"Building a Quality Arizona"

Statewide Transportation
Planning Framework

Preliminary
Critical Needs Definition

Updated April 17, 2008

For External Review and Input
Will be Updated

Executive Summary

Arizona is in a new era. As the nation's fastest-growing state, our reality demands both a shift in the way we think about transportation and a new paradigm for planning. The state of Arizona is at a transportation funding crossroads; to put it simply, current funding cannot keep pace with the growing transportation needs of the state. We are only a few years away from the point at which Arizona can only pay to maintain existing roads; there will be no money for new road construction.

To do nothing is our worst option.

Over the past four to five years, costs of building infrastructure have risen dramatically; yet the principal current revenue sources – like the state and federal gasoline tax and the reduced vehicle license tax – have diminished and have not maintained their buying power. (The gas tax, in particular, has yielded less real revenue for several reasons, including more fuel-efficient vehicles and the lack of any adjustment for inflation since the early 1990s.)

Consequently, Arizona struggles to keep up. Not only do our tax dollars buy less; we also now pay a "time tax" – the time we must now spend stuck in traffic, away from our homes, families and communities.

With all this in mind, the Arizona Department of Transportation (ADOT) and local/regional leaders from across the state have embarked on development of a new, *Statewide* Transportation Planning Framework. Built with input from regional transportation planning entities, transit organizations, tribal governments, land management agencies, conservation groups, business and community leaders, and the Governor's Growth Cabinet, the Framework uses a *comprehensive, statewide planning process* to formulate, evaluate and prioritize "multimodal" (rail, roads, and more) transportation improvements, integrating those improvements with land use, community and economic development planning strategies.

The guiding principles of the framework planning effort, as directed by the Governor, are as follows:

- Achieving Multimodal Balance (e.g. an appropriate balance among modes of transportation)
- Supporting Smart Growth and Sustainable Land Use
- Tribal Community Involvement
- Supporting Economic Development and Business Community Involvement
- Environmental and Conservation Community Involvement
- Statewide Collaboration with Councils of Governments (COGs), Metropolitan Planning Organizations (MPOs) and Tribal governments

In establishing these principles, and to meet the equally important goals of sustainability and smart growth, the Governor recognized that successful implementation of the Framework will require sensitive planning and design, including critical, integrated land use/transportation strategies such as:

- Developing interconnected, integrated multimodal transportation systems both on a statewide basis and within the regions.

- Planning responsible urban growth patterns that have a strong jobs-to-housing balance, a hierarchy of mixed use activity centers, and a focus on creating quality, multimodal communities created from compact neighborhoods that embody a sense of place.
- Stimulating infill development within existing urban areas to utilize vacant land or redevelopment sites that are currently served with existing infrastructure, integrate with their surrounding neighborhoods, and provide a mix of activities that can thrive with multimodal connectivity to their surroundings.
- Facilitating public policy debate and decisions on transportation, Smart Growth, reduction of greenhouse gas emissions, improved air quality and energy independence, with an emphasis on the interrelated nature of these factors.

This *Preliminary Critical Needs Definition* is one of the most important elements of the Statewide Framework process. It is an evolving project, and is by no means a final "shopping list" for the state. Instead, its purpose is to identify the immediate and short-term needs (2030) of transportation systems throughout the state, and to help ADOT and the Governor's Office better understand the magnitude of the transportation needs that cannot be met with currently available funding.

Three tools were developed to achieve this purpose:

1. Submittal of a Preliminary Critical Needs List, jointly from each COG, each MPO, and their respective ADOT District Engineers. In conducting this effort, it became apparent that the various COGs, MPOs, District Engineers and tribal governments have widely varying interpretations of critical needs. As a result, the submissions are probably more correctly characterized as a "*2030 Identified Improvement Needs Delineation*."

2. Identification by the COGs, MPOs, and their respective District Engineers of *Representative Projects and Programs* that best illustrate their critical transportation needs.

3. Refinement of the *2030 Identified Improvement Needs Definition*, based on the identification of Representative Projects and Programs into Preliminary Critical Needs, utilizing Statewide Transportation Planning Framework Guiding Principles and the formulation of a potential 1 cent state sales tax, as well as other potential funding scenarios.

The total *2030 Identified Improvement Needs Delineation* cost is approximately $162.3 B, broken down as follows:

- High Capacity Roadways (Interstate highways, other freeways and other state highways): $108.5 B
- Public Transit/Rail: $24.7 B
- Local Transportation Improvements: $29.1 B

It was obvious that, as a result of the delineation of over $162 B required in transportation improvements across the state, no single statewide finance mechanism would suffice to meet these needs. ADOT and the Management Consultant (MC) then worked with the COGs and MPOs to identify representative projects that best illustrated the critical needs within each region.

It is assumed that a portion of any new statewide sustainable transportation finance mechanism will be returned to the COGs, MPOs and tribal governments throughout the state to fund local transportation improvements, which could include roads of regional significance, principal arterial roadways, transit extensions and enhancements, bicycle improvements, and pedestrian improvements. As a result, no effort was made to quantify the costs of the Principal Arterials/Local Roads within the Representative Projects and Programs list.

The total *Preliminary Critical Needs* cost is approximately $42.6 B, broken down as follows:

■ Strategic Highway Projects	58%	$24.698 billion
■ Strategic Rail and Transit Projects and Programs	18%	$7.665 billion
■ Local Mobility Projects and Programs	20%	$8.517 billion
■ Transportation Enhancements and Walkable/Bikeable Communities	4%	$1.703 billion
TOTAL	100%	$42.583 billion

Within these Preliminary Critical Needs, three funds have been established to address unique transportation-related needs:

- Leveraging private investments for strategic roadway and rail transit corridors through Public Private Partnerships (PPP)
- Encouraging Transit-Oriented Development (TOD) and walkable and bikeable communities
- Addressing critical habitat preservation and restoration, local open space conservation priorities, and transportation project mitigation in the natural environment where appropriate

The following sections of this document provide more detailed background information related both to the overall Statewide Transportation Planning Framework and the Preliminary Critical Needs Definition.

Background

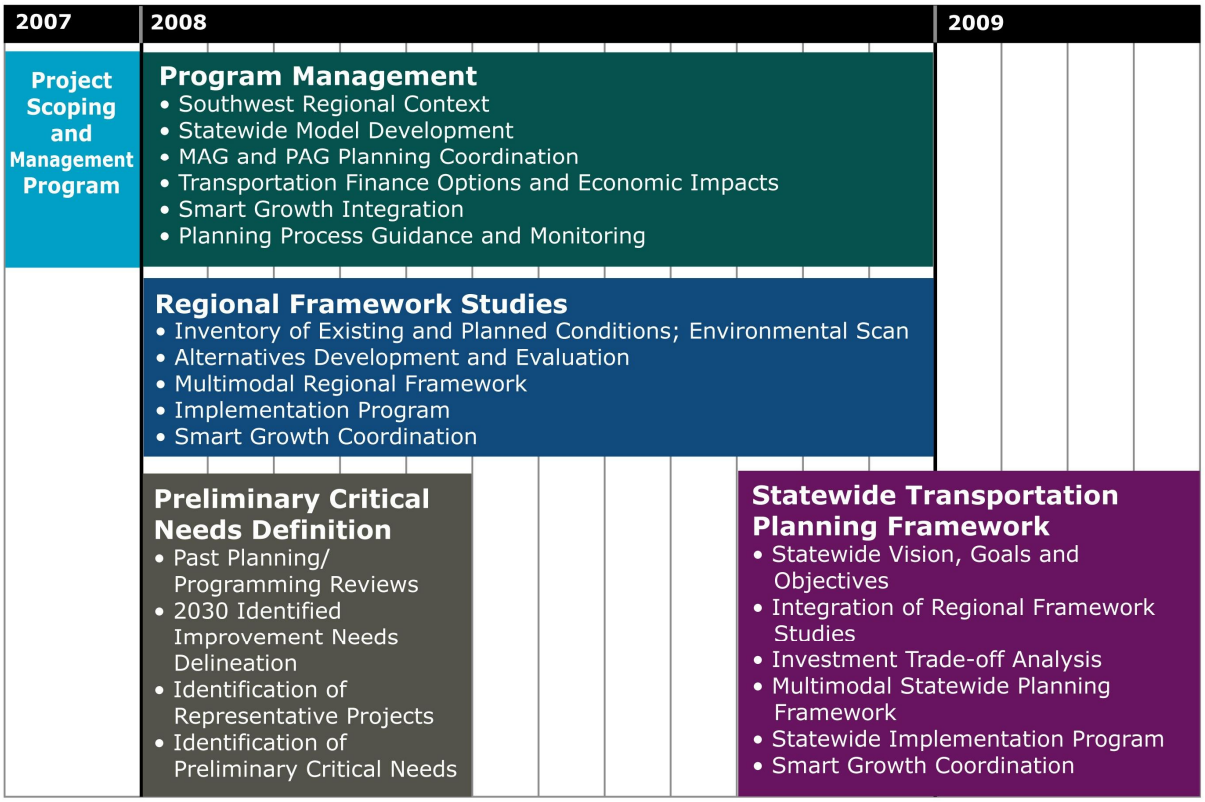
In the spring of 2007, Arizona's Councils of Governments (COGs[1]) and Metropolitan Planning Organizations (MPOs[1]), in cooperation with the Arizona Department of Transportation (ADOT), launched an ambitious, long-range statewide planning process known as "Building a Quality Arizona" or bqAZ. The initial Statewide Intrastate Mobility Reconnaissance Study, which ended in early 2008, found that bqAZ needed to proceed with more detailed planning to identify and address the state's multimodal[2] transportation needs through the year 2050.

Working in collaboration with regional transportation planning entities, transit organizations, tribal governments, land management agencies, conservation groups, business and community leaders, and the Governor's Growth Cabinet, ADOT and local/regional leaders from across the state embarked on development of a Statewide Transportation Planning Framework that formulates, evaluates and prioritizes multimodal transportation improvements through a comprehensive planning process and integrates them with land use, community and economic development planning strategies.

The effort is being facilitated by ADOT's Transportation Planning Division (ADOT-TPD) and Communication and Community Partnerships Division (ADOT-CCP). Each of these divisions has retained a Management Consultant to act as its staff during the process.

As Figure 1 illustrates, the framework process will involve the integration of several components into a Statewide Transportation Planning Framework for the years 2030 and 2050.

Figure 1: Statewide Planning Framework Generalized Work Program



The most important initial elements of the Work Program are the Regional Framework Studies and the Preliminary Critical Needs Definition. The guiding principles of the framework planning effort, as directed by the Governor, are as follows:

- Achieving Multimodal Balance (e.g. an appropriate balance among modes of transportation)
- Supporting Smart Growth and Sustainable Land Use
- Tribal Community Involvement
- Supporting Economic Development and Business Community Involvement
- Environmental and Conservation Community Involvement
- Statewide Collaboration with COGs, MPOs and Tribal governments

The *Preliminary Critical Needs Definition* is an evolving process, and is by no means a final "shopping list" for the state. Instead, its purpose is to identify the immediate and short-term needs (2030) of transportation systems throughout the state, and to help ADOT and the Governor's Office better understand the magnitude of the transportation needs that cannot be met with currently available funding.

In the fall of 2008, integration of the Regional Framework Studies will begin, which, in coordination with transportation planning and programming efforts from bordering states and Sonora, Mexico, will comprise the Statewide Transportation Planning Framework.

[1]MPOs are responsible for coordination of regional transportation planning in the state's five designated metropolitan areas; in and around Maricopa County, Pima County, Flagstaff, Prescott and Yuma. The four COGs play a similar role in the rest of Arizona. The COGs are the Central Arizona Association of Governments (CAAG), Northern Arizona Council of Governments (NACOG), SouthEastern Arizona Governments Organization (SEAGO), and Western Arizona Council of Governments (WACOG). The MPOs are the Maricopa Association of Governments (MAG), Pima Association of Governments (PAG), Flagstaff MPO (FMPO), Central Yavapai MPO (CYMPO), and Yuma MPO (YMPO).

[2]Multimodal refers to all methods or modes of transportation, including highways, public transportation, truck and rail freight, bicycling, and walking.

Critical Needs Observations and Transportation Policy Implications

Based on the process described in the remainder of this document, several important observations were made and potential policy directions identified. These observations and policy direction options fully recognize that, for the Statewide Transportation Planning Framework to ultimately be successful in terms of implementation, it must move forward within an environment of context sensitive planning and design, oriented to achieving the principles of Smart Growth and long-term sustainability. These include such critical, integrated land use/transportation strategies as:

- Developing interconnected, integrated multimodal transportation systems both on a statewide basis and within the regions.
- Planning responsible urban growth patterns that have a strong jobs-to-housing balance, a hierarchy of mixed use activity centers, and a focus on creating quality, multimodal communities made up of compact neighborhoods that embody a sense of place.
- Stimulating infill development within existing urban areas to utilize vacant land or redevelopment sites that are currently served with existing infrastructure, are integrated with their surrounding neighborhoods, and provide a mix of activities that can thrive with multimodal connectivity to their surroundings.
- Facilitating public policy debate and decisions on transportation, Smart Growth, reduction of greenhouse gas emissions, improved air quality and energy independence, with an emphasis on the interrelated nature of these factors.

The following observations and potential policy directions should be considered in carrying out project implementation to address the Preliminary Critical Needs.

- Regional Framework Studies and Preliminary Critical Needs Definition Process Differences

  While the Preliminary Critical Needs Definition process resulted in a "laundry list" of needed projects across the state, this list is by no means all-inclusive, making it imperative for the Regional Framework Studies to continue through their December 2008 deadline, for incorporation in the overall Statewide Planning Framework in spring 2009. *The Regional Framework Studies are the first of their kind in Arizona, and go far beyond past conventional transportation planning by:*

  - Looking out to a long-term (2050) vision of transportation needs.
  - Integrating land use, economic development and transportation decision-making in a coherent manner to achieve Smart Growth, quality of life and economic sustainability.
  - Elevating the importance of high capacity transit, including rail systems, with the objective of fulfilling regional travel demand by a mix of modes.
  - Including comprehensive public outreach efforts that provide extensive public information, community education and a variety of engagement opportunities on a subregional basis throughout the state.

  The Regional Framework Studies will not only be integrated into the Statewide Transportation Planning Framework, but will ultimately contribute to an update of the State Transportation Plan.

The Preliminary Critical Needs Definition process was not designed to develop a short-term statewide transportation plan; instead, its intent is to identify the 2030 transportation package of obvious needs as a first step toward addressing the ultimate multimodal transportation framework that Arizona will need by 2050 to support a responsible pattern of community and economic development throughout the state. Strategic investment in various modes of transportation can encourage more efficient land development patterns and enhance mobility and freight capacity, without taking on inefficient transportation costs. The early identification of Preliminary Critical Needs will allow expeditious implementation of prioritized, shorter-term improvements.

- Multimodal Balance for Improved Livability

  The Public Transit/Rail improvements identified in this document focus on providing longer-distance commuter service in the vicinity of major metropolitan areas, intercity connectivity between those areas, and resources to expand or initiate rural and tribal transit, rideshare and vanpool programs statewide.

  With a recently approved sales tax extension in Maricopa County (2004) and a new sales tax in Pima County (2005) to fund multimodal transportation improvements, the critical needs tend to emphasize expanding transit systems (fixed route bus, bus rapid transit [BRT], light rail/streetcar) and adding higher capacity, commuter-oriented facilities (commuter rail, expanded BRT services). These metropolitan areas are part of the Sun Corridor Megapolitan, a rapidly growing area of increased urbanization extending from central Yavapai County through Maricopa and Pinal counties to Tucson, and possibly beyond. As urban growth accelerates in Pinal County as an extension of both the Phoenix and Tucson Metropolitan Areas, the long-range concept of implementing higher-speed, intercity rail between Phoenix and Tucson appears to be more feasible, and could potentially operate compatibly with peak-period-oriented commuter rail service, using much of the same infrastructure. Such improvements will reinforce current local and regional investments in Maricopa and Pima Counties, and will ensure that our major city pairs continue to enjoy the synergies that are critical to our state's economic future. A related benefit will be the opportunity to join forces with the major freight railroads on capital projects to benefit both freight operations and intercity personal mobility.

  Expanding rural and tribal transit services is a high priority statewide; the recently completed Rural Transit Needs Feasibility Study indicated that only 18 percent of needs are currently being met. The service expansion is intended to take a variety of forms and to dramatically enhance existing services or initiate new service where none exists today. This will include expanding transit connector programs, like that currently operating between Yuma and Wellton, as well as initiating new services between the three major Mohave County cities and between activity centers in Graham and Greenlee counties. Additional programs include a statewide rideshare program, a statewide vanpool program, and enhanced elderly and disabled transportation services. Again, the proposed improvements will reinforce investments made by local governments.

- High Capacity Roadway Corridor Development for Economic Sustainability

  Arizonans are paying for their transportation system not only through monetary taxes, but also through the "time tax" imposed by delay and congestion. The improvements identified for the highest capacity roadways within the *Representative Projects and Programs* and the

Preliminary Critical Needs, including Interstate highways and other freeways, can clearly provide a wide variety of economic benefits to the state of Arizona, including enhanced mobility and safety. Widening existing Interstate highways; building new corridors; improving interchange functioning; building new, properly spaced interchanges; and efficiently managing traffic flow will provide regional connectivity between activity centers, such as Phoenix, Tucson, Flagstaff, Prescott, Yuma and the Tri-City area of Mohave County, thus reinforcing growth within those economic hubs and along the Sun Corridor Megapolitan. In addition, such improvements strongly support transcontinental freight movement through the Southwest on corridors such as the Interstate highways, and enhance and concentrate economic development opportunities along these routes (and at their intersections with other modes of travel, such as railroads and airports). These opportunities include intermodal transshipment, warehousing/distribution and new activity center development.

- State Highway System Improvements for Connectivity Enhancement

  The improvements identified for other state highways within the *Representative Projects and Programs* and the *Preliminary Critical Needs* could also provide a variety of economic benefits to the state of Arizona, including enhanced mobility, safety and livability along the corridors. Widening existing state highways, improving existing intersections and constructing new intersections, adding safety and mobility enhancements (e.g. intersection lighting, passing lanes, climbing lanes), and managing traffic flow all support intercity connectivity and economic development. Such actions also reinforce intensification of existing activity centers and improvement of the quality of life.

- Available Resources for Statewide Transportation Needs

  With the recent run-up in highway construction costs, the cost to maintain and preserve the state's highways has gone up considerably-potentially 40-50 percent over the last four to five years. However the amount of resources programmed for maintenance and preservation has increased very little, meaning that every year ADOT spends less and less (in real dollars) for this critical function. ADOT must invest in system preservation meaning less funding will be available for new projects. ADOT projects that by 2015 its existing funding sources will be solely dedicated to system preservation.

- Flexibility to Address Local Transportation Needs

  The preliminary cost estimates developed in this document illustrate that local needs could greatly exceed anticipated funding from the Highway User Revenue Fund (HURF) and other existing sources. Even if additional funding can be obtained, it will be necessary to make difficult choices between critical improvements off the State Highway System. As a result it is recommended that a percentage of the proceeds from any new statewide, sustainable transportation finance mechanism should be directed to the individual cities, towns and counties—enabling them to prioritize their transportation needs (including pedestrian, bicycle, bus transit, roadway, bridges, traffic system management, etc.) and spend the additional funds at their discretion, within reasonable limitations. Funds could be allocated using existing formulas such as the HURF formula, or in proportion to population, existing roadway miles, number of registered vehicles, or some combination of these, to fairly distribute resources to local jurisdictions.

- Increased Mobility and Connectivity for Tribal Governments

  The improvements identified to enhance tribal mobility within the *Representative Projects and Programs* and the *Preliminary Critical Needs* could clearly provide a wide variety of economic benefits to tribal governments, as well as enhanced mobility, greater safety and improved livability along transportation corridors. Widening existing Interstates and state highways, improving existing intersections and interchanges, constructing new intersections and interchanges, and adding safety and mobility enhancements (such as intersection lighting, passing lanes and climbing lanes), will all support connectivity between activity centers, enhance economic development opportunities within and between them, and improve quality of life through enhanced mobility and safety. Similarly, new or improved transit services within tribal communities can provide mobility choices and convenience to access shopping, educational facilities and community services.

- Enhanced Environmental Mitigation

  The Preliminary Critical Needs Definition process, conducted jointly with the COGs, MPOs, tribal governments and ADOT staff, identified the need to construct or improve major transportation facilities that traverse areas of Arizona with unique environmental characteristics. Any transportation program must take special care to preserve and protect these areas, both for the sake of their plant and animal inhabitants, and as part of the state's natural heritage for the benefit of future generations. In addition, the Arizona economy is highly dependent on tourism, which in turn depends on the spectacular and remarkably diverse natural environment.

  It is therefore recommended that the formulation of any sustainable transportation finance mechanism to address critical transportation needs include a fixed amount or percentage of funds to effect enhanced environmental mitigations. This effort would be in addition to existing requirements for avoidance and mitigation under the National Environmental Policy Act (NEPA) and applicable state laws. The program would focus on (a) ensuring connectivity of wildlife movement (e.g., adequate wildlife crossings of new and improved facilities), (b) biological habitat preservation, particularly in areas containing designated Threatened, Endangered or Sensitive Species, and (c) preservation of visual and scenic resources for both users and neighbors of transportation facilities. It would go beyond traditional mitigation measures associated with federal-aid highway projects, helping to attain the objectives of the Multi-agency Wildlife Linkages Project and the Natural Infrastructure Geographic Information Systems (GIS) Project sponsored by the Nature Conservancy. It is the intent of the Statewide Transportation Planning Framework program to work jointly with conservation groups which are building coalitions to advocate for improved Smart Growth policies in Arizona.

  The TransNet Environmental Mitigation Program in San Diego County, California, offers an example of how such a program might work. In 1987, voters approved a half-cent sales tax (later extended to 2048) to fund a variety of transportation projects throughout the San Diego region. The TransNet extension created an environmental mitigation program (EMP) that goes beyond traditional mitigation. The EMP includes not only an allocation for the estimated direct costs to mitigate upland and wetland habitat impacts, but also additional funding for habitat acquisition, management and monitoring. Of course the details of a similar program in Arizona would differ; for example, Arizona has no coast and proportionately fewer wetlands.

- Leveraging Transportation Enhancements for Transit Oriented Development and Walkable/Bikeable Communities

  ADOT currently administers a federally-funded program known as Transportation Enhancement, designed to improve the quality of the built environment associated with transportation projects, and to help projects fit into the context of the communities they serve. Approximately $15 million per year is currently available for Arizona, with grants awarded through a competitive process. In the most recent round of awards, the State Transportation Board funded twenty-four projects: six on the State Highway System under ADOT sponsorship, and eighteen sponsored by local governments. The successful projects included sidewalks, multi-use paths, streetscape and scenic beautification projects, historic street restoration, and bike route improvements, among others.

  In accordance with the guiding principles of the Statewide Transportation Planning Framework program, it is recommended that a designated share or percentage of new transportation funding be earmarked to expand and build on the successful Transportation Enhancement Program, which consistently attracts far more applications than can be funded through the state's federal allocation. Funds could be divided by formula between ADOT, the COGs and MPOs, and local projects. Rather than selecting local projects through statewide competition, each regional planning agency could receive its own annual allocation for use on any projects that meet the eligibility criteria.

  It is envisioned that transportation enhancements could complement a variety of the Statewide Transportation Planning Framework's guiding principles, such as *multimodal balance* through rail station location to stimulate surrounding community development with appropriate modal connectivity (transit oriented development or TOD), *Smart Growth and sustainable land use* through the development of well planned, compact communities around a series of high density activity centers linked to their surrounding neighborhoods through an interconnected circulation system, and *economic sustainability* through the revitalization of existing downtown areas or the development of new mixed use activity areas that become the focal points for pedestrian-friendly urban areas with a sense of place.

- Operations and Maintenance for System Sustainability and Safety

  Recent high-profile transport infrastructure failures have raised national awareness of the need for increased diligence toward maintenance and repair. The maintenance needs of safety, traffic control and paved roadway surfaces should have the highest funding priorities. State spending on preventive maintenance was strongly highlighted during the Management Consultant's site visits to COGs and MPOs. According to the State Auditor General's 2007 Report 07-03, maintenance funding has increased (by 56.6 percent between 1997 and 2006), but so have maintenance costs and demands. To ensure that statewide maintenance needs are addressed, a methodology to allocate monies to ADOT Districts based on statewide needs and priorities could be developed, similar to how roadway construction monies are allocated. Future allocations could be based on maintenance feature condition ratings through the existing Performance Control System (PeCos) or a Level of Service Management System.

  In July 2007, during the bqAZ Statewide Intrastate Mobility Reconnaissance Study, a meeting on Statewide Strategies for Improving Transportation and Operations and Management was held. The meeting included the Federal Highway Administration (FHWA), ADOT, Federal Motor Carrier Safety Administration, MAG and PAG. This meeting generated many improvement strategies, including:

- Expanding freeway service patrol statewide
- Improving the 511 system
- Improving statewide communications between ADOT and the Department of Public Safety (DPS)
- Implementing truck climbing lanes
- Providing additional full-time employees to support winter road maintenance and Intelligent Transportation Systems (ITS) field equipment

A number of the maintenance strategies discussed could also help alleviate congestion on the State Highway System. The Management Consultant recommends continuing the dialogue of this group and expanding it outside the metropolitan areas.

- Potential Public Private Partnership (PPP) Opportunities to Support Urban Growth

In compiling this Preliminary Critical Needs Definition document, it became apparent that a number of potential new high capacity roadway corridors could be excellent candidates for a PPP, including such projects as the North-South Freeway corridor through Pinal County from US 60 on the north to I-10 on the south; the Val Vista Expressway/Freeway corridor through Pinal and Maricopa counties from the future SR 303L extension on the west to the future North-South Freeway corridor on the east; SR 303L south of SR 801 to I-8 in Maricopa County; the Hassayampa Freeway corridor from US 93 to the future SR 303L extension in Maricopa County; and the New River Freeway from SR 303L to I-17, as well as the proposed intercity rail within the Sun Megapolitan Corridor and commuter rail in the Phoenix and Tucson Metropolitan Areas. Each of these corridors:

- Has logical termini at other existing or future high capacity corridors.
- Serves the anticipated rapid urban growth within the Sun Corridor Megapolitan.
- Traverses large future master planned communities or mixed use developments that view such transportation investments as major assets and may be willing to dedicate right-of-way.
- Has parallel routes for users not willing to pay for the use of such a privatized corridor.

As a result, in anticipation of the potential to implement a statewide sustainable transportation finance mechanism, it may be appropriate to consider establishing an inducement fund to stimulate development of such corridors. Currently, three development/property owner groups have emerged along these corridors to explore the opportunity of advancing corridor development through PPPs. In addition, ADOT, FHWA, MAG and Pinal County have begun discussions on initiating corridor studies in conjunction with an Environmental Impact Statement (EIS) process, in order to establish corridor locations as early as possible, potentially enabling right-of-way dedications from adjacent developers and property owners.

Preliminary Critical Needs Definition Process

The initial purpose of the Preliminary Critical Needs Definition was to identify the immediate and short-term needs (2030) of transportation systems throughout the state, in order to help ADOT

and the Governor's Office better understand the magnitude of the transportation needs that cannot be met with currently available funding. Three tools were developed to achieve this purpose:

1. Submittal of a Preliminary Critical Needs List, jointly from each COG, each MPO, and their respective ADOT District Engineers. In conducting this effort, it became apparent that the various COGs, MPOs, District Engineers and tribal governments interpreted what critical needs were in a different manner and, as a result, what was submitted was really an identification of 2030 transportation improvement needs, or the *2030 Identified Improvement Needs Delineation*.

2. Identification by the COGs, MPOs and their respective District Engineers of *Representative Projects and Programs* that best illustrate their critical transportation needs.

3. Identification of *Preliminary Critical Needs*, in relation to the Statewide Transportation Planning Framework Guiding Principles and to address the purpose of the 2030 immediate and short-term needs.

2030 Identified Improvement Needs Delineation

As an initial methodological step, the lists sorted by COGs and MPOs were divided into three categories: High Capacity Roadways (Interstate highways, other freeways and other state highways), Public Transit/Rail, and Principal Arterials/Local Roads. The first category is self-explanatory. The second represents the highest classification of roadways used by cities, counties and other local jurisdictions. This category is intended to capture the most important regional and intercity routes that are not part of the State Highway System. Public Transit/Rail is discussed further in the next section.

Data collection began with a letter from ADOT-TPD to the District Engineers, asking them to identify critically needed improvements to the State Highway System. They were asked to provide a brief description of each project, along with information to help identify the location (e.g., length and milepost boundaries), the estimated cost, whether the project is on an existing facility or involves construction of a new one, and who helped bring the need to ADOT's attention. Each District Engineer was given a blank spreadsheet and asked to share it with staff of the COGs and MPOs in the district. COGs and MPOs were responsible for adding projects on Principal Arterials outside the state system. Maps of the COG and MPO locations, as well as ADOT Districts, are illustrated in Figures 2 and 3.

Each recipient was asked to complete the spreadsheet and return it to ADOT-TPD and its Management Consultant by January 31, 2008. Spreadsheets were returned separately by the ADOT districts, the COGs and the MPOs throughout the state. Several COGs and MPOs also passed along projects submitted to them by their member jurisdictions (cities, towns and counties). At this stage the spreadsheets contained "laundry lists" of various projects ranging from street maintenance to bridge replacement to passing lanes to new routes. Although some of the spreadsheets were filled out more completely than others, all respondents successfully followed the same basic format. This facilitated subsequent compilation of a voluminous amount of data.

Figure 2: Arizona COG and MPO Locations

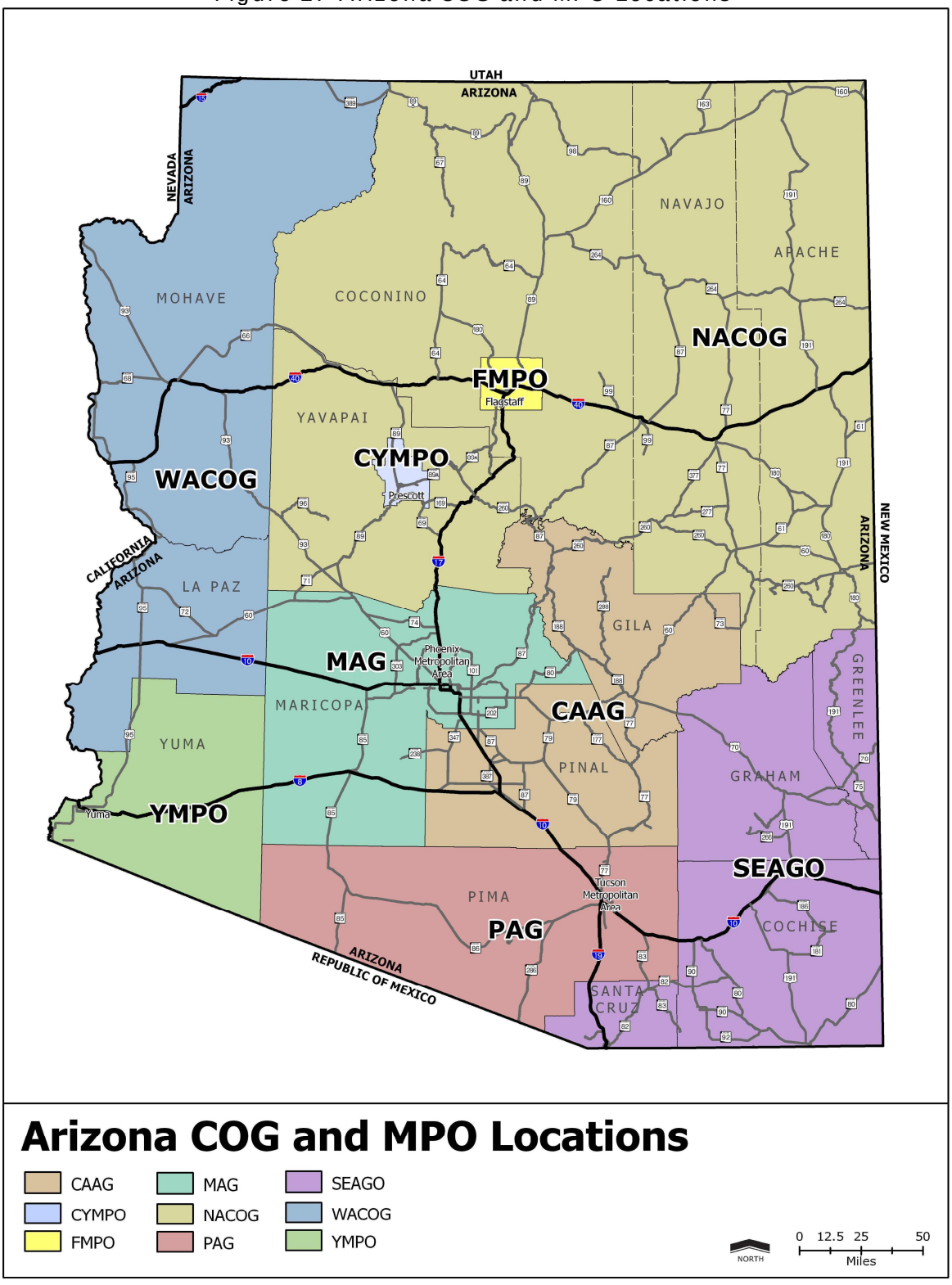
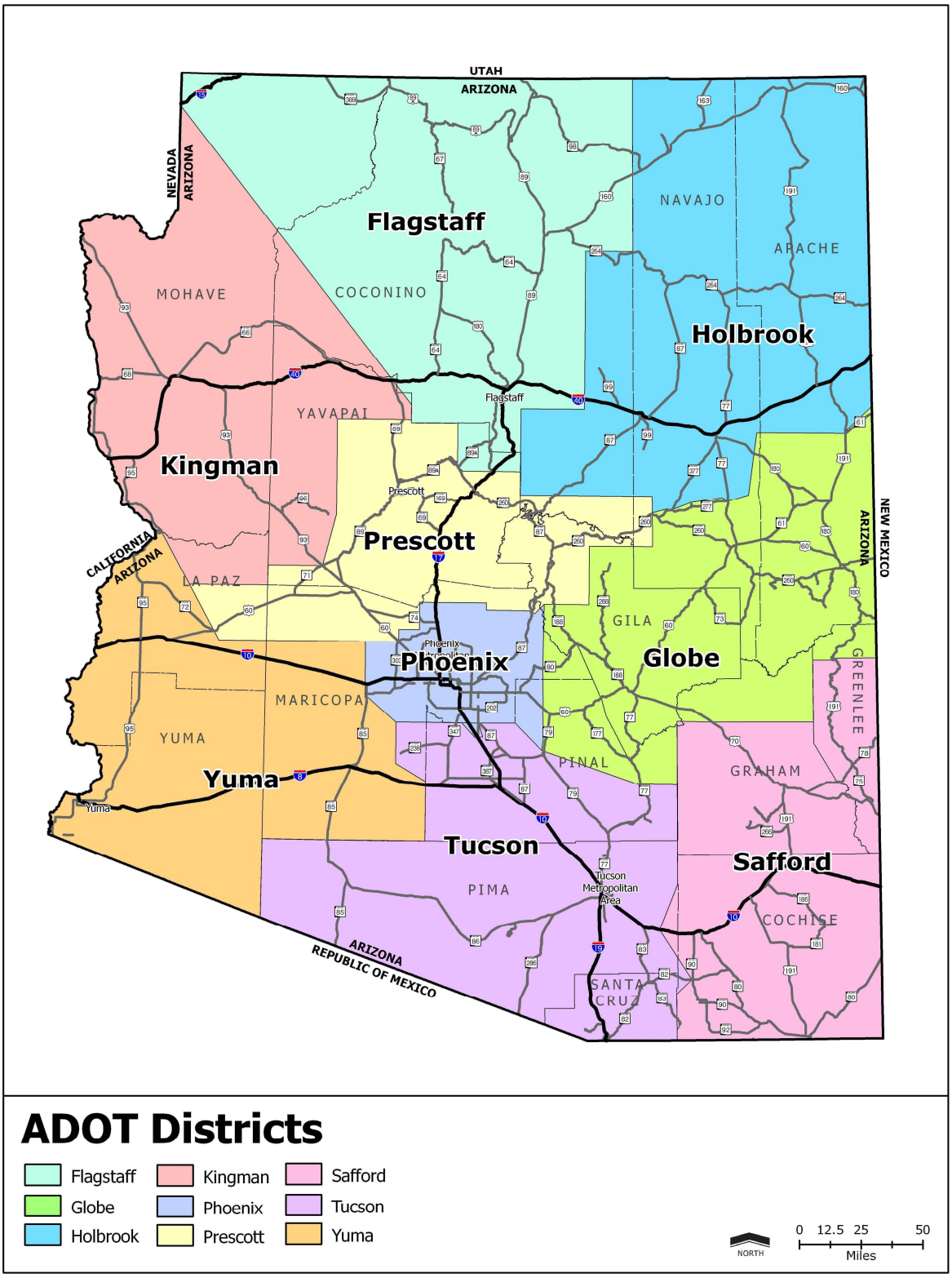


Figure 3: ADOT District Locations



After consulting with ADOT, MAG decided to use a slightly different procedure from the other COGs and MPOs. Working in consultation with ADOT's Valley Freeway Management Consultant, a series of critical transportation needs for the Interstate highways, state highways and other freeways was identified for the MAG region. MAG did not submit a complete list of localized critical needs, but did work with the Management Consultant both to identify a set of representative projects and to apply "rules of thumb" to estimate the total cost of the needs throughout Maricopa County.

Identification of Public Transit/Rail Programs and Projects

In January 2007, Governor Napolitano issued Executive Order 2007-02, "Expanding Arizona's Transportation Options." Recognizing that the state's transportation infrastructure was failing to keep pace with the fastest population growth in the nation, the Governor directed ADOT "to provide, within the next 90 days, a detailed list of options for mass transit, commuter rail and/or light rail to serve and connect as efficiently as possible those Arizona communities for which such options would be cost-effective. The report should include preliminary estimates of the cost of each option; an assessment of whether and how the private sector could be encouraged to offer or assist with each option, and, to the extent public money is required, recommendations regarding how to finance each option."

The ADOT Public Transportation Division (ADOT-PTD) process began with a review of existing reports and formation of an Executive Order Working Group, consisting of representatives of COGs, MPOs, and transit agencies/providers throughout the state. An extensive outreach effort included individual meetings with stakeholders, interviews, and a tribal forum. ADOT-PTD encouraged public input through eight public meetings and an on-line Rural Transit Needs Survey.

In addition, ADOT-PTD prepared a series of "control sheets" that describe proposed programs and projects from COGs, MPOs, transit agencies statewide, and ADOT-PTD staff. Each sheet also contains capital and operating cost estimates. The documented needs include commuter rail, light rail, the Sky Harbor Airport People Mover, bus rapid transit, express bus, local bus, intercity transit, rural transit, fixed facilities (such as park-and-ride lots) and services for populations with special needs. Owing to the thoroughness and current nature of the control sheets, they were used as the foundation for identifying transit and rail critical needs. Each COG and MPO was given an opportunity to provide updated information or additional transit improvements, and a few did so.

Identification of Tribal Identified Improvements

Because of the unique status of the tribal governments as sovereign nations, the process for obtaining information on their critical transportation needs was somewhat different from the one used with the COGs and MPOs. The ADOT-TPD Tribal Coordinator led the effort to develop this information, after the ADOT Director initiated the process with a letter to the chief executive officer of each tribe requesting his or her assistance.

Identification of tribally identified improvements was based partially on three Governor's Tribal Summits held in March 2004, September 2006 and February 2007. The first Summit focused specifically on transportation, while the others dealt more generally with growth and infrastructure issues. At these Summits, each tribal leader and representative was encouraged to bring transportation concerns to the Governor, both in person and through position papers. On December 21, 2007, ADOT submitted to the Governor a Report on Tribal Transportation Issues and Needs, based on input received at all three Summits. The report became one of the most

important sources on identified tribal improvements, although ADOT made separate efforts to obtain information from the six tribal governments that did not attend the Summits.

Another source of identified tribal improvements was the Indian Reservation Roads-Transportation Improvement Programs (IRR-TIP) developed by those tribal governments that have roads operated by the Bureau of Indian Affairs (BIA). One limitation of this data is that most of the projects are programmed for fiscal years 2008 and 2009. Not all of the tribes submitted an IRR-TIP to ADOT; several of the smaller ones identified no projects, while others report to the New Mexico or Utah Departments of Transportation.

A third source of information on tribally identified improvements was the ADOT District Engineers, who provided information pertaining to necessary transportation improvements on the State Highway System within tribal lands. These proposed projects were submitted as part of the complete list of state highway projects within each district.

The Transportation Working Group of the Intertribal Council of Arizona was advised that information from the Tribal Summits and the IRR-TIPs would be used as the basis for critical transportation needs of tribal governments. The Governor's Policy Advisor for Tribal Affairs also presented the information at two round table discussions with tribal leaders.

Summary of 2030 Identified Improvement Needs Delineation Cost

Upon the completion of the field visits and receipt of supplemental information from COGs, MPOs, District Engineers and tribal governments through March 21, 2008, ADOT-TPD and Management Consultant staff totaled the *2030 Identified Improvement Needs Delineation* project costs to provide a range of total costs by COG/MPO and by category. The total cost of the transportation improvements proposed as part of the *2030 Identified Improvement Needs Delineation* is approximately $162.3 B. A summary of these costs by category is listed below:

- High Capacity Roadways: $108.5 B
- Public Transit/Rail: $24.7 B
- Principal Arterials/Local Roads: $29.1 B

Costs for High Capacity Roadways and Public Transit/Rail include a development cost (20 percent) to cover the cost of completing planning and design, environmental analysis and compliance documents, right-of-way acquisition, and utility relocations. In addition, the High Capacity Roadways category includes costs for general maintenance (5 percent) and pavement preservation for years 15 plus (1.25 percent). The Public Transit/Rail category also includes estimated cost for operations and general maintenance. The Principal Arterials/Local Roads category is not as comprehensive, as there were varying degrees of response from local jurisdictions across the state.

Representative Projects and Programs

After a first review of the *2030 Identified Improvement Needs Delineation* submittals, ADOT-TPD and Management Consultant staff scheduled a separate field visit with each COG and MPO (and the appropriate District Engineers) to (a) finalize the list of identified pre-2030 improvements and (b) identify a list of representative projects in each of the three categories that best illustrate the critical transportation needs of the region. Finalization of the list focused on projects that needed more detail, or for which the submitted information was incomplete. In every case, however, the

COG, MPO and ADOT District representatives made the final decision on which improvements to include. Each COG or MPO was also asked to select at least one representative project in each of the three categories. COGs and MPOs were also encouraged to select representative transit improvements critical to their region from the list developed in response to Executive Order 2007-02.

This representative project list was developed to illustrate what types of transportation and transit needs might be included in the categories of improvements across the state by 2030: High Capacity Roadways, Public Transit/Rail, and Principal Arterials/Local Roads. These projects were provided by the COGs, MPOs, tribes and ADOT, and are organized by COG and MPO in Table 1.

Table 1: Representative Projects and Programs

COG/ MPO	High Capacity Roadways (Interstate Highways, state highways and other freeways)	Public Transit/Rail	Principal Arterials/ Local Roads
CAAG	• North-South Freeway • US 60 Corridor widening to 4 lanes, TI changes, bridges and passing lanes • SR 347 widening and reconstruction, including Maricopa Bypass • US 70 widening to 4 lanes, US 60 to Safford • SR 77 widening and passing lanes • SR 79 Widening • Montgomery Road construction as a high capacity corridor • Val Vista Road construction as a high capacity corridor	• Phoenix-Tucson Intercity Rail implementation • Transit Connectors expansion	• Pinal County Regional Significant Routes
CYMPO	• Great Western Extension • Chino Extension • SR 169 widening, I-17 to SR 69 • Fain Rd Connector, SR 169 to SR 89 • Fain Rd widening and new bridges	• Enhanced Voucher Program • Statewide Vanpool Program	• Sundog Connector • Santa Fe Loop • Outer Loop Rd • Perkinsville Rd
FMPO	• I-40 widening across Northern Arizona • I-17 widening, Flagstaff to Phoenix • US 180 widening from MP 215 to 220 • B 40 West Flagstaff reconstruction	• Statewide Vanpool Program • Mountain Links Expansion • Northern Arizona Rural Urban Connector Service	• Lone Tree Road corridor extension and reconstruction • Milton Road reconstruction and BNSF Railroad bridge replacement • JW Powell Blvd/Fourth Street/Airport connection development

COG/ MPO	High Capacity Roadways (Interstate Highways, state highways and other freeways)	Public Transit/Rail	Principal Arterials/ Local Roads
MAG	• I-10 Collector-Distributor roads • I-17 widening, I-10 to SR 101L • I-17 Durango Curve reconstruction • SR 801 construction, SR 303L to SR 85 • SR 85 reconstruction to freeway standards, I-10 to I-8 • Hassayampa Freeway construction, I-10 to US 93 to SR 303L • SR 74 reconstruction to freeway standards, I-17 to Hassayampa Freeway • White Tank Freeway construction, US 60 to Hassayampa Freeway • Grand Avenue Project Improvements • SR 101 HOV and General Purpose Lane Project Acceleration • SR 303L Local Access Enhancements and Acceleration • SR 802 Acceleration • SR 303L construction, SR 801 to I-8	• Commuter Rail system development • Phoenix-Tucson Intercity Rail implementation • Double Freeway Express/BRT	• Sonoran Parkway construction, Phoenix • Meridian Road widening, Mesa and Queen Creek • Turner Parkway construction, Buckeye • Jackrabbit Trail, Buckeye and Surprise • Old US 80 bridge at Agua Fria River • MCDOT ITS Smart Corridors • Agua Fria River Crossings (West Valley Communities) • UPRR and BNSF Grade Separators • Regional Parkway System Corridors in Hassayampa and Hidden Framework Studies
NACOG	• I-17 widening, Flagstaff to Phoenix • I-40 widening across Northern Arizona • US 89 widening, Flagstaff to Page • US 160 widening to Four Corners area • SR 260 widening, Heber to Show Low • SR 77 widening, Show Low to Holbrook • SR 64 widening • US 191, drainage issues, lack of passing opportunities, and maintenance problem resolutions • SR 264, drainage issues, lack of passing opportunities, and maintenance problem resolutions	• Operating Capital State Match for Section 5310 • Statewide vanpool expansion • Northern Arizona Rural Urban Connector Service	• CR 3144 reconstruction, Apache County • 24th West, St. Johns • Grand Canyon Blvd extension, Williams • Lake Mary Rd reconstruction • Southside alternative route, Holbrook • Obed Rd bridge reconstruction, Holbrook to Joseph City • Broadway extension, Clarkdale • Willard St reconstruction, Cottonwood • Scott Ranch Rd reconstruction, Show Low • Seventh St extension/new bridge, Snowflake • Sedona alternative access route • New corridor, Northern Navajo Rd to US 89 • Lone Pine Dam Rd construction, Navajo County • Penroad Rd reconstruction, Show Low to Pinetop • Alternatives to rail crossing, Winslow
PAG	• I-10/I-19 widening • SR 210 extension of Barraza Parkway, new TI • SR 86 widening • SR 77 widening • SR 85 widening to 4 lanes, Lukeville to Ajo	• Commuter Rail system development • Regional Bus Rapid Transit system development • Tucson-Phoenix Intercity Rail implementation	• Houghton Road reconstruction • Broadway Blvd reconstruction • Airport area roadway improvements • Twin Peaks, Aio Way widening • Sahuarita Rd reconstruction

COG/ MPO	High Capacity Roadways (Interstate Highways, state highways and other freeways)	Public Transit/Rail	Principal Arterials/ Local Roads
SEAGO	• I-10 widening to 6 lanes, Cochise County • SR 90 widening to 4 lanes, Benson to Sierra Vista • US 191 reconstruction 4 lanes divided, I-10 to US 70 • US 70 widening to 4 lanes, Globe to Safford	• Transit connector expansion • Graham/Greenlee/Gila/Pinal Counties Rural Bus Service • Bisbee bus expansion	• Local streets operations and maintenance • Grand Ave railroad viaduct, Nogales • Palo Pratco, Santa Cruz River bridge • Extend SR 90 to Airport, Benson • Kings Highway construction, new port of entry, Douglas • Paving of International Border Rd, Douglas • Incorporate Naco Rd into state system • Improvements to border, Bisbee • Buffalo Soldier Trail construction, Sierra Vista • First St reconstruction, 20th Ave to First Ave, Safford • First St extension, 20th Ave to Reay Lane, Thatcher • Repave Duquesne Ave, Patagonia
WACOG	• I-10 widening throughout Yuma District • I-40 widening to 6 lanes, MP 44 to MP 74 • US 93, Wickenburg to I-40 • System interchange US 93 and I-40 reconstruction • SR 72 reconstruction to 40', MP 13 to MP 22 • SR 95 Western Passage of CANAMEX to serve deep water port, I-40 to I-8 • SR 66 widening, I-40 to Valle Vista • SR 95 realignment, I-40 to SR 68	• Tri-City connectors expansion • Vanpool programs partnering	• Diamond Bar Rd construction to Grand Canyon Skywalk, Hualapai Tribe • Buck & Doe Rd construction to Grand Canyon Skywalk, Hualapai Tribe • Crossing at Pearce Ferry • Grace Neal, airport and suburb access, Kingman • Second bridge construction in Bullhead City • Vanderslice, parallel route construction to SR 95 • Kingman Crossing traffic interchange construction, Kingman • Rattlesnake Wash traffic interchange, Kingman • London Bridge Rd reconstruction, Lake Havasu City
YMPO	• Western Passage CANAMEX Corridor (US 95) • I-8 improvements, state line to Telegraph Pass • SR 195 (ASH), I-8 to US 95	• Foothills YCAT Service initiation • San Luis YCAT Service initiation	• Controlled access loop/Yuma Expressway construction with TIs and I-8 and SR 195 • Expressway construction south from County 14/Ave D to San Luis Port-of-entry #2 • County 19th St construction

It should be noted that this process, conducted jointly with the COGs, MPOs, tribal governments and ADOT staff, identified the need to construct or improve major transportation facilities that traverse areas of Arizona with unique environmental characteristics. Any transportation program must take special care to preserve and protect these areas, both for the sake of their plant and animal inhabitants, and as part of the state's natural heritage for the benefit of future generations. The use of a Context Sensitive Solutions (CSS) process, such as was used to plan, design and construct the SR 179 improvements in the Sedona/Oak Creek area, is a model for working in such unique environments and addressing issues such as habitat preservation, wildlife linkages and scenic integrity.

This process also identified that if we are strategic about how we invest in transportation, we can encourage more efficient land development patterns, in terms of both new growth and revitalization. The integration of Smart Growth principles, such as those embodied in the *Flagstaff Area Regional Land Use and Transportation Plan*, can allow the development of a symbiotic relationship between land use and transportation, contribute to the character of the community, efficiently use public assets (such as state lands) through transportation enhancements, and integrate the qualities that make communities great places to live, work and play.

It is assumed that a portion of the proceeds of any new statewide sustainable transportation finance mechanism will be returned to the COGs, MPOs and tribal governments statewide for regional prioritization with local partners to fund principal arterial roadways and other local transportation improvements, as described earlier in the *Summary of Critical Needs Observations*.

Preliminary Critical Needs

After reviewing the large amount of data collected, there was an obvious need for a more refined definition of critical needs that included:

- Transportation safety needs
- Basic mobility, in the form of reasonably direct and reliable connections between origins and destinations
- Sufficient capacity to avoid:
  - Excessive travel time and out-of-pocket costs to travelers, shippers and carriers
  - Congestion-related environmental degradation
- Efficient access to significant population and activity centers
- Maintenance and preservation of federal, state and local investment in infrastructure
- Environmental justice, especially for people with limited access to private vehicles

Using the foundation developed through the *2030 Identified Improvement Needs Delineation* and the *Representative Projects and Programs*, the Preliminary Critical Needs program areas were developed.

Summary of 2030 Preliminary Critical Needs Program Areas and Costs

The total cost of the *2030 Preliminary Critical Needs* transportation improvements is $42.6 billion, broken down as follows:

■ Strategic Highway Projects	58%	$24.698 billion
■ Strategic Rail and Transit Projects and Programs	18%	$7.665 billion
■ Local Mobility Projects and Programs	20%	$8.517 billion
■ Transportation Enhancements and Walkable/Bikeable Communities	4%	$1.703 billion
TOTAL	100%	$42.583 billion

As identified on the previous page, three funds have been established to address unique, transportation-related needs:

- The Potential Public Private Partnership (PPP) Project Inducement Fund, embedded within the Strategic Highways and Strategic Rail and Transit Program elements, could provide resources to leverage private investment in the six corridors targeted for potential PPPs.
- The Transportation Enhancements and Walkable/Bikeable Communities Program provides resources to encourage TOD around rail transit stations, develop pedestrian and bicycle facilities, and address other regional/local transportation enhancement priorities.
- An Environmental Enhancement Fund has been built into the Strategic Highway Projects element to address critical habitat preservation and restoration, provide matching funds for local open space conservation priorities, and support transportation project mitigation.