through 10. The phase designation for projects in these tables indicates the period in which construction is programmed. In Appendix D, Map D-3 and Table D-3 provide more detailed cost and phasing information by project. It should be noted that these tables do not includes items that have not been specifically phased, such as arterial intelligent transportation system (ITS) projects.

As noted previously, a range of factors was taken into account in developing the phasing sequence for the various plan elements. In the case of arterial streets, one general guide was as follows: 1) projects with existing (year 2003) volume greater than 30,000 vehicles per day (vpd) were targeted for Phases I or II; 2) projects with 2015 volume greater than 40,000 vpd were targeted for Phases I or II; and 3) projects with 2025 volumes greater than 50,000 vpd were targeted for Phases II or III. Projects not meeting any of these criteria were generally targeted for Phase IV, but may have been placed in other phases based on budget and regional balance. The overall pattern of phasing for the arterial street element is discussed below.

Phase I: In this phase, key accomplishments include right-of-way protection and construction on the western end of the Northern Avenue "Super Street" project, widening of Pima Road from 90th Street to McKellips and a series of arterial and intersection projects in the East Valley.

Phase II: Several major links, including the Rio Salado Parkway, the Lake Pleasant/Beardsley link between Loop 101 and Loop 303 and the Sonoran Desert Parkway, are completed in Phase II.

Phase III: In Phase III, key accomplishments include improvements on El Mirage Road to move traffic in the northwest part of the region, construction of the Price Road Extension, completion of the Scottsdale Airport Tunnel and continued intersection and arterial improvements in the East Valley.

Phase IV: The arterial street program is completed in Phase IV, with major improvements to Happy Valley Road the northwest part of the region, completion of the last segment of the Northern Avenue "Super Street", and final intersection and street projects in the East Valley.

Regional Bus Phasing

Regional funding, with no local match requirement, has been identified in the Draft Plan for regional bus route operations. The regional bus network includes the super-grid system and bus rapid transit system. The phasing for these systems is summarized in Exhibit 11, which covers new routes, as well as enhancements to existing bus transit services. In Appendix D, Map D-4 and D-5, as well as Table D-4, provide more detailed cost and phasing information by project.

The Draft Plan includes a network of regionally significant bus corridors. These corridors, collectively known as the "super-grid" network, provide regional connections across municipal jurisdictions at consistent levels of service. The super-grid addresses a major weakness of the current bus system, the wide variations in service hours and frequency created by local funding of routes.

The bus rapid transit (BRT) system provides riders with higher speed regional connections that serve two distinct trip needs. One type of trip addressed by this system is the traditional suburb to central city commute, the other trip need addressed is the

Exhibit 11: Regional Bus Services Phasing*

Segment	Phase (Begin Service)
Freeway Express/BRT	
North Loop 101 Connector Surprise to Scottsdale P&R)	I
North Glendale Express	I
Papago Fwy Connector (to West Buckeye P&R)	I
West Loop 101 Connector (to North Glendale P&R)	I
East Loop 101 Connector	I
Red Mountain Express	I
Main Street Arterial BRT	I
Desert Sky Express	I
Apache Junction Express	I
Arizona Avenue Arterial BRT	I
Buckeye Express (to West Buckeye P&R)	I
Superstition Fwy Connector	II
Pima Express (To Airpark P&R)	II
Grand Avenue Limited	II
Scottsdale/Rural Arterial BRT	II
Peoria Express (to Peoria P&R)	II
S. Central Avenue	II
South Central Avenue Arterial BRT	II
Black Canyon Freeway Corridor	II
Ahwatukee Connector	III
Santan Express	III
Anthem Express	III
Red Mountain Fwy Connector	III
Superstition Springs Express	III
Deer Valley Express	III
Avondale Express	III
North I-17 Express	IV
Loop 303 Express	IV
SR. 51 Express	IV
Chandler Boulevard Arterial BRT	IV
Ahwatukee Express	IV
Regional Passenger Support Services	
Supergrid Route	
Scottsdale/Rural	I
Glendale Avenue	I
Main Street	I
Baseline/Southern/Dobson ext	I
Arizona Avenue/Country Club	I
Gilbert Road	I
Chandler Blvd.	I
University Drive (to Ellsworth Road)	II
Camelback Road	II
Broadway	II
Elliot Road	II
Alma School Rd.	II
Hayden/McClintock	II
Peoria Ave./Shea (3)	II
Dysart Road	II
59th Avenue	II
McDowell/McKellips	II
Power Road	II
Tatum/44th Street	II
Ray Road	II
Van Buren	II
Queen Creek Road (Pecos P&R to Power Road)	III
Bell Road (via 303)	III
Waddell/Thunderbird	III
Thomas Road (2)	III
Buckeye Road (Litchfield Road to Central Ave.)	III
Indian School Road	III
Dunlap/Olive Avenue	III
99th Avenue	III
83rd Avenue/75th Avenue	IV
Litchfield Road	IV
Greenfield Road	IV
Regional Passenger Support Services	

* Runs through calendar year 2025

suburb to suburb trip. This latter trip type is continuing to grow in significance as the region sees the development of multiple suburban employment centers.

The overall pattern of phasing for the regional bus transit component is discussed below.

Phase I:

Super-grid: In Phase I, the emphasis is on providing consistent levels of service across several key super-grid routes in the east, central and west valleys. These routes include Baseline/Southern, Glendale Avenue, Scottsdale/Rural, Chandler Blvd. Arizona Avenue and Gilbert Road. Also part of this first phase is service on Main Street in Mesa from the east terminus of the initial operating segment of the light rail transit system to Power Road. Rural connectivity will also be addressed in this phase with the initiation of service on two routes, one connecting Wickenburg with the transit center at Metro Center Mall in Phoenix, the other connecting Gila Bend with the Transit Center at Desert Sky Mall at 75th Avenue.

Bus Rapid Transit: The first phase of the BRT program will expand the reach of the express bus network by providing several key super-grid routes in the east, central and west valleys. Initial routes to be implemented include the Deer Valley Express running on I-17 from the Deer Valley park & ride to Central Station in Phoenix, the Grand Avenue limited which will run from Surprise to Phoenix on Grand Avenue, the Superstition Freeway Express connecting the communities of Mesa, Tempe and Phoenix by way of US 60, I-10 and Loop 202, and South Central Avenue which will provide connections between Central Station and the emerging south Phoenix residential and commercial areas.

Phase II:

Super-grid: Like in the previous phase, the objective is to provide consistent levels of service across several key super-grid routes in the east, central and west valleys. These routes include Peoria/Shea, Camelback, McDowell/McKellips Van Buren, University Broadway, Elliot, Ray Road, Hayden/McClintock, Dysart Road, 59th Avenue, Power Road, and Alma School Road.

Bus Rapid Transit: In this phase, the system will continue to grow with the addition of arterial BRT service in the east valley and freeway BRT extensions into the north valley. The Main Street BRT in Mesa will provide a connection to the high capacity transit route at Mesa drive. The east terminus of the route will provide access to the regional retail center at Power Road and will also provide a gateway to the region's transit system for Pinal County to the east. The Arizona Avenue BRT will serve a similar function, providing a link to the LRT system as well as serving trip needs between Chandler and Mesa.

Phase III:

Super-grid: This phase continues building on the regional connections defined in the previous two phases. Responding to projected growth in the north and west valleys, the system adds considerable east-west and north-south capacity. Additional capacity is also added in the far southeast valley with service on Queen Creek Road linking the communities of Gilbert, Chandler and Phoenix with service from Williams Gateway to the Park & Ride at I-10 and Pecos Road.

Bus Rapid Transit: Phase III will see considerable investment in BRT operations in the east and north valleys. The Chandler Boulevard BRT will serve the developing tech corridor north of the Santan Freeway (Loop 202) in Chandler and provide a link to the emerging employment and educational centers at Williams Gateway Airport. The East Loop 101 connector will link major commercial and educational centers in Chandler, Tempe and Scottsdale and will serve a growing volume of work and university trips between these communities. The Scottsdale/Rural BRT will serve one of the region's busiest commercial corridors and provide access to the ASU main campus in Tempe, Old Town Scottsdale, and the Scottsdale Fashion Mall. The North Loop 101 connector will link the communities of Surprise, Peoria, Glendale, Phoenix and Scottsdale and will serve the emerging retail, financial and medical employment centers developing along the Loop 101 corridor.

Phase IV:

Super-grid: In this phase, the super-grid reaches maturity with the addition of additional north-south links in the east, central and west valleys. The Litchfield Road route will provide links between the southwest valley communities of Avondale and Goodyear and the northwest communities of Glendale, El Mirage and Surprise. The route also provides access to major employment centers at Goodyear Airport, Luke Air Force Base and the emerging regional retail centers in Surprise. The east and west valley links serve emerging suburban population centers while the central valley routes add additional capacity in the urban core. The Greenfield Road route in the southeast valley will address a growing volume of work trips between Gilbert and Mesa and provide access to Chandler, Tempe, Scottsdale and Phoenix through the route's connections with the University, Main, Broadway, Southern, Elliot, Ray and Chandler Boulevard routes.

Bus Rapid Transit: This phase addresses the substantial residential growth that is forecast for the southwest valley in the later years of the plan. By 2025 over 275,000 people are projected to live in Buckeye, a community with a current population 8,497 (2000 census). This is a tremendous amount of growth that will place considerable demands on the region's transportation networks. To address these demands, the plan includes freeway BRT service on I-10 providing connections between Buckeye, Goodyear, Avondale and Phoenix. The plan also includes service on the Loop 303 corridor between I-10 and Surprise to serve trip needs in the west valley. In south Phoenix, the plan includes BRT service on Baseline Road from Laveen to the Arizona Mills transit center in Tempe. The plan also

includes BRT service between Laveen and the Ed Pastor Transit Center in South Phoenix. Other BRT service included in the plan for this period is the SR. 51 corridor linking north Phoenix with the central valley and the Santan Express, which will provide rapid connections between Williams Gateway Airport and Phoenix by way of the Santan Freeway (Loop 101) and I-10.

High Capacity Transit Corridor Phasing

The light rail plan includes a 57.5-mile system, which incorporates the 20 mile minimum-operating segment (MOS) designated in the Central Phoenix/East Valley MIS, a 5 mile extension to Metro Center, a 5 mile extension to downtown Glendale, an 11 mile extension along I-10 west to 79th Avenue, a 12 mile extension to Paradise Valley Mall and a 2 mile extension south of the MOS on Rural Road to Southern Avenue. In addition, a 2.7 mile extension from the east terminus of the MOS to Mesa Drive is included with the technology for this segment to be determined. The MOS is scheduled for completion in late 2006. Regional funding has been identified only for capital investments for this category.

The phasing concept for high capacity transit corridors in the Draft Plan is summarized in Exhibit 12. In Appendix D, Map D-6, as well as and Table D-5, provide more detailed cost and phasing information by project.

Phase I: This phase will see the completion of the minimum operating segment (MOS) of the LRT system, as well as construction of an extension to the Metro Center Mall Transit Center.

Phase II: In this phase, line extensions will be added from the MOS south on Rural Road in Tempe to Southern Avenue, and east on Main Street in Mesa from the current end of line at Longmore to Mesa Drive.

Phase III: This phase will see the construction of line extensions west along I-10 to 83rd Avenue and west along Bethany Home Road to the Glendale Municipal complex at 59th and Grand Avenue. I-10 extension will be the first route segment constructed within a freeway corridor and will utilize line stations located within the freeway corridor and station parking located adjacent to the freeway corridor.

Phase IV: With the construction of the SR 51 extension the planned program of LRT extensions will be completed. This phase will also see preliminary studies of high capacity corridors identified within the plan but not funded for construction within the plan's 2025 horizon.

Exhibit 12: Light Rail Transit Phasing

Facility	Segment	Phase
Light Rail Transit		
MOS	I9th Ave/Bethany Home to Apache/Longmore	
Metro Center Link	I9th Ave/Bethany Home to Metrocenter	I
Glendale Link	19th Ave/Bethany Home to Downtown Glendale	III
I-10 West Link	Washington/Central to I-10 / 79th Ave	III
Northeast Phoenix Link	Indian School/Central to Paradise Valley Mall	IV
Tempe South Link	Main/Rural to Rural/Southern	II
East Mesa Link	Main/Longmore to Main/Mesa Dr.*	II

* Technology to be determined.

Phase II: In this phase, line extensions will be added from the MOS south on Rural Road in Tempe to Southern Avenue, and east on Main Street in Mesa from the current end of line at Longmore to Mesa Drive.

Phase III: This phase will see the construction of line extensions west along I-10 to 83rd Avenue and west along Bethany Home Road to the Glendale Municipal complex at 59th and Grand Avenue. I-10 extension will be the first route segment constructed within a freeway corridor and will utilize line stations located within the freeway corridor and station parking located adjacent to the freeway corridor.

Phase IV: With the construction of the SR 51 extension the planned program of LRT extensions will be completed. This phase will also see preliminary studies of high capacity corridors identified within the plan but not funded for construction within the plan's 2025 horizon.

ADA Paratransit Phasing

For those ADA eligible patrons whose disability precludes using the fixed route bus system, transit agencies provide a parallel demand response service within three-quarters of a mile of all fixed transit routes. Since providing accessible transit service is a continuing requirement, the Plan includes funding for ADA paratransit service that would expand in sync with the Plan's fixed route bus and light rail transit systems.

Bus Transit Facilities Phasing

All the bus transit service described in the plan includes a capital cost component. Capital costs include vehicles, passenger facilities, maintenance facilities, and right of way improvements. Transit fleet sizes necessary to support the 20-year transit program are determined by annual revenue miles of service and by the lifecycle of specific types of vehicles. Capital maintenance facility requirements are in turn driven by fleet size. Passenger facilities, which include both park & ride lots and transit centers, are determined by route characteristics and phasing.

Table D-6 in Appendix D details the funding requirements for all vehicle and fixed capital facilities needed to provide and maintain the transit services described in the plan. Phasing for maintenance facilities will be based on the phasing of new service and the lifecycle of the vehicles. Similarly, passenger facilities (including park & ride lots) are planned to come online in specific corridors when planned transit routes are implemented.

Regional Programs Phasing

The major components in the regional programs element are bicycle and pedestrian projects, and air quality mitigation projects. Plan implementation studies, such as corridor assessments and major investment studies (MIS), are also included. Phasing of the projects in this element would proceed under the funding constraints identified in the Draft Plan. Specific project listings and sequencing would be developed through MAG

technical committees, with final approval by the TPC. The system management portions of the freeway/highway and arterial elements (FMS/ITS) would also be handled in this manner.

POLICY CONCEPTS

In addition to the transportation facilities and services aspects of the RTP, the Transportation Policy Committee also addressed plan implementation policy issues. These policies will play a vital part in how the RTP is managed and updated over the coming years. The policy concepts listed below were adopted by the TPC on September 17, 2003, as part of their action to recommend a Draft Plan for air quality conformity analysis.

- That funding firewalls be established for the following modes of transportation: freeways, streets and transit, with the understanding that these firewalls represent the percentage of funding identified in the plan and that the funds from the sales tax be deposited in their respective accounts (Regional Area Road Fund for freeways, a sub-account of the RARF for streets and the Public Transportation Fund for transit). Increases or decreases in sales tax revenue would be reflected proportionately in the respective accounts.

- That the Arizona Department of Transportation develop a Life Cycle Certification Program for freeways and streets and the Regional Public Transportation Authority develop a Life Cycle Certification Program for transit to ensure that costs and revenues for the Regional Transportation Plan are balanced annually.

- That freeway and street project accelerations be considered, with the existing highway acceleration policy used as a model for consideration.

- That the material cost change and enhancement policies now used for the freeway program be expanded to transportation projects funded by the sales tax as prescribed by state law.

- That funding for rubberized asphalt/noise mitigation in the amount of $75 million be included in the plan and be provided from the funding for maintenance.

- That every five years, the Regional Transportation Plan be re-evaluated to consider major plan adjustments resulting from new information or studies pertaining to the implementation of the Plan.

- That the Regional Transportation Plan consider the input from the public and member agencies, with the additional amount needed for these projects being provided by using a proportionate share of the contingency/set aside funds.

An additional set of policies submitted by Maricopa County was considered by the TPC at their September 17, 2003 meeting. These policies, which complement and reinforce the above items, are listed below. The TPC adopted the first, second and last bullet-items in this list. The TPC determined that the remaining three items need to be examined further and refined prior to adoption.

- Require an independent evaluation of the performance of the RTP every 5 years. (Full audit of implemented projects and evaluation of projects within the balance of the plan time frame.)

- The TPC must review the independent RTP evaluation and may recommend amendments to the RTP based on the independent evaluation.

- A minor amendment may be made through a 2/3-majority vote by the TPC. (A minor amendment is an adjustment that does not change the overall modal funding percentages in the RTP).

- A major amendment to the RTP must be approved by a majority vote of the TPC and a majority vote of the citizens of Maricopa County. (A major amendment includes any of the following: the addition or deletion of a freeway, expressway or high capacity transit project; or any other adjustment that would change the overall modal funding percentages in the RTP). The TPC, on approval of a major amendment, shall request the County Board of Supervisors to call for an election, on the next general election date, to consider the amendment.

- In no case may an amendment change the regional funding percentages in the RTP.

- Include the above accountability provisions in the authorizing legislation.

APPENDIX A

GOALS, OBJECTIVES AND PERFORMANCE MEASURES

APPENDIX A

GOALS, OBJECTIVES AND PERFORMANCE MEASURES

Goals

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

Objectives

An objective is very similar to a goal, as it represents a desired end state of affairs. However, an objective is an intermediate result that must be realized to reach a goal. The definition of an objective is usually more focused than that of a goal and is typically more subject to being measured. Objectives were identified for each of the transportation goals.

Performance Measures

Performance measures will be applied in the scenarios evaluation phase of the RTP process. In the evaluation of scenarios**,** the values for the performance measures will be used to assess the relative strengths and weaknesses of the scenarios, and help provide insights into the tradeoffs associated with different transportation investment strategies. This will be done within the overall context of regional transportation goals and objectives.

Goals/Objectives/Performance Measures

The listing below presents the full array of goals, objectives and performance measures that will be use to help guide the preparation of the RTP. The goals are not listed in priority order and are label numerically for reference purposes. Objectives are listed under the goals to which they apply and performance measures are shown under the transportation objective for which they will provide information.

Performance Measures by Goal and Objective

Goal 1: System Preservation and Safety

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

Objective 1A: Provide for the continuing preservation and maintenance needs of transportation facilities and services in the region, eliminating maintenance backlogs.

Performance Measures:

- Percent of maintenance and preservation needs funded.

Objective 1B: Provide a safe and secure environment for the traveling public, addressing roadway hazards, pedestrian and bicycle safety, and transit security.

Performance Measures:

- Accident rate per million miles of passenger travel.

Goal 2: Access and Mobility
Transportation systems and services that provide accessibility, mobility and modal choices for residents, businesses and the economic development of the region.

Objective 2A: Maintain an acceptable and reliable level of service on transportation and mobility systems serving the region, taking into account performance by mode and facility type.

Performance Measures:

- 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.

Objective 2B: Provide residents of the region with access to jobs, shopping, educational, cultural, and recreational opportunities and provide employers with reasonable access to the workforce in the region.

Performance Measures:

- Percentage of persons within 30 minutes travel time of employment by mode.

Objective 2C: Maintain a reasonable and reliable travel time for moving freight into, through and within the region, as well as provide high-quality access between intercity freight transportation corridors and freight terminal locations, including intermodal facilities for air, rail and truck cargo.

Performance Measures:

- Average daily truck delay.

Objective 2D: Provide the people of the region with transportation modal options necessary to carry out their essential daily activities and support equitable access to the region's opportunities.

Performance Measures:

- Jobs within one-quarter mile distance of transit service.
- Percentage of major arterial streets that have bike lanes.
- Percentage of regional connectors funded as part of the number of miles of off-street bike/pedestrian system plan.

Objective 2E: Address the needs of the elderly and other population groups that may have special transportation needs, such as non-drivers or those with disabilities.

Performance Measures:

- Percentage of workforce that can reach their workplace by transit within one hour with no more than one transfer.

Note: There will also be a separate Title VI and Environmental Justice analysis.

Goal 3: Sustaining The Environment
Transportation improvements that help sustain our environment and quality of life.

Objective 3A: Identify and encourage implementation of mitigation measures that will reduce noise, visual and traffic impacts of transportation projects on existing neighborhoods.

Performance Measures:

- Per Capita VMT by facility type and mode.
- Total transit ridership.

Objective 3B: Encourage programs and land use planning that advance efficient trip-making patterns in the region.

Performance Measures:

- Households within one-quarter mile of transit.
- Transit share of travel (by transit sub-mode)

Objective 3C: Make transportation decisions that are compatible with air quality conformity and water quality standards, the sustainable preservation of key regional ecosystems and desired lifestyles.

Performance Measures:

- Households within five miles of park-and-ride lots or major transit centers.
- Amount of pollutant emissions by type (NAQS).

Goal 4: Accountability and Planning
Transportation decisions that result in effective and efficient use of public resources and strong public support.

Objective 4A: Make transportation investment decisions that use public resources effectively and efficiently, using performance-based planning.

Performance Measures:

- Travel time benefits of transportation investments compared to the public costs.

Objective 4B: Establish revenue sources and mechanisms that provide consistent funding for regional transportation and mobility needs.
Performance Measures:

- Percent of state and federal transportation taxes collected in Maricopa County that is returned to the region.

Objective 4C: Develop a regionally balanced plan that provides geographic equity in the distribution of investments.

Performance Measures:

- Geographic distribution of transportation investments.

Objective 4D: Recognize previously authorized corridors that are currently in the adopted MAG long range transportation plan; i.e., Loop 303 and the South Mountain Corridor.

Performance Measures:

- Inclusion of committed corridors.

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

Performance Measures:

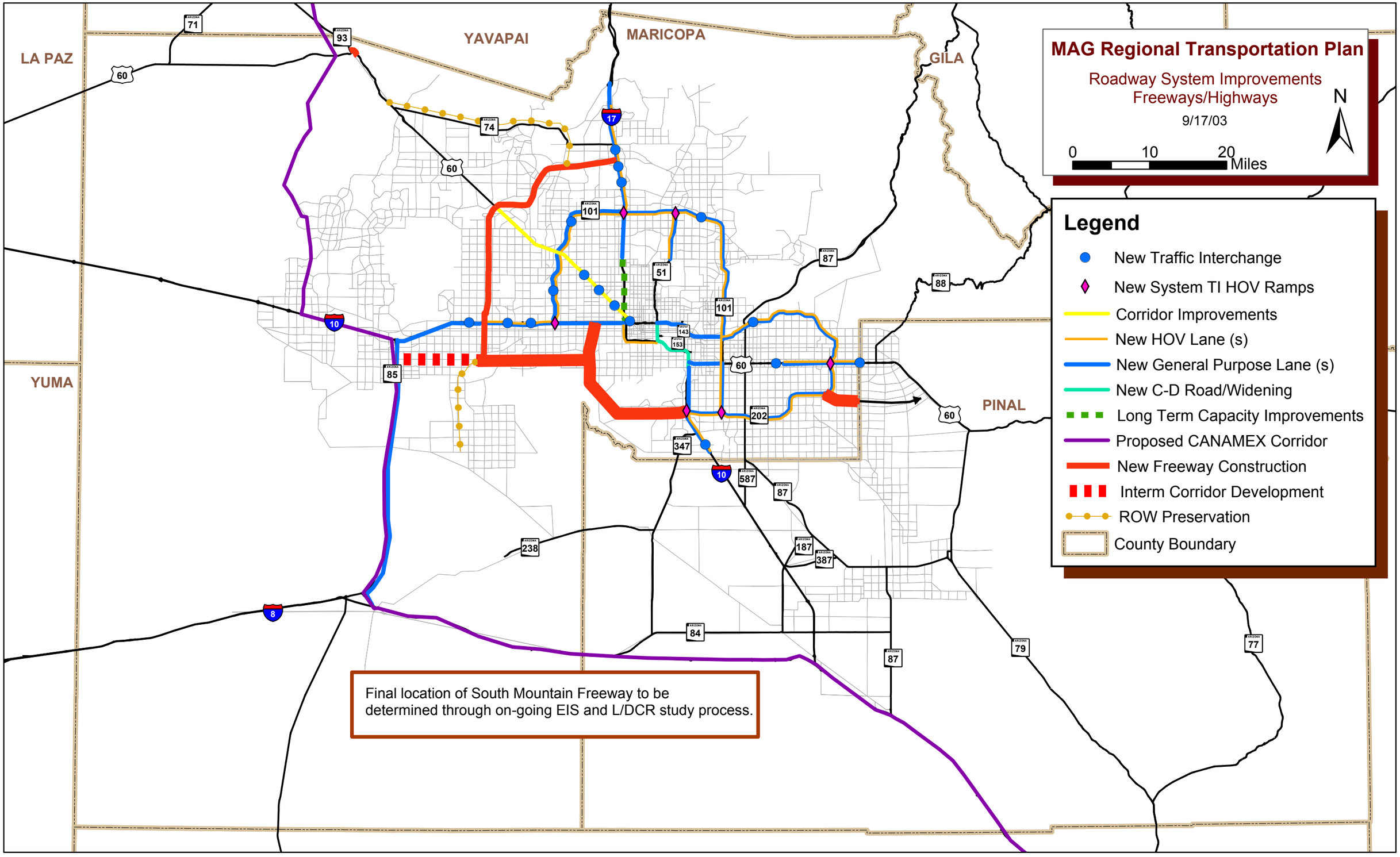
- Voter approval for a regional transportation revenue source.

APPENDIX B

DRAFT PLAN ELEMENTS

Map B-1	Freeways/Highways
Map B-2	New/Improved Arterials
Map B-3	Proposed Super-grid System
Map B-4	Proposed Freeway and Arterial BRT Routes
Map B-5	Identified High Capacity Corridors
Table B-1	Funding Allocation Concept
Table B-2	Funding by Source and Mode

Freeways/Highways



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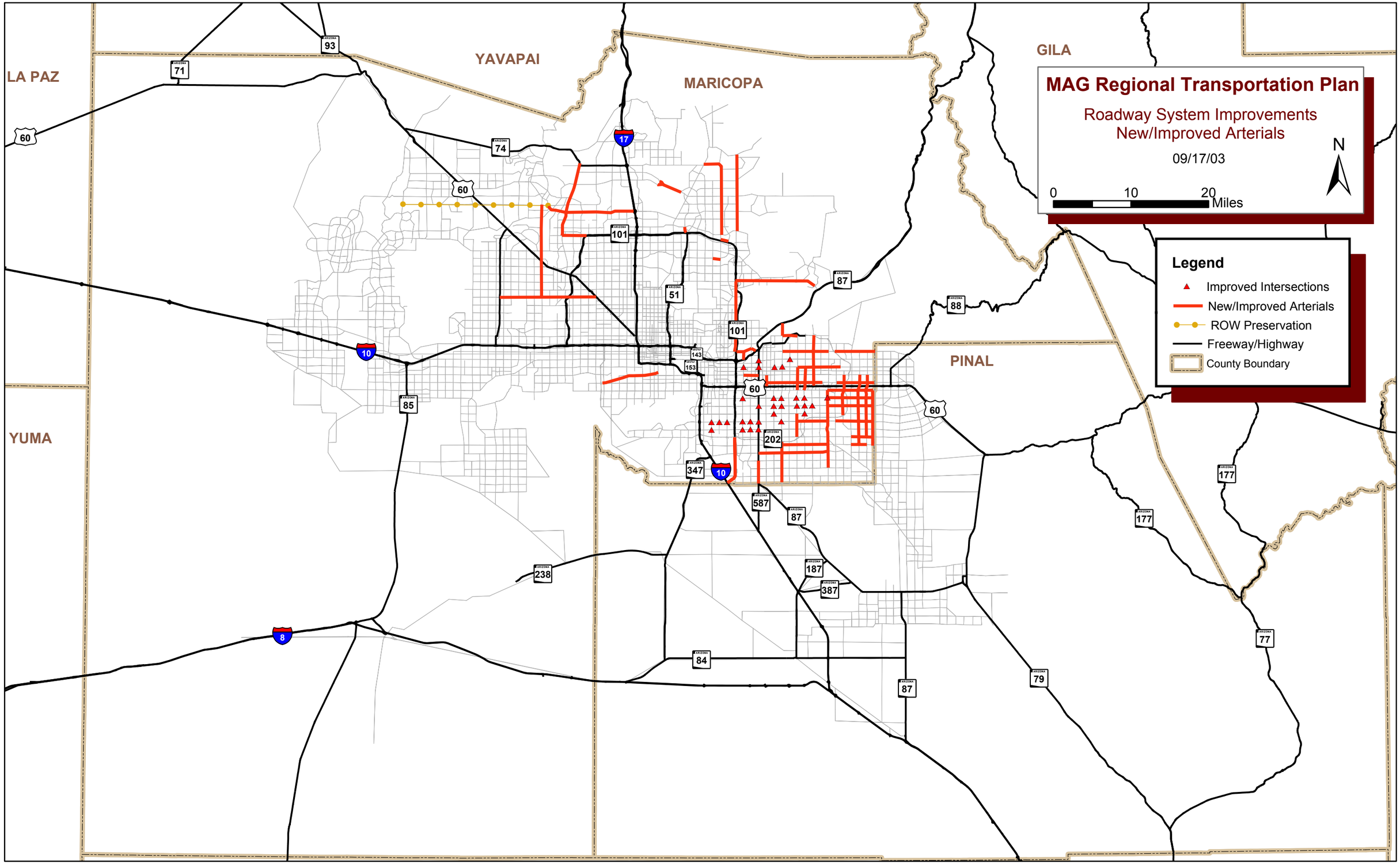
New/Improved Arterials



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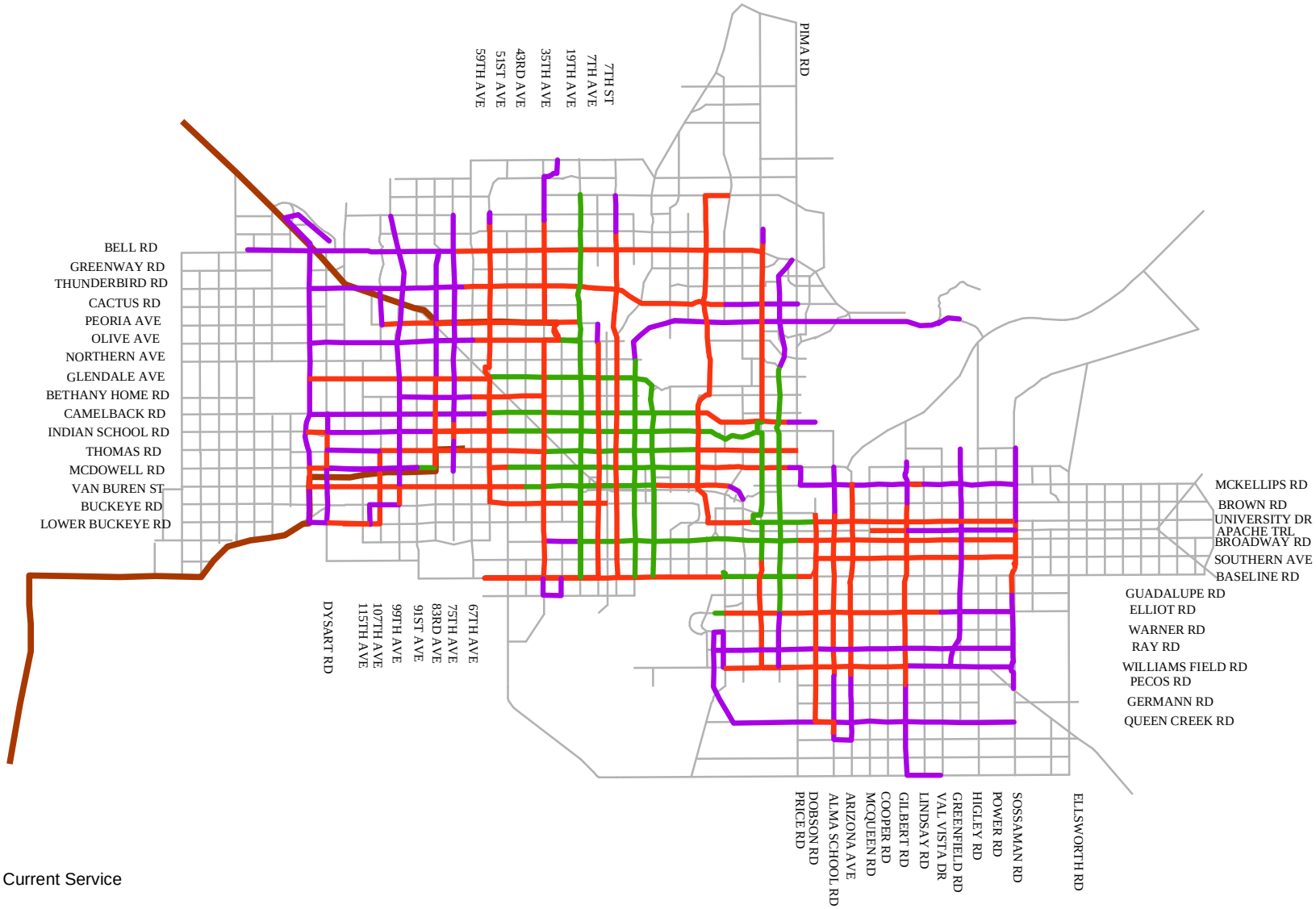
PROPOSED SUPER GRID SYSTEM: New, Enhanced, Existing and Rural Service
September 9, 2003



LEGEND

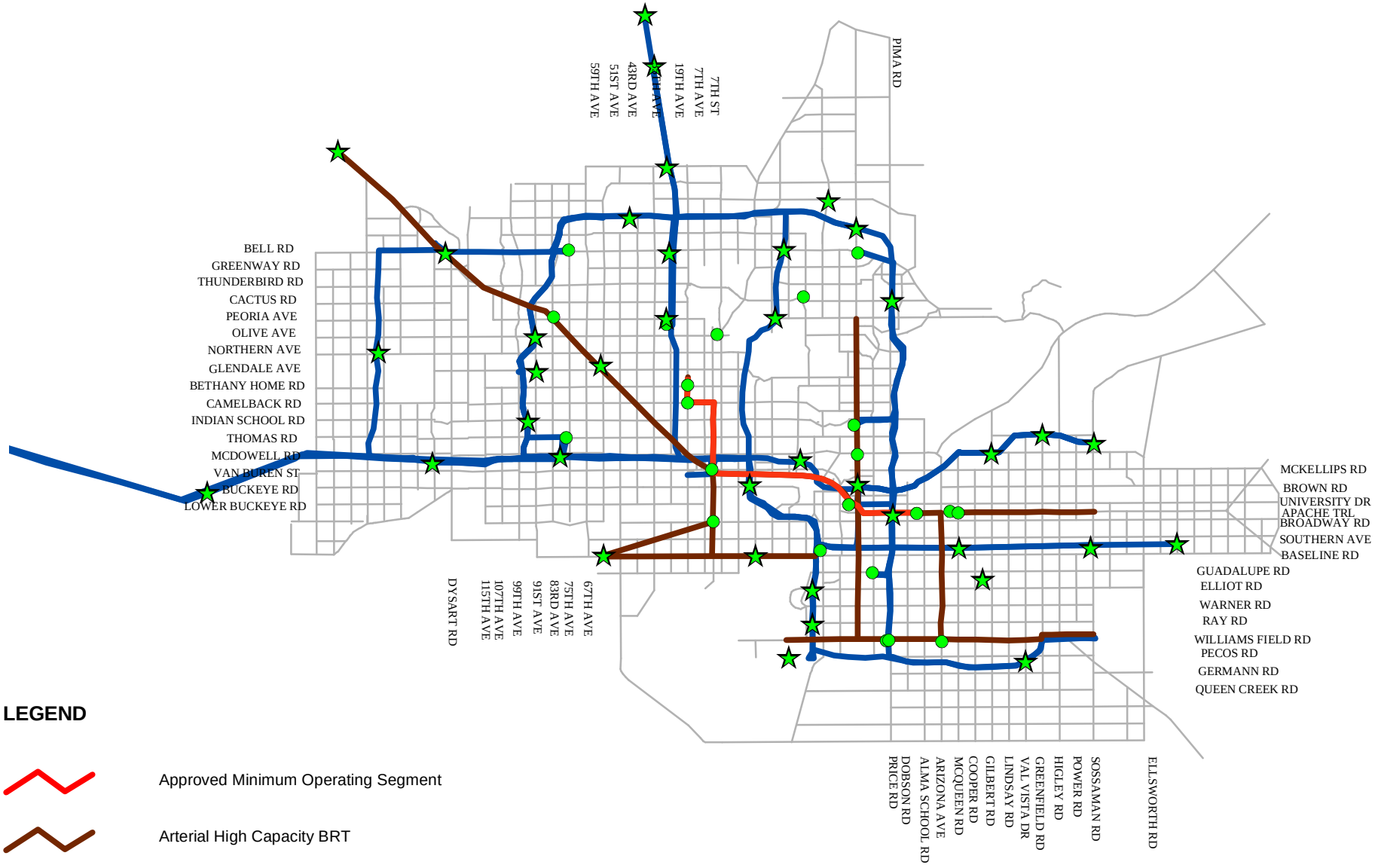
- Current Service
- Proposed service has greater peak frequency than current service
- New Service
- Proposed Rural Routes

0 2.5 5 10 Miles

N

Valley Metro®
Regional Public Transportation Authority

PROPOSED FREEWAY AND ARTERIAL BRT ROUTES
September 9, 2003



LEGEND

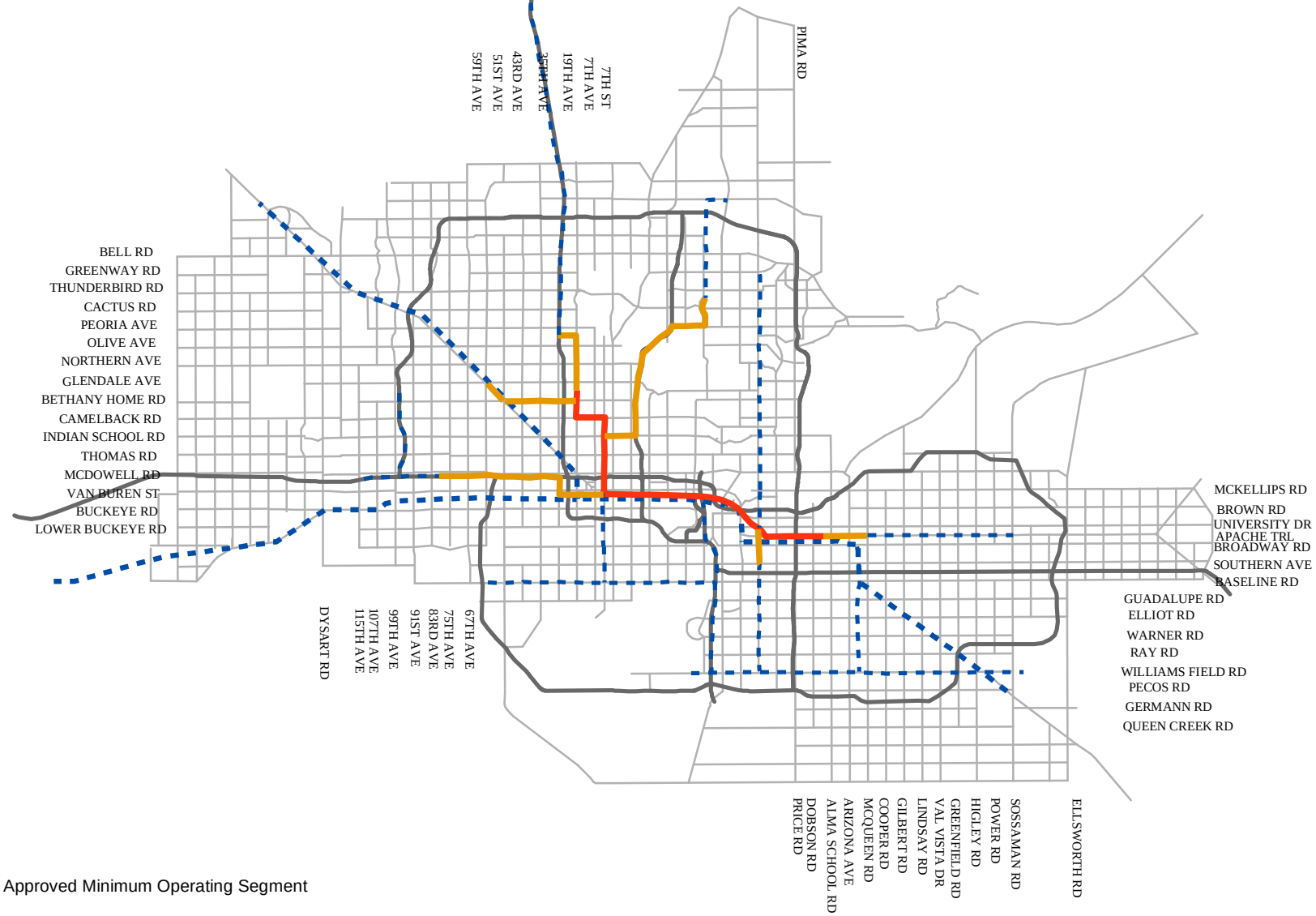
- Approved Minimum Operating Segment
- Arterial High Capacity BRT
- Proposed Freeway Routes
- Planned or Existing Park-and-Rides
- Planned or Existing Transit Centers

0 2.5 5 10 Miles

N

Valley Metro®
Regional Public Transportation Authority

IDENTIFIED HIGH CAPACITY CORRIDORS
September 9, 2003



LEGEND

Approved Minimum Operating Segment

Committed Light Rail/ High Capacity Corridors

Eligible High Capacity Corridors

Planned or Existing Freeways

0 2.5 5 10 Miles

N

Valley Metro

Regional Public Transportation Authority

Table B-1
Funding Allocation Concept
(Millions of 2002 dollars)

Mode	Program Area	1/2 Cent	ADOT Funds	FTA (5307)	FTA (5309)	MAG-CMAQ	MAG-STP	Total Regional Funding
Freeways / Highways	New Freeways (Table D-1)	$ 2,563	$ 1,154	$ -	$ -	$ -	$ -	$ 3,716
	Freeway Widening (Table D-1)	1,728	2,706	0	0	0	0	4,434
	New Interchanges & Improvements (Table D-2)	0	182					182
	New HOV Ramps (Table D-2)		70			144		214
	ITS: Freeway Management System (ADOT)	129	9			5		143
	Maintenance and Noise Mitigation (ADOT)	354						354
	Total Freeways	4,774	4,121	0	0	149	0	9,043
Streets	New/Improved Major Streets (Table D-3)	863				55	497	1,414
	ITS (MAG ITS Plan)					50		50
	Total Streets	863	0	0	0	105	497	1,464
Regional Bus Service	Capital (Table D-6)	239		657				896
	Operations (Table D-4)	1,009						1,009
	Bus Maintenance and Passenger Facilities (Table D-6)	116		200	120			436
	Total Bus Service	1,364	0	857	120	0	0	2,340
Light Rail	LRT Regional Infrastructure for MOS & Extensions (Table D-5)	303			375	0		678
	Light Rail Transit-Additonal Miles (Table D-5)	921			450	279		1,650
	Total Light Rail	1,224	0	0	825	279	0	2,328

Table B-1
Funding Allocation Concept
(Millions of 2002 dollars)

Mode	Program Area	1/2 Cent	ADOT Funds	FTA (5307)	FTA (5309)	MAG-CMAQ	MAG-STP	Total Regional Funding
Paratransit (ADA)	Capital (Table D-6)	20		55				75
	Operations	199						199
	Total Paratransit (Valley Metro)	219	0	55	0	0	0	274
Van Pool	Capital (Table D-6)	12		32		0		44
	Operations	0						0
	Total Van Pool (Valley Metro)	12	0	32	0	0	0	44
Rural/Non-Fixed RouteTransit	Capital (Table D-6)	1		2		0		2
	Operations	12						12
	Total Rural Transit (Valley Metro)	13	0	2	0	0	0	14
Planning	Studies (MIS, DCR, EIS,etc)	31						31
Bicycle/ Pedestrian	Capital (annual project selection)	0				132		132
Air Quality Mitigation	Programs (annual project selection)	0				113		113
Total		8,498	4,121	946	945	778	497	15,785

Table B-1
Funding Allocation Concept
(Millions of 2002 dollars)

Mode	Program Area	1/2 Cent	ADOT Funds	FTA (5307)	FTA (5309)	MAG-CMAQ	MAG-STP	Total Regional Funding
Total by Funding Source								
	Capital	6,894	4,121	945	945	665	497	14,067
	O&M/Programs	1,604	0	0	0	113	0	1,718
	Total	8,498	4,121	945	945	778	497	15,785

Total Funding by Mode

Mode	Program Area	1/2 Cent	ADOT Funds	FTA (5307)	FTA (5309)	MAG-CMAQ	MAG-STP	Total Regional Funding
Freeways	Capital	4,420	4,121	0	0	149	0	8,689
	Operations	354	0	0	0	0	0	354
	Total	4,774	4,121	0	0	149	0	9,043
Streets	Capital	863	0	0	0	105	497	1,464
Buses	Capital	355	0	857	120	0	0	1,332
	Operations	1,009	0	0	0	0	0	1,009
	Total	1,364	0	857	120	0	0	2,340
LRT	Capital	1,224	0	0	825	279	0	2,328
Other Transit	Capital	32	0	89	0	0	0	122
	Operations	211	0	0	0	0	0	211
	Total	243	0	89	0	0	0	333
Planning	Programs	31	0	0	0	0	0	31
Bicycle/Ped	Capital	0	0	0	0	132	0	132
Air Quality	Programs	0	0	0	0	113	0	113
Total Funding	Capital	6,894	4,121	946	945	665	497	14,067
	Operations	1,604	0	0	0	113	0	1,718
	Total	8,498	4,121	946	945	778	497	15,785

0

Table B-1
Funding Allocation Concept
(Millions of 2002 dollars)

Mode	Program Area	1/2 Cent	ADOT Funds	FTA (5307)	FTA (5309)	MAG-CMAQ	MAG-STP	Total Regional Funding
Percent Funding by Mode								
Mode	**Program Area**	**1/2 Cent**	**ADOT Funds**	**FTA (5307)**	**FTA (5309)**	**MAG-CMAQ**	**MAG-STP**	**Total Regional Funding**
Freeways	**Capital**	52.0%	100.0%	0.0%	0.0%	19.1%	0.0%	55.0%
	Operations	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%
	Total	56.2%	100.0%	0.0%	0.0%	19.1%	0.0%	57.3%
Streets	**Capital**	10.2%	0.0%	0.0%	0.0%	13.4%	100.0%	9.3%
Buses	**Capital**	4.2%	0.0%	90.6%	12.7%	0.0%	0.0%	8.4%
	Operations	11.9%	0.0%	0.0%	0.0%	0.0%	0.0%	6.4%
	Total	16.0%	0.0%	90.6%	12.7%	0.0%	0.0%	14.8%
LRT	**Capital**	14.4%	0.0%	0.0%	87.3%	35.9%	0.0%	14.7%
Other Transit	**Capital**	0.4%	0.0%	9.4%	0.0%	0.0%	0.0%	0.8%
	Operations	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%
	Total	2.9%	0.0%	9.4%	0.0%	0.0%	0.0%	2.1%
Planning	**Programs**	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
Bicycle/Ped	**Capital**	0.0%	0.0%	0.0%	0.0%	17.0%	0.0%	0.8%
Air Quality	**Programs**	0.0%	0.0%	0.0%	0.0%	14.6%	0.0%	0.7%
Total Funding	**Capital**	81.1%	100.0%	100.0%	100.0%	85.4%	100.0%	89.1%
	Operations	18.9%	0.0%	0.0%	0.0%	14.6%	0.0%	10.9%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Percent Funding by Major Mode								
Freeways		56.2%	100.0%	0.0%	0.0%	19.1%	0.0%	57.3%
Streets		10.2%	0.0%	0.0%	0.0%	13.4%	100.0%	9.3%
Transit		33.3%	0.0%	100.0%	100.0%	35.9%	0.0%	31.7%
Other		0.4%	0.0%	0.0%	0.0%	31.6%	0.0%	1.8%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-2
Funding Allocation Concept
(Millions of 2002 dollars)

Funding by Source and Mode (Millions of 2002 dollars)

Funding Source	Budget	Freeways / Highways (capital)	Freeways / Highways (operations)	Total Freeways/Highways	Transit (capital)	Transit (o&m)	Rail (capital)	Total Transit	Major Streets	Programs	Total	Fund Balance
1/2 Cent	$ 8,500.0	$ 4,420.0	$ 354.0	$ 4,774.0	$ 387.4	$ 1,219.6	$ 1,223.7	$ 2,830.6	$ 862.7	$ 30.8	$ 8,498.1	$ 1.9
ADOT Funds	$ 4,122.0	$ 4,120.6	$ -	$ 4,120.6	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,120.6	$ 1.4
FTA (5307)	$ 951.8	$ -	$ -	$ -	$ 946.3	$ -	$ -	$ 946.3	$ -	$ -	$ 946.3	$ 5.5
FTA (5309)	$ 945.0	$ -	$ -	$ -	$ 120.0	$ -	$ 825.0	$ 945.0	$ -	$ -	$ 945.0	$ -
CMAQ	$ 800.0	$ 148.7	$ -	$ 148.7	$ -	$ -	$ 279.0	$ 279.0	$ 104.6	$ 245.7	$ 778.1	$ 21.9
MAG-STP	$ 500.0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 497.1	$ -	$ 497.1	$ 2.9
Total Regional Funding	$ 15,818.8	$ 8,689.4	$ 354.0	$ 9,043.4	$ 1,453.6	$ 1,219.6	$ 2,327.7	$ 5,000.9	$ 1,464.5	$ 276.5	$ 15,785.2	$ 33.6

Mode Shares by Funding Source

Funding Source	Budget	Freeways / Highways (capital)	Freeways / Highways (operations)	Total Freeways/Highways	Transit (capital)	Transit (o&m)	Rail (capital)	Total Transit	Major Streets	Programs	Total	Capital
1/2 Cent	53.7%	52.0%	4.2%	56.2%	4.6%	14.4%	14.4%	33.3%	10.2%	0.4%	100.0%	81.1%
ADOT Funds	26.1%	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
FTA (5307)	6.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	100.0%
FTA (5309)	6.0%	0.0%	0.0%	0.0%	12.7%	0.0%	87.3%	100.0%	0.0%	0.0%	100.0%	100.0%
MAG-CMAQ	5.1%	19.1%	0.0%	19.1%	0.0%	0.0%	35.9%	35.9%	13.4%	31.6%	100.0%	100.0%
MAG-STP	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	100.0%
Total Regional Funding	100.0%	55.0%	2.2%	57.3%	9.2%	7.7%	14.7%	31.7%	9.3%	1.8%	100.0%	89.8%

Sources of Regional Funding by Mode

Funding Source	Budget	Freeways / Highways (capital)	Freeways / Highways (operations)	Total Freeways/Highways	Transit (capital)	Transit (o&m)	Rail (capital)	Total Transit	Major Streets	Programs	Total
1/2 Cent	53.7%	50.9%	100.0%	52.8%	26.6%	100.0%	52.6%	56.6%	58.9%	11.1%	53.8%
ADOT Funds	26.1%	47.4%	0.0%	45.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	26.1%
FTA (5307)	6.0%	0.0%	0.0%	0.0%	65.1%	0.0%	0.0%	18.9%	0.0%	0.0%	6.0%
FTA (5309)	6.0%	0.0%	0.0%	0.0%	8.3%	0.0%	35.4%	18.9%	0.0%	0.0%	6.0%
MAG-CMAQ	5.1%	1.7%	0.0%	1.6%	0.0%	0.0%	12.0%	5.6%	7.1%	88.9%	4.9%
MAG-STP	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.9%	0.0%	3.1%
Total Regional Funding	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

APPENDIX C

PERFORMANCE MEASURE RESULTS

Table C-1 Draft Plan Performance Measures

Table C-1 Draft Plan Performance Measures

Objective	Performance Measure	Existing 2000	Modeling Scenario	
			Base	RTP
Goal 1: System Preservation and Safety				
1A: Provide for the continuing preservation and maintenance needs of transportation facilities and services in the region, eliminating maintenance backlogs.	Percent of *freeway* maintenance and preservation needs funded	n/a	n/a	n/a
1B: Provide a safe and secure environment for the traveling public, addressing roadway hazards, pedestrian and bicycle safety, and transit security.	Number of Predicted Total Annual Accidents			
	- Total		284,814	275,610
	- Freeway		20,248	28,658
	- Arterial		264,566	246,952
	- Accidents/Million VMT		4.22	3.93
Goal 2: Access and Mobility				
2A: Maintain an acceptable and reliable level of service on transportation and mobility systems serving the region, taking into account performance by mode and facility type.	*PM peak period* Travel time between selected origins and destinations			
	- Peoria to Goodyear/Avondale	21.4	38.5	27.7
	- Sun City to Scottsdale Airpark	32.1	43.0	36.9
	- Glendale to Tempe	38.6	50.7	58.8
	- Phoenix to Mesa	34.8	58.0	69.1
	- Gilbert to Sky Harbor	30.9	32.4	47.1
	- Chandler to Scottsdale	43.2	58.1	54.2
	- Peoria to Phoenix	25.2	32.8	29.4
	PM Peak period delay per lane mile			
	- Freeway	52.9	252.34	116.20
	- Arterial	13.03	68.39	29.74
	- HOV Lane	10.23	240.04	68.20
	PM Peak period delay by facility type			
	- Freeway	85,057	498,117	343,127
	- Arterial	122,884	1,213,766	530,888
	- HOV Lane	1,043	42,968	33,215
	Total	208,984	1,754,851	907,230
	AVERAGE PM Peak *period* speed by facility type and geographic location			
	- Freeway	33	14	22
	- Arterial	23	12	16
	- HOV Lane	48	14	28
	Number of major intersections at specific level of service *during PM peak period/* total number of intersections			
	E	11.67%	18.66%	19.78%
	F	3.42%	11.59%	8.42%
	F-	3.09%	23.15%	9.47%
	Total LOS F or F-	6.51%	34.74%	17.89%
	Lane Miles of freeways with level of service "E" or worse during *PM* peak period/Total number of lane miles	30.47%	58.76%	48.62%
	Lane Miles with level of service "F" or worse during *PM* peak period			
	- Freeway	283	908	1,068
	- HOV Lane	3	90	161
	- Total	286	998	1,229
2B: Provide residents of the region with access to jobs, shopping, educational, cultural, and recreational opportunities and provide employers with reasonable access to the workforce in the region.	Percentage of persons within 30 *and 60* minutes travel time of employment by *auto and transit* mode	n/a	n/a	n/a
	- Auto			
	- Transit			
2C: Maintain a reasonable and reliable travel time for moving freight into, through and within the region, as well as provide high-quality access between intercity freight transportation corridors and freight terminal locations, including intermodal facilities for air, rail and truck cargo	Average daily truck delay	n/a	n/a	n/a
2D: Provide the people of the region with transportation modal options necessary to carry out their essential daily activities and support equitable access to the region's opportunities	Jobs within one-quarter mile distance of transit service	n/a	1,469,158	1,787,900
	Percentage of major arterial streets that have bike lanes	n/a	n/a	n/a
	Percentage of regional connectors funded as part of the number of miles of off-street bike/pedestrian system plan	n/a	n/a	n/a

2E: Address the needs of the elderly and other population groups that may have special transportation needs, such as non-drivers or those with disabilities	Percent of transit dependent population served	n/a	n/a	n/a
Goal 3: Sustaining The Environment				
3A: Identify and encourage implementation of mitigation measures that will reduce noise, visual and traffic impacts of transportation projects on existing neighborhoods	Per Capita VMT by facility type and mode			
	- Freeway			
	PM Peak Per Capita VMT	n/a	1.50	2.14
	24 HR Per Capita VMT		7.50	10.63
	- Arterial			
	PM Peak Per Capita VMT	n/a	4.22	3.56
	24 HR Per Capita VMT		18.79	15.83
	- HOV Lane			
	PM Peak Per Capita VMT	n/a	0.14	0.29
	24 HR Per Capita VMT		0.63	1.15
	TOTAL			
	PM Peak Per Capita VMT	0.00	5.86	5.99
	24 HR Per Capita VMT	0.00	26.92	27.61
	PM Peak Person Hours of Travel per capita			
	Freeway	0.00	0.118	0.107
	Arterial	0.00	0.387	0.245
	HOV	0.00	0.021	0.022
	TOTAL - Auto	0.00	0.526	0.374
	Transit	n/a	n/a	n/a
	TOTAL ALL MODES	0.00	0.526	0.374
	Transit PHT			
	- PM Peak	n/a	n/a	n/a
	- Daily per capita	n/a	n/a	n/a
	Per Capita Transit PMT			
	- PM Peak	n/a	n/a	n/a
	- Daily	0.22	0.164	0.187
	Total transit boardings	168,519	253,025	343,510
	- Transit Percent of Total Trips	1.46%	1.13%	1.54%
3B: Encourage programs and land use planning that advance efficient trip-making patterns in the region	Households within one-quarter mile of transit	n/a	751,040	885,416
	Transit boardings by sub-mode			
	- Local Bus	168,519	206,265	257,074
	- Express Bus/BRT/LRT	0	46,760	86,076
3C: Make transportation decisions that are compatible with air quality conformity and water quality standards, the sustainable preservation of key regional ecosystems and desired lifestyles	Households within five miles of park-and-ride lots or major transit centers	n/a	556,501	845,784
	Amount of pollutant emissions by type (NAQS) - Pollutant Index		*	*
Goal 4: Accountability and Planning				
4A: Make transportation investment decisions that use public resources effectively and efficiently, using performance-based planning	Travel time benefits of transportation investments compared to the public costs	n/a	n/a	n/a

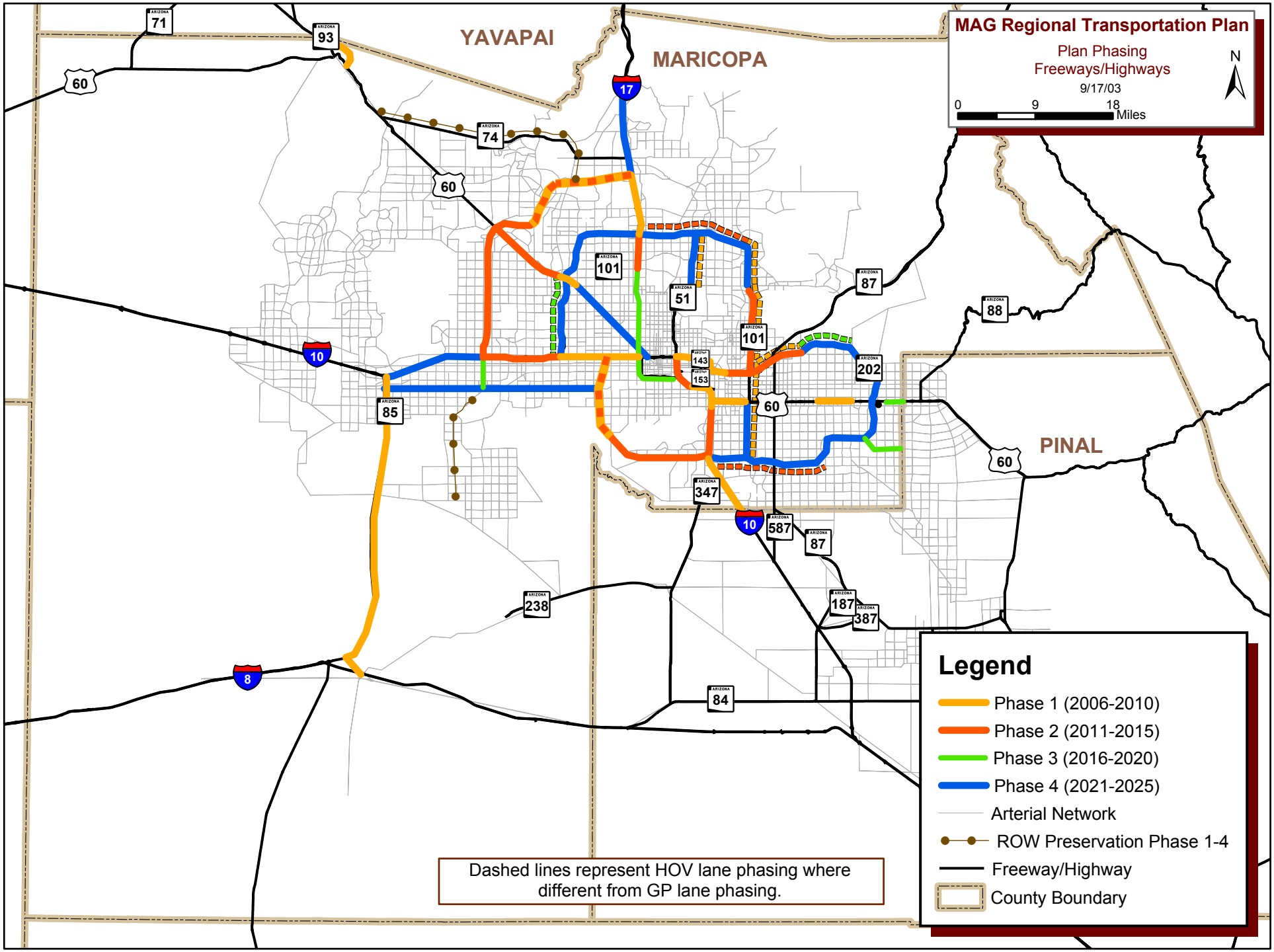
n/a = not available. For certain performance measures modeling data is not available.

* The Draft Plan will undergo in-depth air quality analysis to ensure that it supports the regional air quality implementation plan.

APPENDIX D

DRAFT PLAN PHASING

Map D-1	Freeways/Highways - Draft Plan Phasing
Map D-2	Interchanges - Draft Plan Phasing
Map D-3	New/Improved Arterials - Draft Plan Phasing
Map D-4	Proposed Super-grid and Rural Service - Draft Plan Phasing
Map D-5	Proposed Freeway and Arterial BRT Routes - Draft Plan Phasing
Map D-6	Identified High Capacity Corridors - Draft Plan Phasing
Table D-1	Freeway/Highway Projects Phasing
Table D-2	New/Improved Interchanges Phasing
Table D-3	Arterial Projects Phasing
Table D-4	Regional Bus Services Phasing
Table D-5	Light Rail Transit Phasing
Table D-6	Schedule of Bus Related Capital Investments



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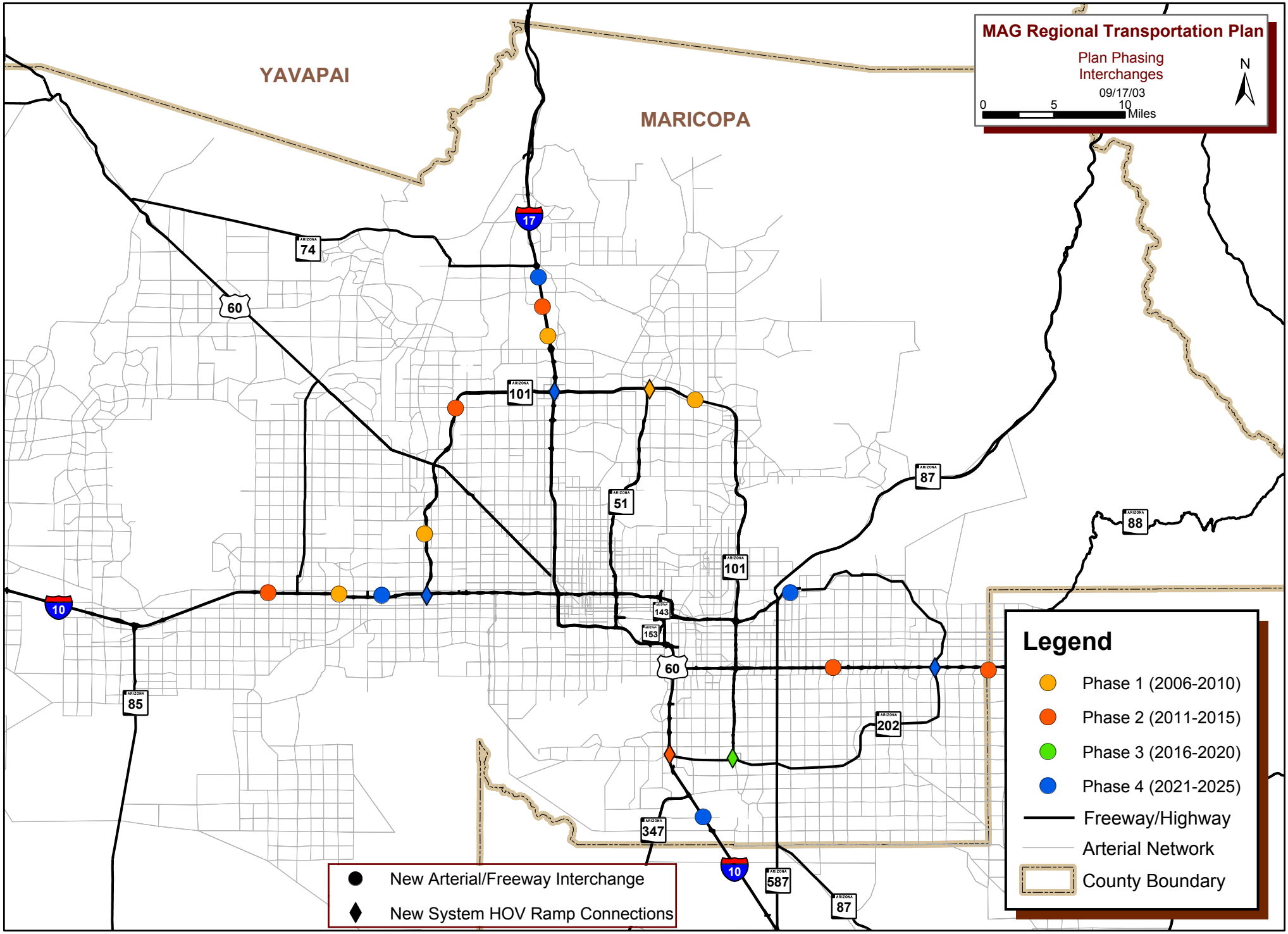

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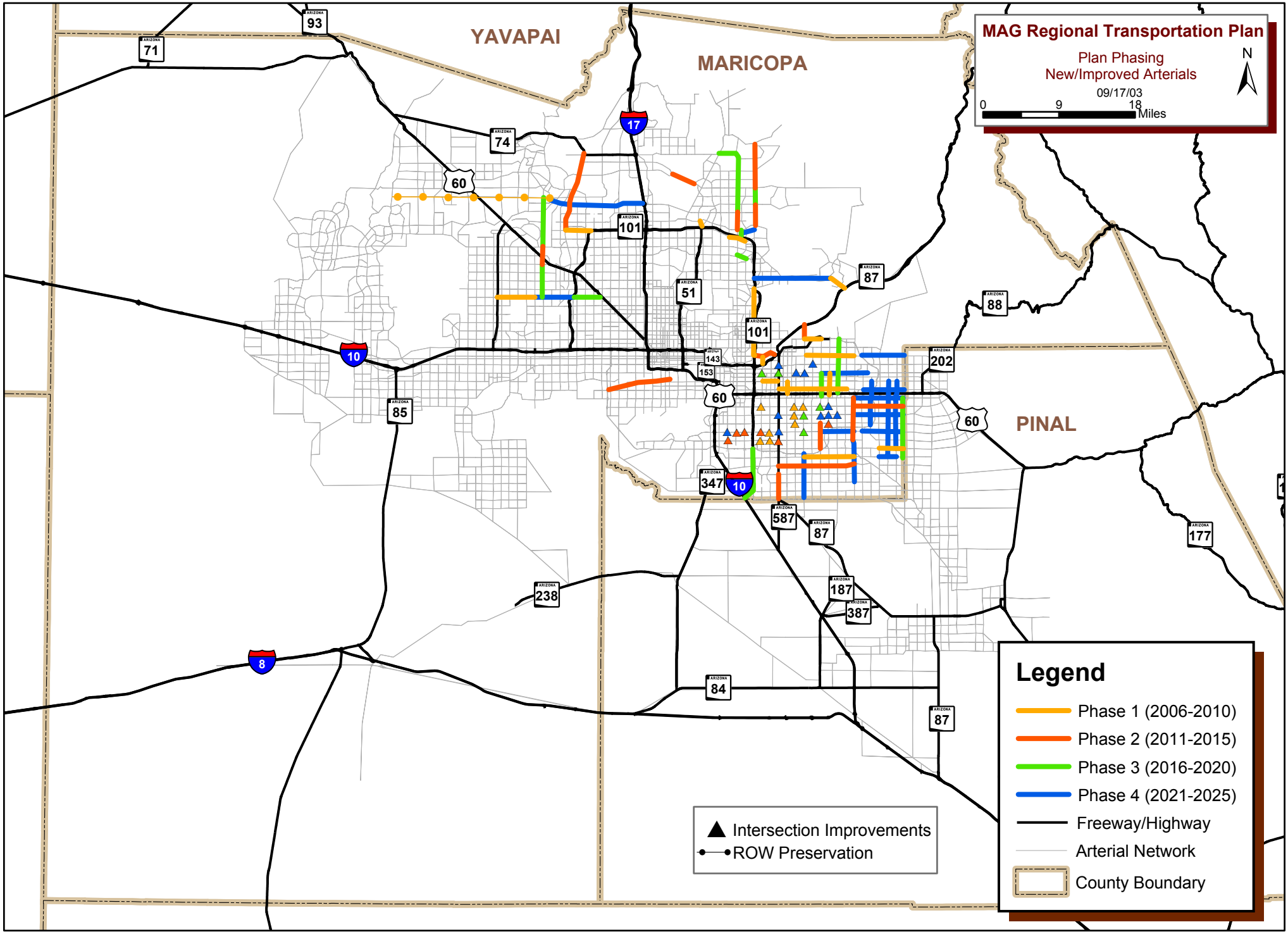

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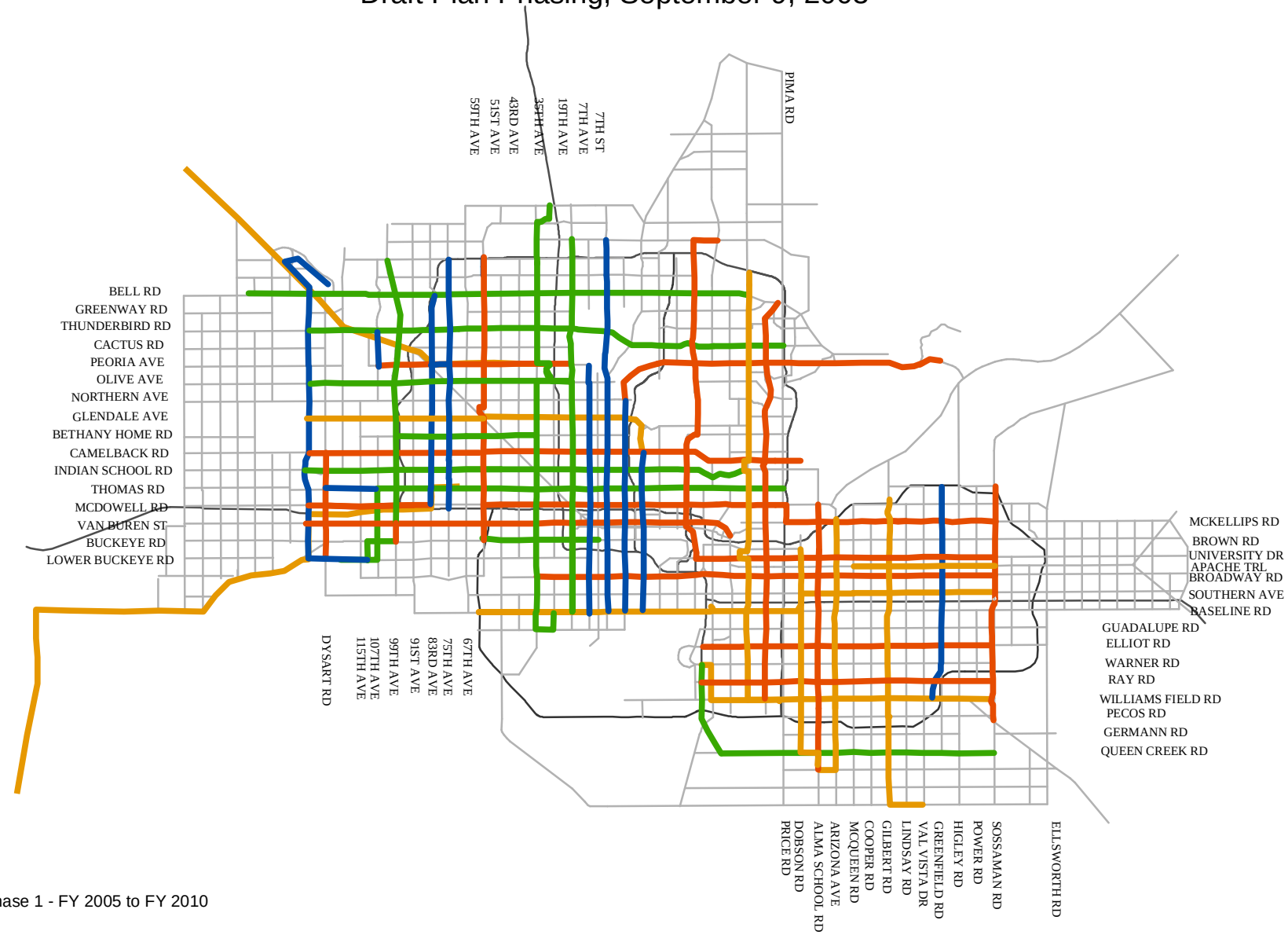
PROPOSED SUPER GRID AND RURAL SERVICE
Draft Plan Phasing, September 9, 2003



LEGEND

- Phase 1 - FY 2005 to FY 2010
- Phase 2 - FY 2011 to FY 2015
- Phase 3 - FY 2016 to FY 2020
- Phase 4 - FY 2021 to FY 2025

0 2.5 5 10 Miles

N

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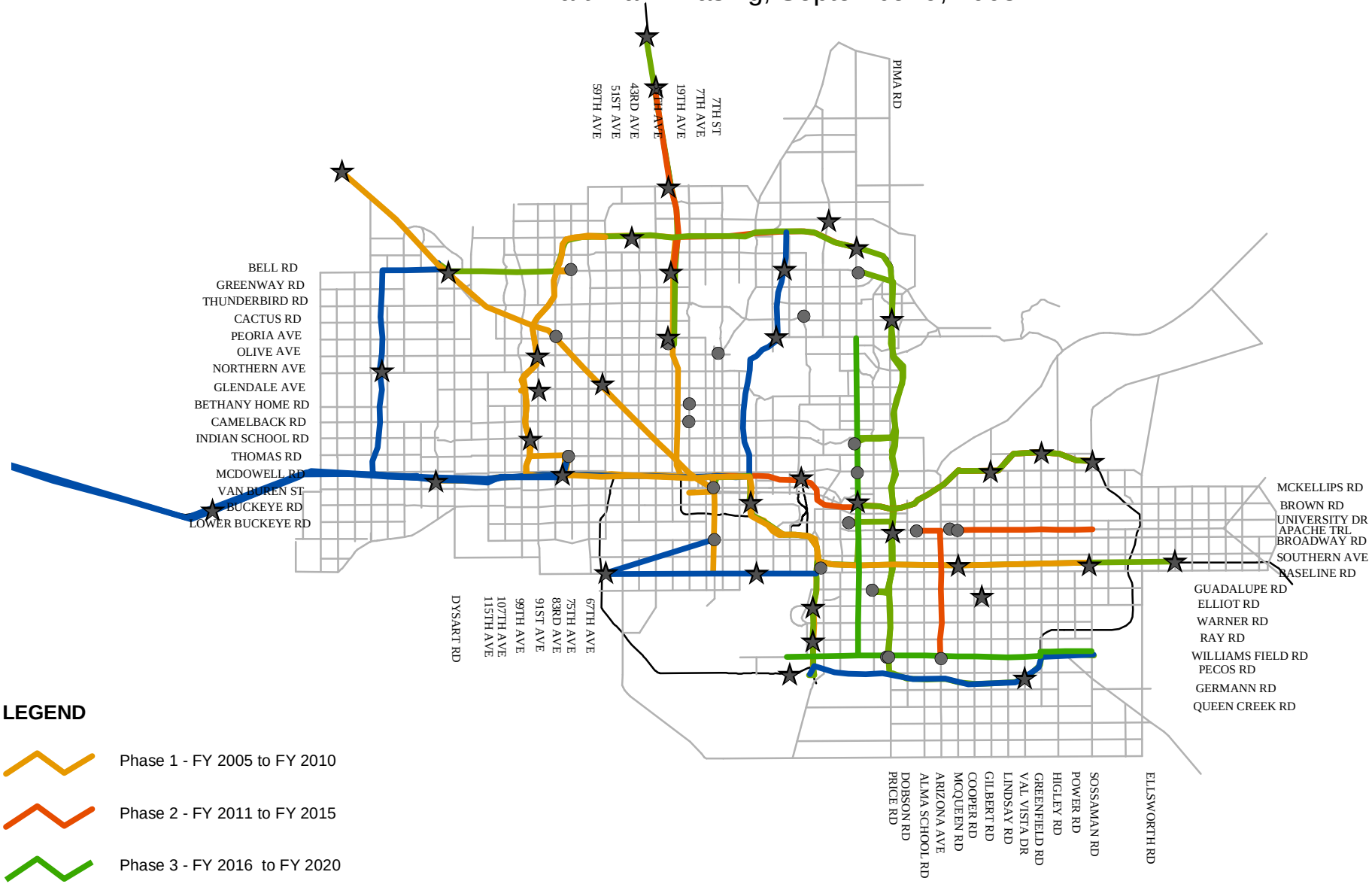
PROPOSED FREEWAY AND ARTERIAL BRT ROUTES
Draft Plan Phasing, September 9, 2003



LEGEND

- Phase 1 - FY 2005 to FY 2010
- Phase 2 - FY 2011 to FY 2015
- Phase 3 - FY 2016 to FY 2020
- Phase 4 - FY 2021 to FY 2025
- Planned or Existing Park-and-Ride
- Planned or Existing Transit Center

0 2.5 5 10 Miles

N

Valley Metro®
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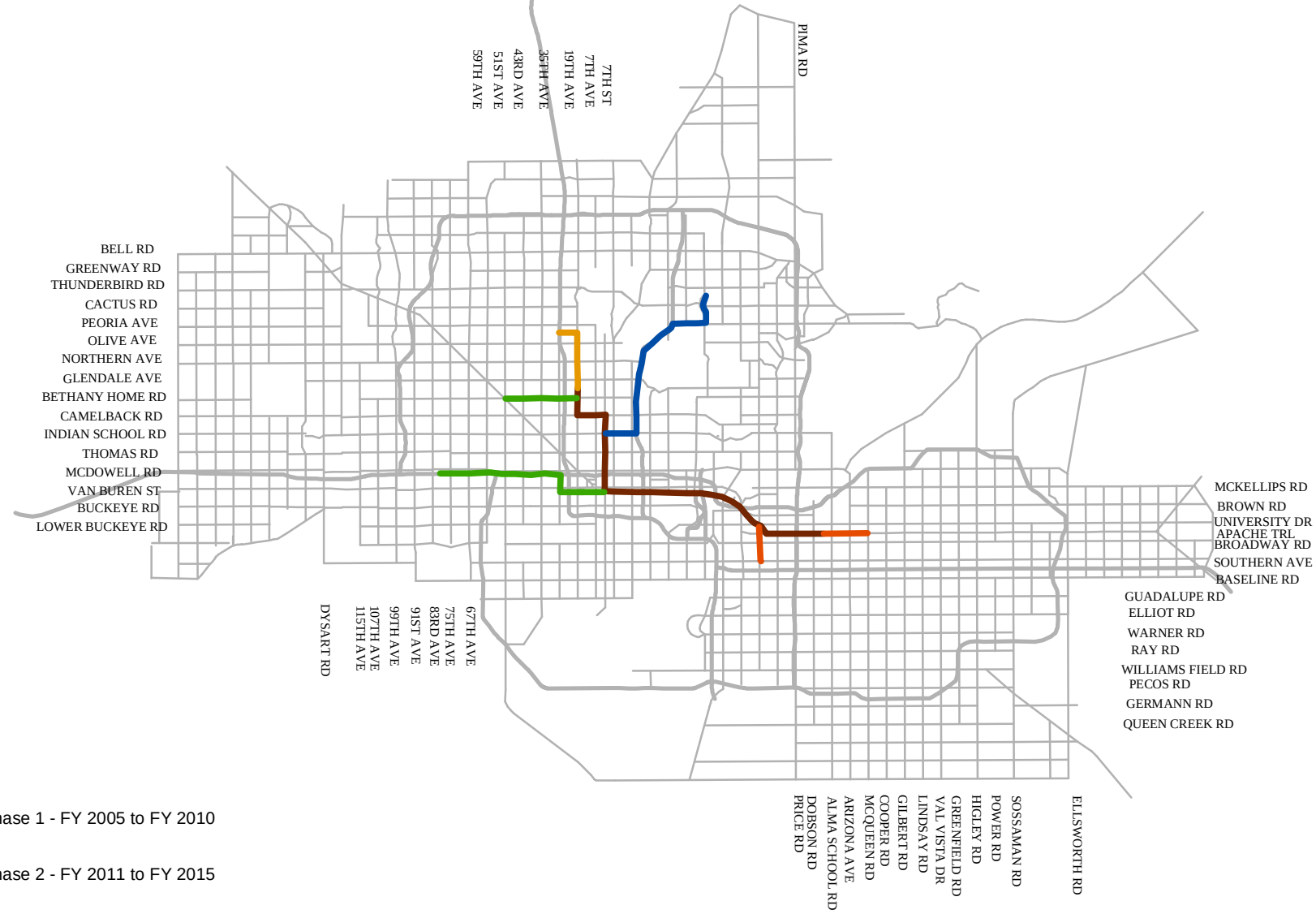
IDENTIFIED HIGH CAPACITY CORRIDORS
Draft Plan Phasing, September 9, 2003



LEGEND

- Phase 1 - FY 2005 to FY 2010
- Phase 2 - FY 2011 to FY 2015
- Phase 3 - FY 2016 to FY 2020
- Phase 4 - FY 2021 to FY 2025
- Phoenix Minimum Operating Segment

0 2.5 5 10 Miles

N

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Table D-1: Freeway/Highway Projects Phasing

Facility	Segment	Length (miles)	Number of Through Lanes in Each Direction: Current GP	Current HOV	Plan GP	Plan HOV	New Lanes GP	New Lanes HOV	Regional Costs (2002 Dollars, Millions): GP Phase I	GP Phase II	GP Phase III	GP Phase IV	HOV Phase I	HOV Phase II	HOV Phase III	HOV Phase IV	Total Costs (2002 Dollars, Millions): GP	HOV	Total	Volumes (ADT, thousands)*: 2001 GP	2001 HOV	2015 GP	2015 HOV	2025 GP	2025 HOV	Phase (Final Construction): GP	HOV
I-8	Yuma County to SR 85	37	2	0	2	0	0	0									0	0	0								
	SR 85 to Pinal County	31	2	0	2	0	0	0									0	0	0								
	Sub-total								$ 0.0							$ 0.0	$ 0.0	$ 0.0	$ 0.0								
I-10	Yuma County to Sun Valley Parkway	39	2	0	2	0	0	0									0	0	0								
	Sun Valley Parkway to SR 85	3	2	0	2	0	0	0									0	0	0								
	SR 85 to Loop 303	12	2	0	3	0	1	0				106					106	0	106	50		124		143		IV	
	Loop 303 to Dysart	5	2	0	4	1	2	1		66				28			66	28	94	80		158	14	188	26	II	II
	Dysart to 101L	6	3-4	0	4-5	1	1	1		35				22			35	22	57	114		177	26	174	42	II	II
	101L to I-17	7	4	1	5	1	1	0	79								79	0	79	163		239		219		I	
	I-17 to SR 51 Interchange	5	3-5	1	3-5	1	0	0									0	0	0								
	SR 51 Interchange to 40th St (CD Roads)	3	3-6	1	3-6	1	CD	0		120							120	0	120	150						II	
	40th St to Baseline Road (CD Roads)	6	3-6	1	3-6	1	CD	0	380								380	0	380	220						I	
	Baseline Road to Loop 202 Interchange	6	3-4	1	4-5	1	1	0		53							53	0	53	130		189		199		II	
	Loop 202 Interchange to Riggs Rd	6	2	0	3	1	1	1	23				23				23	23	46	60		124	4	132	7	II	II
	Riggs Rd to Pinal County	1	2	0	2	0	0	0																			
	Sub-total								$ 482.0	$ 274.0	$ 0.0	$ 106.0	$ 23.0	$ 50.0	$ 0.0	$ 0.0	$ 862.0	$ 73.0	$ 935.0								
I-17	Yavapai County to New River	10	2	0	2	0	0	0									0	0	0								
	New River to Anthem Way	3	2	0	3	0	1	0				26					26	0	26	26		48		68		IV	
	Anthem Way to Carefree Hwy	5	2	0	3	1	1	1				44				28	44	28	72	50		91	3	110	4	IV	IV
	Carefree Hwy to Loop 101	9	2-3	0	4-5	1	2	1	119				50				119	50	169	75		170	6	205	18	I	I
	Loop 101 to Arizona Canal (between Peoria & Dunlap)	6	3	1	4	1	1	0		53							53	0	53	154		191		201		II	
	Arizona Canal to McDowell Rd	7	3-4	1	5-6	1	2	0		40	960						1,000	0	1,000	179		231		243		III	
	McDowell to I-10	1	3	0	3	0	0	0									0	0	0								
	I-10 (west) to I-10 (east)	7	3	0	3	1	0	1							77		0	77	77	110			22		35		III
	Sub-total								$ 119.0	$ 93.0	$ 960.0	$ 70.0	$ 50.0	$ 0.0	$ 77.0	$ 28.0	$1,242.0	$ 155.0	$1,397.0								
Loop 101	Agua Fria: I-10 to Grand Ave	10	3	0	4	1	1	1				85			53		85	53	138	90		162	9	186	16	IV	III
	Agua Fria: Grand Ave to I-17	12	3	0	4	1	1	1				102				64	102	64	166	104		155	6	179	17	IV	IV
	Sub-total								$ 0.0	$ 0.0	$ 0.0	$ 187.0	$ 0.0	$ 0.0	$ 53.0	$ 64.0	$ 187.0	$ 117.0	$ 304.0								
	Pima: I-17 to SR 51	7	3	0	4	1	1	1				59		37			59	37	96	73		198	9	214	26	IV	II
	Pima: SR 51 to Shea Blvd	10	3	0	4	1	1	1				85		29			85	29	114	60		178	14	192	25	IV	II
	Pima: Shea Blvd to Loop 202/Red Mtn	11	3	0	4	1	1	1		94			83				94	83	177	137		206	32	221	45	II	I
	Sub-total								$ 0.0	$ 94.0	$ 0.0	$ 144.0	$ 83.0	$ 66.0	$ 0.0	$ 0.0	$ 238.0	$ 149.0	$ 387.0								
	Price: Loop 202/Red Mtn to approx. Baseline Rd	4	4	0	4	1	0	1					22				0	22	22	191			33		49		I
	Price: Baseline Rd to Loop 202/Santan	6	3	0	4	1	1	1				51	31				51	31	82	100		169	19	197	33	IV	I
	Price: Loop 202/Santan to I-10	6	0	0	TBD	TBD	TBD	TBD									0	0	0								
	Sub-total								$ 0.0	$ 0.0	$ 0.0	$ 51.0	$ 53.0	$ 0.0	$ 0.0	$ 0.0	$ 51.0	$ 53.0	$ 104.0								
Loop 202	Red Mountain: I-10/SR 51 Interchange to Rural Rd	7	3-4	1	4-5EB, 3-4WB	1	1 EB	0	67								67	0	67	192		196		208		I	
	Red Mountain: Rural Road to Loop 101	2	4	1	5	1	1	0	10	29							39	0	39			222		239		II	
	Red Mountain: Loop 101 to Gilbert	6	3	0	4	1	1	1		51			32				51	32	83	88		186	25	190	37	II	I
	Red Mountain: Gilbert to Higley	5	0	0	4	1	1	1				42			27		42	27	69			162	10	165	20	IV	III
	Red Mountain: Higley to US 60	10	0	0	4	1	1	1				85				52	85	52	137			140	4	165	20	IV	IV
	Sub-total								$ 77.0	$ 80.0	$ 0.0	$ 127.0	$ 32.0	$ 0.0	$ 27.0	$ 52.0	$ 284.0	$ 111.0	$ 395.0								
	Santan: I-10 to approx. Dobson	5	3	0	4	1	1	1				43		27			43	27	70			173	12	191	23	IV	II
	Santan: Dobson to Higley	11	0	0	4	1	1	1				93		40		18	93	58	151			131	11	167	26	IV	IV
	Santan: Higley to US 60	7	0	0	4	1	1	1				59				37	59	37	96			133	5	158	10	IV	IV
	Sub-total								$ 0.0	$ 0.0	$ 0.0	$ 195.0	$ 0.0	$ 67.0	$ 0.0	$ 55.0	$ 195.0	$ 122.0	$ 317.0								
	South Mountain: I-10 (West) to 51st Ave	10	0	0	3	0	3	0	300	190							490	0	490			127		148		I to II	
	South Mountain: 51st Ave to Loop 202/I-10	12	0	0	3	0	3	0	70	507							577	0	577			138		150		II	
	Sub-total								$ 370.0	$ 697.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$1,067.0	$ 0.0	$1,067.0								

ADT: Average Daily Traffic
GP: General Purpose Lanes
HOV: High Occupancy Vehicle Lanes
TBD: To be determined in future studies
*Traffic volumes provided only where improvements are identified.

Table D-1: Freeway/Highway Projects Phasing (continued)

Facility	Segment	Length (miles)	Number of Through Lanes in Each Direction: Current GP	Current HOV	Plan GP	Plan HOV	New Lanes GP	New Lanes HOV	Regional Costs (2002 Dollars, Millions): GP Phase I	GP Phase II	GP Phase III	GP Phase IV	HOV Phase I	HOV Phase II	HOV Phase III	HOV Phase IV	Total Costs (2002 Dollars, Millions): GP	HOV	Total	Volumes (ADT, thousands)*: 2001 GP	2001 HOV	2015 GP	2015 HOV	2025 GP	2025 HOV	Phase (Final Construction): GP	HOV
Loop 303	I-17 to US 60 (Grand Avenue)	18	0	0	3	0	3	0	250	395							645	0	645			56		119		I to II	
	US 60 (Grand Avenue) to I-10	15	0	0	3	0	3	0	50	495							545	0	545			92		133		II	
	I-10 to I-10R	5	0	0	3	0	3	0		10	220						230	0	230			57		122		III	
	Sub-total								$ 300.0	$ 900.0	$ 220.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$1,420.0	$ 0	$1,420.0								
SR 51	Loop 101 to Shea Blvd	6	3	0	4	1	1	1				51	32				51	32	83	80		116	5	148	9	IV	I
	Shea Blvd to Loop 202/Red Mtn	10	3-5	1	3-5	1	0	0									0	0	0								
	Sub-total								$ 0.0	$ 0.0	$ 0.0	$ 51.0	$ 32.0	$ 0.0	$ 0.0	$ 0.0	$ 51.0	$ 32.0	$ 83.0								
SR 71	Yavapai County to US 60		1	0	1	0	0	0									0	0	0								
SR 74	US 60/Grand Avenue to Loop 303		1	0	1	0	0	0									0	0	0								
	Loop 303 to I-17		1	0	1	0	0	0									0	0	0								
	Sub-total								$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0								
SR 85	I-10 to Hazen Rd		1-2	0	3	0	0-1	0	50								50	0	50							I	
	Hazen Rd to I-8		1-2	0	2	0	0-1	0	40								40	0	40							I	
	I-8 to Pinal County		1	0	1	0	0	0									0	0	0								
	Sub-total								$ 90.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 90.0	$ 0.0	$ 90.0								
SR 87	Loop 202/Red Mountain to Shea Blvd		2	0	2	0	0	0									0	0	0								
	Shea Blvd to Pinal County		2	0	2	0	0	0									0	0	0								
	Sub-total								$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0								
SR 88	Pinal County to Gila County		1	0	1	0	0	0									0	0	0								
SR 143	Hohokam: Washington St. to I-10		2-3	0	2-3	0	0	0									0	0	0								
SR 153	Sky Harbor Expressway		3	0	3	0	0	0									0	0	0								
SR 238	Maricopa Rd: Gila Bend to Maricopa		1	0	1	0	0	0									0	0	0								
SR 347	Maricopa Rd: I-10 to Pinal County		2	0	2	0	0	0									0	0	0								
US 60	La Paz County to Wickenburg		1	0	1	0	0	0									0	0	0								
	Grand Avenue: Wickenburg to Loop 303		2	0	2	0	0	0									0	0	0								
	Grand Avenue: Loop 303 to Loop 101(plus '08 program	10	2-3	0	3	0	0-1	0	39	64							103	0	103	42		42		47		II	
	Grand Avenue: Loop 101 to Van Buren (includes grade separations at 51st, 35th & 19th Ave)	11	2-3	0	3	0	0-1	0	30	20		97					147	0	147	42		53		55		I to IV	
	Sub-total								$ 69.0	$ 84.0	$ 0.0	$ 97.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 250.0	$ 0.0	$ 250.0								
	Superstition: I-10 to Loop 101	4.5	3	1	4	1	1	0	9								9	0	9	124						I	
	Superstition: Loop 101 to Val Vista	8	4-5	1	5	1	0	0									0	0	0								
	Superstition: Val Vista to Power	4	3	0	5	1	2	1	50				35				50	35	85	145		204	35	232	38	I	I
	Superstition: Power to Crismon	4	3	0	3	1	0	1									0	0	0								
	Superstition: Crismon to Meridian Road	2	2-3	a	3-4	1	1	1			18				13		18	13	31	43		143	17	138	28	III	III
	Sub-total								$ 59.0	$ 0.0	$ 18.0	$ 0.0	$ 35.0	$ 0.0	$ 13.0	$ 0.0	$ 77.0	$ 48.0	$ 125.0								
US 93	Yavapai County to Wickenburg		1	0	1	0	0	0									0	0	0								
I-10 R	SR 85 to Loop 303	11	0	0	1	0	1	0	2		21	60					83	0	83			16		19		IV	
I-10 R	Loop 303 to Loop 202/South Mountain	13	0	0	3	0	3	0	8	60		654					722	0	722			124		145		IV	
	Sub-total								$ 10.0	$ 60.0	$ 21.0	$ 714.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 805.0	$ 0.0	$ 805.0								
TBD	Wickenburg Bypass		0	0	2	0	2	0	27								27	0	27							I	
WGP	Loop 202 to Ellsworth	2	0	0	3	0	3	0	2	40	113						155	0	155			137		151		III	
WGP	Ellsworth to Meridian	3	0	0	3	0	3	0		10	160						170	0	170			137		151		III	
	Sub-total								$ 2.0	$ 50.0	$ 273.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 0.0	$ 325.0	$ 0.0	$ 325.0								
	R/W protection for 303L (extension south of MC 85) and SR 74 (US 60 to 303L)																		100								
	Other Projects in ADOT 03-07 Program																		18								
Total									**$1,605.0**	**$2,332.0**	**$1,492.0**	**$1,742.0**	**$308.0**	**$183.0**	**$170.0**	**$199.0**	**$7,171.0**	**$860.0**	**$8,149.0**								

ADT: Average Daily Traffic
GP: General Purpose Lanes
HOV: High Occupancy Vehicle Lanes
TBD: To be determined in future studies
*Traffic volumes provided only where improvements are identified.

Table D-2: New/Improved Interchanges Phasing*

Facility	Arterial	Regional Costs (2002 Dollars, Millions)	(ADT, thousands) 2025	Phase
New Interchanges on Existing Freeways & State Highways				
I-10	Bullard Rd	9.2	30.9	I
	Chandler Heights	13.8	1.1	IV
	El Mirage	17.3	34.7	IV
	Perryville Rd	9.2	41.5	II
I-17	Dixileta Dr	9.2	31.1	II
	Dove Valley Rd	18.4	9.4	IV
	Jomax Rd	18.4	39.8	I
L101	64th St	18.4	44.3	I
	Beardsley Rd	27.6	24.3	II
	Bethany Home Rd	20.7	30.5	I
L202	Mesa Dr	4.6	27.4	IV
US 60	Superstition: Lindsay Rd	4.6	16.2	II
	Superstition: Meridian Rd	4.6	8.9	II
	Other Projects in ADOT FY 03-07 Program	6.7		
Subtotal		$182.7		
New High Occupancy Vehicle Ramps at System Freeway Interchanges				
L101	I-10	60.0		IV
	I-17	72.0		IV
L202	Red Mtn & US 60/Superstition	20.4		IV
	Santan & I-10	20.4		II
	Santan & L101/Price	20.4		III
SR 51	L101/Pima	20.4		I
Sub-total		$213.6		
Total		**$396.3**		

ADT: Average Daily Traffic

* Not including interchanges constructed as part of new freeway construction

Table D-3: Arterial Projects Phasing

Facility	Segment	Comments	Length (miles)	Regional Costs (2002 Dollars, Millions)	Volumes (ADT, thousands) 2003	2015	2025	Phase
Arterial Capacity Improvements								
101L	Princess Dr to Scottsdale Rd	Add frontage roads	2	19.1		9.0	10.0	I
101L south frontage roads	Hayden to Princess	Add frontage roads	1	11.4		13.0	23.0	I
Arizona Avenue	Ocotillo to Hunt Hwy	Widen and Improve Roadway	3	5.1	19.3	24.0	33.7	II
Baseline Road	Power Road to Meridian Road	Widen and Improve Roadway	6	14.7	11.9	13.2	30.0	IV
Beardsley Rd	Loop 101 to Lake Pleasant Pkwy	Construct Roadway	3	19.1		28.3	43.3	I-II
Black Mtn Pkway	SR 51 to Blk Mtn Pkwy	Construct Roadway	1	18.5		44.0	45.0	I
Broadway Rd	Dobson Rd to Country Club Dr	Widen to 6 lanes	2	6.1	31.0	37.0	42.0	I
Carefree Highway	Cave Creek Rd to Scottsdale Rd	4 lanes +median	2	7.7	14.0	16.0	25.0	III
Crismon Rd	Broadway Rd to Germann Rd	Widen to 6 lanes	9	30.2		26.5	32.0	IV
Dobson Rd	Salt River	Construct New Bridge	1	15.3		37.0	37.0	I
El Mirage Rd	Bell Rd to Jomax Rd	Construct Roadway	6	16.1	9.5	20.8	30.0	III
El Mirage Rd	Paradise Ln over Grand Ave to Thunderbird Rd	Construct Roadway w/ Grade Separation	2	17.6		29.0	39.0	I-II
El Mirage Rd	Thunderbird to Northern Ave	Widen and Improve Roadway	4	13.8	5.5	34.8	38.3	III
Elliot Rd	Power Rd to Meridian Rd	Widen to 6 lanes	6	14.9	7.6	20.8	29.5	IV
Germann Rd	Ellsworth Rd to Signal Butte Rd	Widen to 6 lanes	2	10.3	2.0	10.0	39.0	IV
Germann Rd	Gilbert Road to Power Road	Widen and Improve Roadway	6	18.2	9.2	34.3	42.0	I
Gilbert Rd	Loop 202 (Santan) to Hunt Hwy	Widen Roadway	5	17.2	7.8	25.5	33.5	IV
Gilbert Rd	Salt River	Construct New Bridge	1	11.5		28.0	51.0	II
Greenfield Road	Elliot Road to Warner Road	Widen and Improve Roadway	1	3.4	13.0	24.0	34.0	IV
Greenfield Road	University Road to Baseline Road	Widen and Improve Roadway	3	8.9		37.0	41.3	I
Guadalupe Road	Power Road to Meridian Road	Widen and Improve Roadway	6	19.0		23.5	30.8	II
Happy Valley Rd	Loop 303 to 67th Ave	6 Lane Controlled Access	5	17.0	14.2	24.8	39.1	IV
Happy Valley Rd	67th Ave to I-17	6 Lane Controlled Access	4	13.6	14.2	24.8	39.1	IV
Hawes Road	Broadway Road to Ray Road	Widen and Improve Roadway	6	17.1		15.3	23.7	IV
Higley Rd Pkwy	US 60 to 202L (Red Mt.)	6 Lane Controlled Access	6	13.8		20.3	22.8	III
Jomax Rd	Loop 303 to Sun Valley Parkway	Widen and Improve Roadway	17	17		10.0	29.5	III
Lake Pleasant Parkway	Bearsdley to 303L	Corridor Improvements	6	46.0	3.0	21.5	37.6	II
McKellips Rd	E of Sossaman to Meridian Rd	Widen to 6 lanes	5	16.4		19.4	38.8	IV
McKellips Rd	Gilbert Rd to Power Rd	Widen to 6 lanes	6	17.9	18.8	23.5	31.7	I
McKellips Rd	Salt River	Construct New Bridge	1	11.5		38.0	39.0	II
McKellips Road	Loop 101 Pima - SRP-MIC	6 lanes inc. median	2	32.4	13.8	40.5	48.5	II
Meridian Rd	Baseline Rd to Germann Rd	Construct 6 lane Roadway	7	24.1		15.1	32.3	III
Mesa Dr	Broadway Rd to US 60	Widen to 6 lanes	2	7.7	33.4	41.0	44.0	I
Miller Rd/L101 Underpass	Princess to Center	Construct Underpass	0.5	11.5				III
Northern Ave	Grand Ave to Loop 101	Grand connection and ultimate const	4	70.0	16.0	49.0	61.0	III
Northern Ave	Loop 101 to Loop 303	L101 connection and ultimate const	8	71.3	7.8	58.0	61.0	IV
Northern Ave	Dysart Rd to Loop 303	R/W Protection and interim roadway	4	50.0	2.0	35.0	47.0	I
Pecos Road	Ellsworth Road to Meridian Road	Widen and Improve Roadway	3	10.4	3.0	17.3	35.7	I
Pima Rd	Deer Valley to Happy Valley & Dyn to C.C.	4 lanes inc. drainage and ITS	7	68.4	24.2	25.5	24.6	II
Pima Rd	Happy Valley to Dynamite	4 lanes inc. drainage and ITS	2	19.5	24.2	25.5	24.6	III
Pima Rd	S. City Limits to 90th St	4 lanes, ITS	8	25.2		34.4	35.8	I
Power Rd	Baseline Rd to Williams Field Rd	Widen to 6 lanes	5	14.9		25.4	39.2	II
Power Rd	Williams Field to Chandler Heights	Widen and Improve Roadway	5	17.0	12.6	16.4	29.4	IV
Price Rd Extention	Loop 202 to I-10	Construct Roadway	6	46.0		35.0	41.2	III
Queen Creek Rd	Arizona Ave to Power Rd	Widen Roadway	9	31.1	10.0	36.0	43.8	II
Ray Road	Val Vista Road to Power Road	Widen and Improve Roadway	4	13.7	16.0	24.0	36.0	IV
Ray Road	Sossaman Rd to Meridian Rd	Construct 4/6 lane Roadway	5	20.7		14.2	37.8	IV
Rio Salado Pkwy	7th St to Loop 202 (SM)	Construct Roadway	7	36.7		45.4	54.1	II
Runway Tunnel	Additional funds (original $40 m total)	Additional funds for Tunnel	1	57.7		44.0	50.0	III
Scottsdale Rd	Thompson Peak to Happy Valley	6 lanes inc. drainage and ITS	3	11.0	30.5	32.8	39.6	II
Scottsdale Rd	Happy Valley to Carefree Hwy	6 lanes inc. drainage and ITS	6	23.4	30.5	32.8	39.6	III
Shea Blvd	Palisades Blvd to Saguaro Blvd	6 lanes +median	3	5.0	21.0	34.0	40.7	I
Shea Blvd	Loop 101 to SR 87	Corridor Improvements	12	19.1	38.0	48.5	55.3	IV
Signal Butte Road	Broadway Road to Pecos Road	6 lanes inc. drainage and ITS	8	27.2	3.2	8.5	32.0	IV
Sonoran Pkwy	Central to 32nd Ave	Construct Roadway	4	26.8		33.3	51.3	II
Southern Ave	Country Club Dr to Recker Rd	Widen to 6 lanes	8	25.3		33.6	44.6	I
Southern Ave	Sossaman Rd to Meridian Rd	Widen to 6 lanes	5	14.9	8.7	19.6	35.8	IV
Thomas Rd	Gilbert Rd to Val Vista Dr	Construct 4 lane Roadway	2	4.6		27.5	35.5	I
Union Hills Dr	Hayden to Pima	Widen and Improve Roadway	1	11.2		4.0	10.0	IV
University Dr	Val Vista Dr to Hawes Rd	Widen to 6 lanes	6	17.9	21.1	15.3	24.3	IV
Val Vista Dr	University Dr to Baseline Rd	Widen to 6 lanes	3	9.1		37.0	42.0	III
Val Vista Dr	Warner Road to Pecos Road	Widen and Improve Roadway	3	9.1	19.5	22.7	30.0	II
Sub-total				$1,301.0				

ADT: Average Daily Traffic

Table D-3: Arterial Projects Phasing (continued)

Facility	Segment	Comments	Length (miles)	Regional Costs (2002 Dollars, Millions)	Volumes (ADT, thousands) 2003	2015	2025	Phase
Intersection Improvements (Only)								
Arizona Ave	Elliot Rd	Improve intersection		3.1		31.5	34.0	IV
Arizona Ave	Ray Rd	Improve intersection		3.1		38.5	43.5	I
Arizona Ave	Chandler Blvd	Improve intersection		3.1		34.5	40.0	II
Chandler Blvd	Alma School Rd	Improve intersection		3.1		30.0	40.5	I
Chandler Blvd	Dobson Rd	Improve intersection		3.1		32.0	40.5	I
Chandler Blvd	Kyrene Rd	Improve intersection		3.1		26.5	34.5	II
Country Club Dr	University Dr	Improve intersection		2.3		38.0	40.0	III
Country Club Dr	Brown Rd	Improve intersection		2.3		26.0	30.0	IV
Dobson Rd	Guadalupe Rd	Improve intersection		2.3		37.0	42.0	I
Dobson Rd	University Dr	Improve intersection		2.3		35.0	40.0	III
Elliot Rd	Greenfield Rd	Improve intersection		3.1		23.0	31.5	IV
Elliot Rd	Higley Rd	Improve intersection		3.1		25.5	33.0	IV
Elliot Rd	Cooper Rd	Improve intersection		3.1		31.5	35.5	I
Elliot Rd	GilbertRd	Improve intersection		3.1		27.0	31.5	III
Elliot Rd	Val Vista Dr	Improve intersection		3.1		25.0	32.5	IV
Gilbert Rd	University Dr	Improve intersection		2.3		26.0	33.5	IV
Guadalupe Rd	Greenfield Rd	Improve intersection		3.1		26.0	33.0	IV
Guadalupe Rd	Power Rd	Improve intersection		3.1		23.5	31.0	IV
Guadalupe Rd	Cooper Rd	Improve intersection		3.1		34.0	37.5	I
Guadalupe Rd	Gilbert Rd	Improve intersection		3.1		30.5	36.5	I
Guadalupe Rd	Val Vista Dr	Improve intersection		3.1		27.5	34.5	III
Higley Rd Pkwy	US 60 to 202L (Red Mt.)	Construct 3 Grade Separations		22.9		20.3	22.8	III
Kyrene Rd	Ray Rd	Improve intersection		3.1		28.5	34.5	IV
Lindsay Rd	Brown Rd	Improve intersection		2.3		22.5	26.0	IV
Ray Rd	Alma School Rd	Improve intersection		3.1		36.5	42.0	I
Ray Rd	Dobson Rd	Improve intersection		3.1		35.5	43.0	II
Ray Rd	Gilbert Rd	Improve intersection		3.1		29.0	38.0	III
Ray Rd	McClintock Dr	Improve intersection		3.1		31.0	36.5	II
Ray Rd	Rural Rd	Improve intersection		3.1		27.5	34.5	II
Stapley Dr	University Dr	Improve intersection		2.3		24.5	28.5	IV
Warner Rd	Cooper Rd	Improve intersection		3.1		30.0	40.0	I
Warner Rd	Greenfield Rd	Improve intersection		3.1		27.0	36.0	II
Sub-total				$113.4				
Total				**$1,414.5**				

ADT: Average Daily Traffic

Table D-4: Regional Bus Services Phasing*

Segment	Phase (Begin Service)	Operating Cost (2002 Dollars, Millions)	Operating Cost by Phase (2002 Dollars, Millions)			
			Phase I	Phase II	Phase III	Phase IV
Freeway Express/BRT						
North Loop 101 Connector Surprise to Scottsdale P&R)	I	4.6	1.0	1.1	1.1	1.3
North Glendale Express	I	9.5	1.8	2.5	2.5	2.8
Papago Fwy Connector (to West Buckeye P&R)	I	3.3	0.6	0.9	0.9	1.0
West Loop 101 Connector (to North Glendale P&R)	I	5.1	0.9	1.3	1.3	1.5
East Loop 101 Connector	I	3.3	0.5	0.9	0.9	1.0
Red Mountain Express	I	14.4	2.0	4.0	4.0	4.4
Main Street Arterail BRT	I	10.2	1.4	2.8	2.8	3.1
Desert Sky Express	I	8.9	0.8	2.6	2.6	2.9
Apache Junction Express	I	3.5	0.3	1.0	1.0	1.1
Arizona Avenue Arterial BRT	I	8.7	0.8	2.6	2.6	2.8
Buckeye Express (to West Buckeye P&R)	I	1.7	0.1	0.5	0.5	0.6
Superstition Fwy Connector	II	0.8	0.0	0.2	0.3	0.3
Pima Express (To Airpark P&R)	II	3.2	0.0	0.8	1.1	1.3
Grand Avenue Limited	II	5.4	0.0	1.4	1.9	2.1
Scottsdale/Rural Arterial BRT	II	9.1	0.0	0.8	4.2	4.2
Peoria Express (to Peoria P&R)	II	7.6	0.0	1.0	3.2	3.5
S. Central Avenue	II	21.5	0.0	2.7	9.0	9.9
South Central Avenue Arterial BRT	II	3.8	0.0	0.5	1.6	1.8
Black Canyon Freeway Corridor	II	4.9	0.0	0.2	2.2	2.4
Ahwatukee Connector	III	1.1	0.0	0.0	0.5	0.6
Santan Express	III	9.2	0.0	0.0	2.9	6.3
Anthem Express	III	2.5	0.0	0.0	0.5	1.9
Red Mountain Fwy Connector	III	2.3	0.0	0.0	0.5	1.8
Superstition Springs Express	III	15.7	0.0	0.0	3.4	12.3
Deer Valley Express	III	9.5	0.0	0.0	0.8	8.7
Avondale Express	III	6.6	0.0	0.0	0.6	6.1
North I-17 Express	IV	0.7	0.0	0.0	0.0	0.7
Loop 303 Express	IV	3.7	0.0	0.0	0.0	3.7
SR. 51 Express	IV	5.5	0.0	0.0	0.0	5.5
Chandler Boulevard Arterial BRT	IV	14.3	0.0	0.0	0.0	14.3
Ahwatukee Express	IV	12.2	0.0	0.0	0.0	12.2
Regional Passenger Support Services		22.2	1.1	2.9	5.3	12.8
Sub-total		$234.8	$11.2	$30.8	$58.2	$134.6
Supergrid Route						
Scottsdale/Rural	I	84.1	21.0	21.0	21.0	21.1
Glendale Avenue	I	11.7	2.2	3.1	3.1	3.4
Main Street	I	17.2	2.4	4.8	4.8	5.3
Baseline/Southern/Dobson ext	I	88.2	7.8	26.0	26.0	28.5
Arizona Avenue/Country Club	I	25.6	2.3	7.5	7.5	8.3
Gilbert Road	I	26.9	2.4	7.9	7.9	8.7
Chandler Blvd.	I	22.5	0.7	7.0	7.0	7.7
University Drive (to Ellsworth Road)	II	42.8	0.0	12.8	14.3	15.7
Camelback Road	II	6.2	0.0	1.9	2.1	2.3
Broadway	II	41.5	0.0	10.4	14.8	16.3
Elliot Road	II	41.1	0.0	10.3	14.7	16.1
Alma School Rd.	II	27.1	0.0	6.8	9.7	10.7
Hayden/McClintock	II	42.2	0.0	8.1	16.2	17.8
Peoria Ave./Shea (3)	II	12.8	0.0	2.5	4.9	5.4
Dysart Road	II	8.3	0.0	1.6	3.2	3.5
59th Avenue	II	11.5	0.0	1.4	4.8	5.3
McDowell/McKellips	II	35.7	0.0	4.5	14.9	16.4
Power Road	II	15.4	0.0	1.9	6.4	7.0
Tatum/44th Street	II	3.9	0.0	0.5	1.6	1.8
Ray Road	II	42.4	0.0	5.3	17.7	19.4
Van Buren	II	8.7	0.0	0.4	3.9	4.3
Queen Creek Road (Pecos P&R to Power Road)	III	26.1	0.0	0.0	10.1	15.9
Bell Road (via 303)	III	14.9	0.0	0.0	4.7	10.3
Waddell/Thunderbird	III	5.3	0.0	0.0	1.7	3.7
Thomas Road (2)	III	11.9	0.0	0.0	3.7	8.2
Buckeye Road (Litchfield Road to Central Ave.)	III	2.1	0.0	0.0	0.4	1.6
Indian School Road	III	9.6	0.0	0.0	2.1	7.5
Dunlap/Olive Avenue	III	5.6	0.0	0.0	1.2	4.4
99th Avenue	III	1.8	0.0	0.0	0.4	1.4
83rd Avenue/75th Avenue	IV	4.8	0.0	0.0	0.0	4.8
Litchfield Road	IV	3.1	0.0	0.0	0.0	3.1
Greenfield Road	IV	5.3	0.0	0.0	0.0	5.3
Regional Passenger Support Services		79.3	4.3	16.4	25.8	32.8
Sub-total		$785.6	$42.9	$162.0	$256.5	$324.1
Total		**$1,020.3**	**$54.1**	**$192.8**	**$314.8**	**$458.7**

* Runs through calendar year 2025

Table D-4: Regional Bus Services Phasing*

Segment	Phase (Begin Service)	Operating Cost (2002 Dollars, Millions)	Operating Cost by Phase (2002 Dollars, Millions)			
			Phase I	Phase II	Phase III	Phase IV
Freeway Express/BRT						
North Loop 101 Connector Surprise to Scottsdale P&R)	I	4.5	1.0	1.1	1.1	1.2
North Glendale Express	I	9.4	1.7	2.5	2.5	2.7
Papago Fwy Connector (to West Buckeye P&R)	I	3.3	0.6	0.9	0.9	1.0
West Loop 101 Connector (to North Glendale P&R)	I	5.0	0.9	1.3	1.3	1.5
East Loop 101 Connector	I	3.2	0.4	0.9	0.9	1.0
Red Mountain Express	I	14.2	2.0	4.0	4.0	4.4
Main Street Arterail BRT	I	10.1	1.4	2.8	2.8	3.1
Desert Sky Express	I	8.8	0.8	2.6	2.6	2.8
Apache Junction Express	I	3.5	0.3	1.0	1.0	1.1
Arizona Avenue Arterial BRT	I	8.6	0.8	2.5	2.5	2.8
Buckeye Express (to West Buckeye P&R)	I	1.7	0.1	0.5	0.5	0.6
Superstition Fwy Connector	II	0.8	0.0	0.2	0.3	0.3
Pima Express (To Airpark P&R)	II	3.2	0.0	0.8	1.1	1.2
Grand Avenue Limited	II	5.4	0.0	1.3	1.9	2.1
Scottsdale/Rural Arterial BRT	II	9.0	0.0	0.8	4.2	4.2
Peoria Express (to Peoria P&R)	II	7.6	0.0	0.9	3.1	3.5
S. Central Avenue	II	21.3	0.0	2.7	8.9	9.8
South Central Avenue Arterial BRT	II	3.8	0.0	0.5	1.6	1.7
Black Canyon Freeway Corridor	II	4.8	0.0	0.2	2.2	2.4
Ahwatukee Connector	III	1.1	0.0	0.0	0.5	0.6
Santan Express	III	9.1	0.0	0.0	2.8	6.2
Anthem Express	III	2.4	0.0	0.0	0.5	1.9
Red Mountain Fwy Connector	III	2.3	0.0	0.0	0.5	1.8
Superstition Springs Express	III	15.5	0.0	0.0	3.3	12.2
Deer Valley Express	III	9.4	0.0	0.0	0.8	8.6
Avondale Express	III	6.6	0.0	0.0	0.5	6.0
North I-17 Express	IV	0.7	0.0	0.0	0.0	0.7
Loop 303 Express	IV	3.7	0.0	0.0	0.0	3.7
SR. 51 Express	IV	5.4	0.0	0.0	0.0	5.4
Chandler Boulevard Arterial BRT	IV	14.1	0.0	0.0	0.0	14.1
Ahwatukee Express	IV	12.0	0.0	0.0	0.0	12.0
Regional Passenger Support Services		21.9	1.1	2.9	5.2	12.7
Sub-total		$232.1	$11.1	$30.5	$57.6	$133.1
Supergrid Route						
Scottsdale/Rural	I	83.2	20.7	20.8	20.8	20.9
Glendale Avenue	I	11.6	2.1	3.0	3.0	3.4
Main Street	I	17.0	2.4	4.7	4.7	5.2
Baseline/Southern/Dobson ext	I	87.3	7.7	25.7	25.7	28.2
Arizona Avenue/Country Club	I	25.3	2.2	7.4	7.4	8.2
Gilbert Road	I	26.6	2.3	7.8	7.8	8.6
Chandler Blvd.	I	22.2	0.7	7.0	7.0	7.6
University Drive (to Ellsworth Road)	II	42.3	0.0	12.7	14.1	15.5
Camelback Road	II	6.1	0.0	1.8	2.0	2.2
Broadway	II	41.1	0.0	10.3	14.7	16.1
Elliot Road	II	40.6	0.0	10.2	14.5	16.0
Alma School Rd.	II	26.8	0.0	6.7	9.6	10.5
Hayden/McClintock	II	41.7	0.0	8.0	16.0	17.6
Peoria Ave./Shea (3)	II	12.6	0.0	2.4	4.9	5.3
Dysart Road	II	8.2	0.0	1.6	3.2	3.5
59th Avenue	II	11.4	0.0	1.4	4.7	5.2
McDowell/McKellips	II	35.3	0.0	4.4	14.7	16.2
Power Road	II	15.2	0.0	1.9	6.3	7.0
Tatum/44th Street	II	3.9	0.0	0.5	1.6	1.8
Ray Road	II	41.9	0.0	5.2	17.5	19.2
Van Buren	II	8.6	0.0	0.4	3.9	4.3
Queen Creek Road (Pecos P&R to Power Road)	III	25.8	0.0	0.0	10.0	15.8
Bell Road (via 303)	III	14.8	0.0	0.0	4.6	10.1
Waddell/Thunderbird	III	5.3	0.0	0.0	1.7	3.6
Thomas Road (2)	III	11.7	0.0	0.0	3.7	8.1
Buckeye Road (Litchfield Road to Central Ave.)	III	2.0	0.0	0.0	0.4	1.6
Indian School Road	III	9.5	0.0	0.0	2.0	7.5
Dunlap/Olive Avenue	III	5.5	0.0	0.0	1.2	4.3
99th Avenue	III	1.8	0.0	0.0	0.4	1.4
83rd Avenue/75th Avenue	IV	4.8	0.0	0.0	0.0	4.8
Litchfield Road	IV	3.0	0.0	0.0	0.0	3.0
Greenfield Road	IV	5.3	0.0	0.0	0.0	5.3
Regional Passenger Support Services		78.5	4.2	16.2	25.6	32.4
Sub-total		$776.8	$42.4	$160.2	$253.7	$320.5
Total		**$1,009.0**	**$53.5**	**$190.6**	**$311.3**	**$453.6**

* Runs through calendar year 2025

Table D-5: Light Rail Transit Phasing

Facility	Segment	Length (miles)	Regional Cost Route Construction	Regional Cost Support Infrastructure	Phase
Light Rail Transit					
MOS	I9th Ave/Bethany Home to Apache/Longmore	20		164.0	
Metro Center Link	I9th Ave/Bethany Home to Metrocenter	5	150.0	30.0	I
Glendale Link	19th Ave/Bethany Home to Downtown Glendale	5	150.0	30.0	III
I-10 West Link	Washington/Central to I-10 / 79th Ave	11	660.0	0.0	III
Northeast Phoenix Link	Indian School/Central to Paradise Valley Mall	12	720.0	0.0	IV
Tempe South Link	Main/Rural to Rural/Southern	2	120.0	0.0	II
East Mesa Link	Main/Longmore to Main/Mesa Dr.*	2.7	150.0	0.0	II
Systemwide				154.0	
Total		57.7	$1,950.0	$378.0	

*Technology to be determined.

Table D-6
Schedule of Bus-related Capital Investments

Cost Item	Unit Type	Units	Spares	Cost/Unit	Total Cost
Fleet					
Fixed Route Networks	Bus	1,773	365	$400,000	$855,000,000
Rural Routes	Rural Bus	30	6	$60,000	$2,160,000
Paratransit	DAR Van	830	170	$72,000	$72,000,000
Van Pool	Vanpool Van	1350	54	$30,000	$42,120,000
Capital Facilities					
13 Park & Ride Lots	Per Parking Space	3500		$14,000	$49,000,000
6 Transit Centers, 4 Bay	Facilities	6		$1,600,000	$9,600,000
4 Transit Centers, 6 Bay	Facilities	4		$2,300,000	$9,200,000
3 Transit Centers, Major Activity Centers	Facilities	3		$5,500,000	$16,500,000
5 Bus Maintenance Facilities	Vehicle	1425		$118,000	$168,150,000
2 DAR & Rural Bus Maintenance	Vehicle	518		$32,000	$16,576,000
1 Vanpool Maintenance	Vehicle	778		$6,000	$4,668,000
Dedicated BRT ROW & Maint	10 Miles	10		$7,600,000	$76,000,000
Arterial BRT ROW Improvements	Per Mile	50		$330,000	$16,500,000
Bus Stop Pullouts/Improvements	Avg per Location	1200		$22,000	$26,400,000
ITS/VMS	Per Vehicle	2,154		$11,000	$23,688,500
Contingency	5%				$66,137,500
TOTAL					**$1,453,700,000**
			26.6%	RARF:	$387,400,000
			73.4%	FEDERAL:	1,066,300,000

Component	Total	Percent		Sales Tax	Federal
Bus Capital	**$895,753,164**	**61.6%**		**238,711,410**	**657,041,755**
Facilities	**$436,124,405**	**30.0%**		**116,223,839**	**319,900,566**
Paratransit	**$75,431,845**	**5.2%**		**20,102,013**	**55,329,832**
Vanpool	**$44,127,630**	**3.0%**		**11,759,678**	**32,367,952**
Rural	**$2,262,955**	**0.2%**		**603,060**	**1,659,895**
Total Capital	**$1,453,700,000**	**100.0%**		**387,400,000**	**1,066,300,000**