DRAFT

MAG Regional Transit Framework

Executive Summary

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METRO

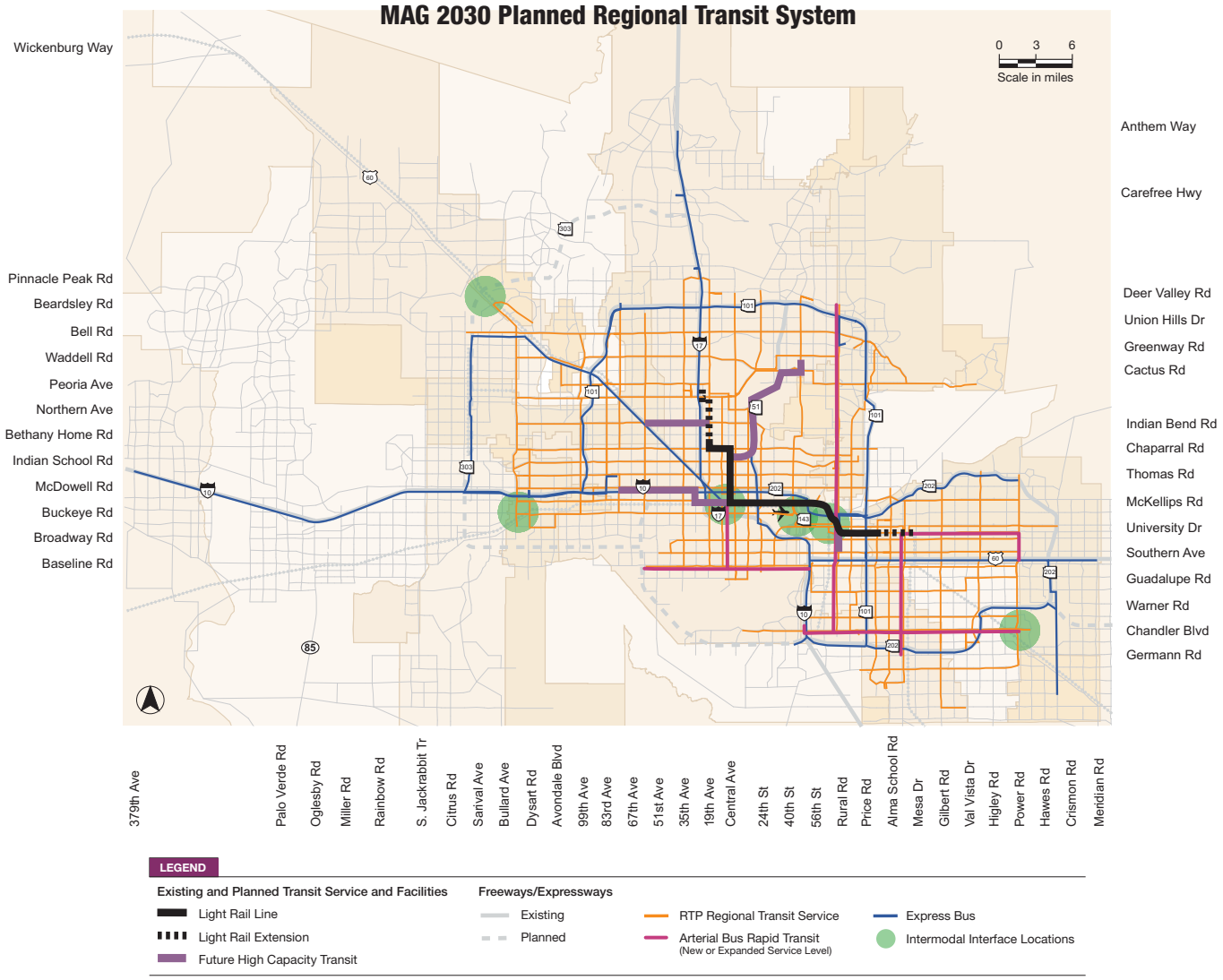
MARICOPA ASSOCIATION of GOVERNMENTS

Valley Metro
Smartmove

Project Background and Process

Nearly 700,000 new residents were added to Maricopa County between 2000 and 2006. The U.S. Census Bureau estimates the county's population to be approximately 3.8 million people today, but regional forecasts indicate that Maricopa County may be home to 6.1 million by 2030. Significant development is predicted on the edge of the existing urban area and beyond, where few or no transit services are currently planned. Despite a Regional Transportation Plan (RTP) — with transit funded by the same half-cent sales tax that pays for freeway expansion – and financial support from local communities, additional public transit funding will be required to keep up with growth. An approach embracing all modes of transportation, including public transit, is essential to address the region's growing transportation demand.

The MAG Regional Transit Framework identified and prioritized needs for regional transit improvements to supplement the existing RTP through 2030, with consideration for longer range transportation needs through 2050. The analysis of land use, socioeconomic (population and employment) conditions, existing and planned transit service, and infrastructure, along with input from transit riders and nonriders, enabled MAG to identify transit needs, deficiencies, opportunities, and constraints. Three scenarios for transit services and facilities were then developed to address future travel needs.



Review of Peer Regions

To understand how the transit system in the MAG region compares to others, six similar (peer) regions were reviewed. Peer regions were selected based on their location, size, transit system characteristics, land use patterns, and other factors. The six peer regions were: Atlanta, Dallas, Denver, Salt Lake City, San Diego and Seattle.

Population and Population Density

REGION	2006 UZA Population	2000 UZA Land Area	Population per Square Mile
Atlanta	4,051,000	1,963	2,064
Dallas	4,809,000	1,529	3,146
Denver	2,316,000	585	3,959
Salt Lake City	945,000	231	4,094
San Diego	2,722,000	782	3,479
Seattle	2,875,000	954	3,015
Average[1]	2,531,143	1,007	2,932
MAG Region	3,228,000	779	4,040

Source: National Transit Database
[1] Average does not include MAG Region

Population and Population Density

Total population and its density affect the performance of and need for public transportation. In comparing the urbanized area (UZA) of the peers, the MAG region ranks third (of seven) in population and second in population density.

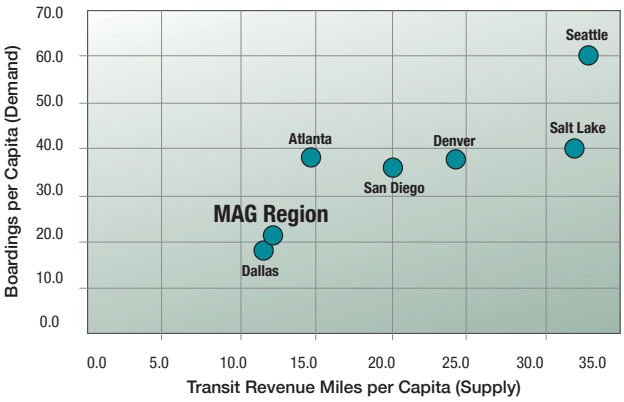
Peer Region Transit Services

All of the peer regions, including the MAG region, operate bus and vanpool service. Each operates light rail or (in Atlanta) heavy rail service. The primary difference between light and heavy rail is the number of people that they can carry, both are designed to operate frequent, all-day service. In addition to these modes, commuter rail is a service designed to have a limited number of stops over long distances, and to connect suburbs with busy activity centers during peak periods. Atlanta, Denver and the MAG region currently lack commuter rail service.

Transit Supply and Demand

Knowing how many people use transit, and how much transit service is available, is important for understanding the differences between regional transit systems. Transit supply is a measure of the number of miles operated by all transit modes (buses, trains, etc.) in a region. Transit use, or demand, is a measure of the number of passengers boarding transit in a region. In general, data from the peer regions indicates that as transit revenue miles (supply) per capita increase, passenger boardings per capita (demand) also increase. This pattern does not directly account for other variables such as land use and development patterns, traffic congestion, vehicle ownership rates, and parking costs.

2006 Transit Boardings & Miles of Service

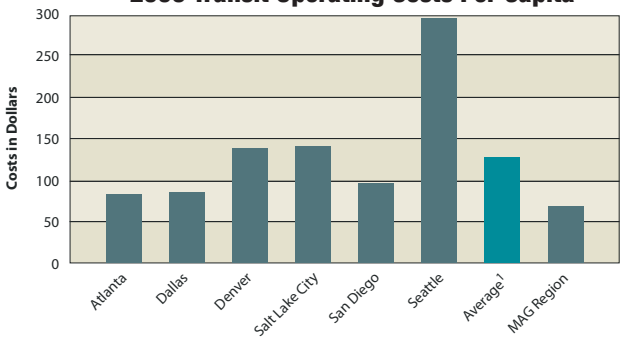


Source: National Transit Database

Investment in Transit

Regional investments in transit service vary greatly. On average, the peer regions invest approximately $130 per person per year. The MAG region invests just over $71 per year.

2006 Transit Operating Costs Per Capita



Public Involvement

MAG and its partners, Valley Metro Rail (METRO) and Valley Metro, conducted a comprehensive public outreach process geared towards both transit riders and non-riders. Its goal was to reach a broad range of citizens to obtain feedback on Maricopa County's current transit system, and on the types of regional transit service that the community would like to see. The process involved a series of focus groups and a telephone survey of Maricopa County residents who were not regular public transit riders. Public feedback helped to identify future transit needs and played a key role in defining regional transit deficiencies for the RTFS.

Regional Transit Problem Definition

The RTFS was intended to identify improvements designed to attract new transit riders and improve transit service for existing customers. To accomplish this, it was necessary to understand the factors that affect the decision to use transit, as well as the relationships among transit, land use, local plans and policies, and other transportation planning efforts. Through research and stakeholder input (such as the focus groups and telephone survey), the MAG study team identified the following regional transit deficiencies:

- Transit demand exceeding capacity (in areas and corridors with high demand for service), causing overcrowding
- Insufficient service expansion (as funded and programmed in the twenty-year RTP)
- Capital deficiencies (i.e., insufficient infrastructure, facilities and vehicles)
- Unmet needs for convenient services
- Unserved sparsely developed areas (with a need for rural or inter-community service)
- Unserved growth areas
- Route patterns not well suited to support broadly dispersed employment, which makes conventional transit service less efficient and more costly to provide
- Congested roadways (slowing transit service, making it less efficient and less appealing)
- Insufficient support for economic competitiveness (which is becoming more dependent on good public transit)
- Lack of funding for new transit investments

In general, deficiencies of the public transportation system in Maricopa County fall within three overlapping categories: service area coverage, passenger convenience, and funding.

Service Area Coverage

Most long-term population growth is projected to occur in areas outside the Loop 101 and 202 freeways—areas that currently have little or no transit service. While the RTP provides for some expansion to these areas, geographic coverage will still be limited, as will hours and frequency of service. Addressing future transit needs on the periphery of the metropolitan area will require consideration of both residential and employment concentrations.

Passenger Convenience

Regional focus groups and the survey revealed many forms of inconvenience that discourage transit ridership among those who have other travel options, including long waits at transfer points, safety and security concerns (e.g., lighting, safe crosswalks, visibility), lack of amenities at many transit stops, absence of real-time arrival information, overcrowding, roadway congestion, and inadequate park-and-ride capacity. The RTP addresses only some of these issues at a limited number of locations.

Funding and Seamless Service

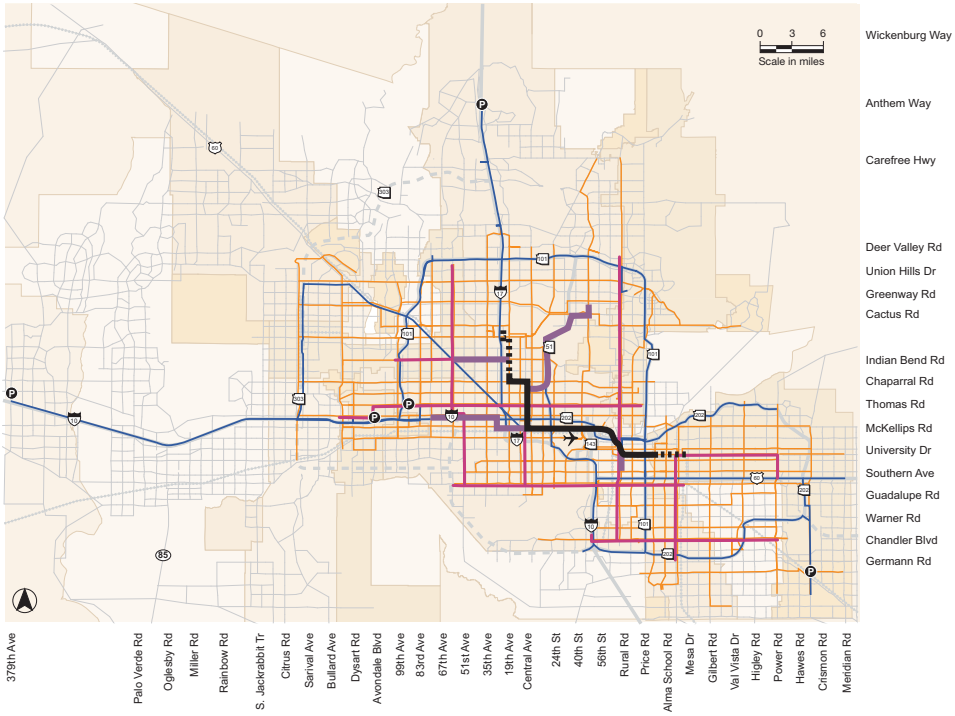
Not only is transit funding in Maricopa County modest compared with many peer regions, it also comes from a mix of regional and local sources. As a result, the level of service will continue to vary from one community to another, even when the RTP improvements have been fully implemented. A truly seamless and consistent regional system would require funding beyond the level provided through the RTP.

The analysis of transit deficiencies led the MAG study team to identify four categories of regional transit needs around which the recommended scenarios were developed: (1) new and expanded transit services, (2) new service corridors, (3) higher-speed travel opportunities, and (4) new revenue sources.

Year 2030 Transit Scenarios

Three regional transit scenarios were developed for 2030 to provide options for improving transit service in the MAG region. The scenarios build on the transit enhancements identified in the MAG RTP (funded through proposition 400 and local sources) and are based on a defined level of financial investment. New enhancements beyond those already defined in the RTP include improvements to existing transit service, expansion of transit service to new areas, and the inclusion of new transit service options (e.g., express bus, arterial bus rapid transit, high-capacity transit).

Scenario I - Basic Mobility



LEGEND

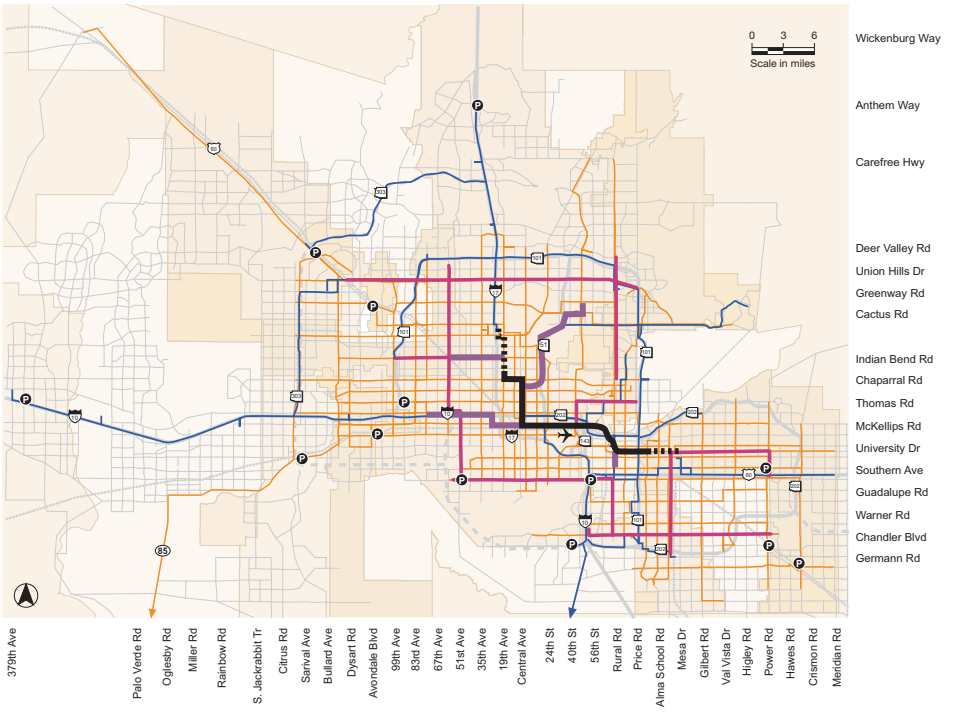
Existing and Planned Transit Service and Facilities

- Light Rail Line
- Light Rail Extension
- Future High Capacity Transit
- Express Bus
- Regional Supergrid and Connector Bus
- Arterial Bus Rapid Transit
- Emerging Transit Corridors Beyond 2030
- Park-and-Ride Facility
- Transit Center
- Intermodal Interface Locations

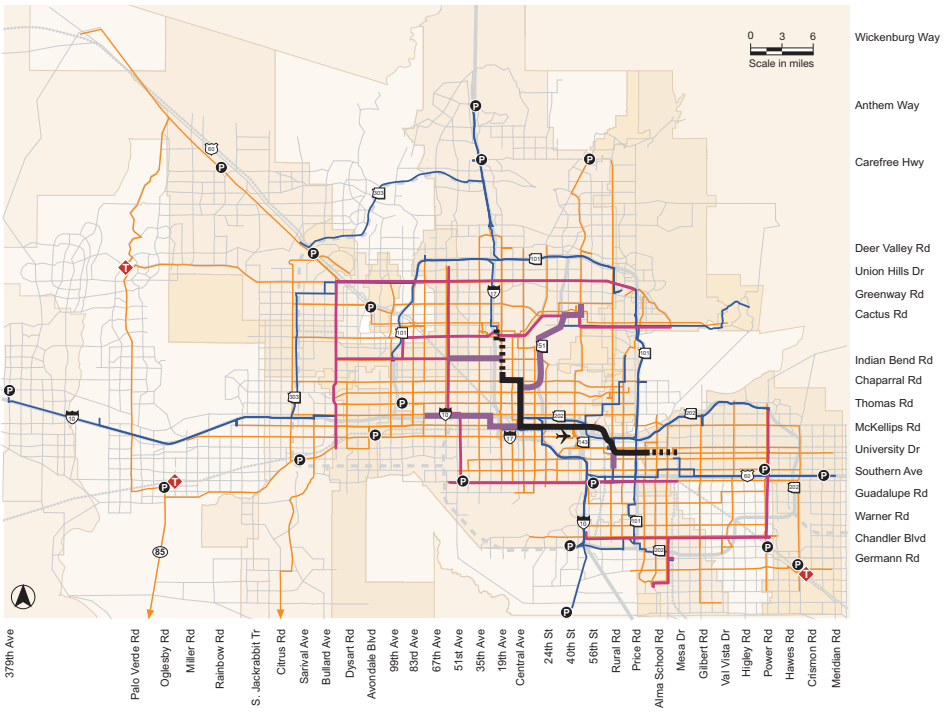
Freeways/Expressways

- Existing
- Planned

Scenario II - Enhanced Mobility



Scenario III - Transit Choice



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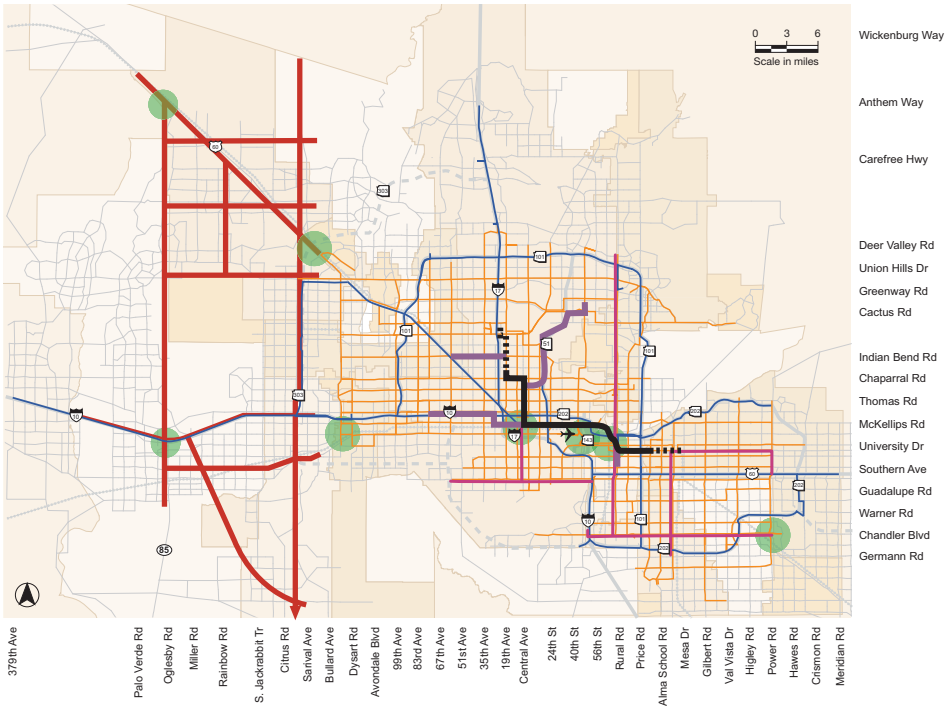
Beyond 2030



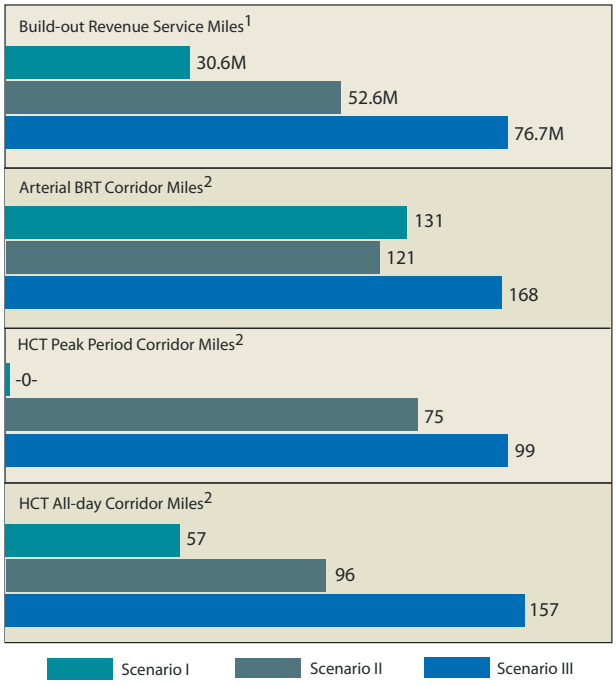
Scenario	Investment Level	Philosophy	Characteristics
I: Basic Mobility	Lowest (extend existing sources)	Continuation of RTP • Minimal service expansion with same types of services and programs as currently programmed in the RTP	• Expands service to new areas • Improves service levels within a limited number of high demand transit corridors • Many deficiencies not addressed
II: Enhanced Mobility	Moderate (comparable to peer regions level)	Concentrated Expansion • Moderate service expansion • Moderate increase in service area • Improved frequencies to meet standard service levels • Higher speed options (express bus, arterial BRT & HCT) • Activity centers outside urbanized area primarily connected through frequent, limited stop express services	• Expands regional transit service levels • Improves transit travel speeds in highest priority corridors • Deficient service levels improved
III: Transit Choice	Higher (comparable to Seattle level)	Growth Expansion • Most aggressive service expansion • Comparatively greatest increase in service area • Improved frequencies to meet standard service levels • More high-speed options in urban/non-urban area • Activity centers outside urbanized area connected through frequent, limited stop express services and Supergrid bus	• Expands regional transit service levels • Provides a more comprehensive regional transit system • Improves transit travel speeds in many more corridors • Nearly all deficiencies are addressed

Investment Options	Scenario I	Scenario II	Scenario III
Local Transit Service Improvements	---	●	●
Basic Expansion of ADA Paratransit Service	●	●	●
Regional Paratransit Service	---	●	●
Regional Connector – New Routes	---	---	●
Supergrid - Route Extensions	●	●	●
Supergrid - Increased Frequency	---	●	●
Express – New Routes & Increased Frequency	●	●	●
Express – Two-way All-day Service	●	●	●
Arterial BRT – New Routes	●	●	●
Arterial BRT – Increased Frequency	●	●	●
HCT Peak Period – New Routes	---	●	●
HCT All Day – Route Extensions	---	●	●

Descriptions of each transit mode in the transit service scenarios are provided below. Photos of similar services are displayed in the column to the left.

- **A** ADA Paratransit (dial-a-ride) – Curb-to-curb shared ride service for eligible persons with disabilities who are unable to travel alone by bus.
- **B** Regional Connectors—Intercity buses connecting outlying communities with activity centers.
- **C** Supergrid—Bus service on major arterial streets serving major activity centers with consistent levels of service operating across jurisdictional boundaries.
- **D** Express Bus—Services using the regional freeway system and HOV lanes to connect park-and-ride lots with major employment centers.
- **E** Arterial Bus Rapid Transit (BRT)—Arterial bus service that operates faster than supergrid routes, by making a limited number of stops and taking advantage of features such as traffic signal priority.
- **F** High-Capacity Transit All-Day—Frequent, all-day rail or bus service that typically operates in a dedicated guideway and stops for passengers only at designated stations.
- **G** High-Capacity Transit Peak-Period—Long-distance rail (i.e., commuter rail) or bus service operating in a dedicated guideway, making infrequent stops, and operating primarily during the morning and afternoon peak periods.

Comparison of Scenarios



1 Includes all regional transit modes (local services not included)
2 Includes all corridor miles operated including original RTP funded corridors

The transit service scenarios provide the community with three separate visions for the future. The first scenario (Basic Mobility) includes minimal service expansion with the same types and levels of service provided today and currently programmed in the RTP. The purpose of this scenario is to illustrate what could be accomplished in the region if all current transit revenue sources are extended through 2030.

The second scenario (Enhanced Mobility) assumes that the region funds transit service at a level comparable to the peer regions average, providing for improved bus service frequencies, expanded express bus service with some routes operating all day, expanded arterial BRT service, the construction and operation of new high-capacity transit corridors, and a seamless regional ADA paratransit program. This scenario provides a greater emphasis on concentrating transit services in areas with the greatest population and employment densities. Low-density areas are connected to activity centers and other regional transit services through direct express routes and other services.

Scenario III accomplishes all of the elements in Scenario II, but includes additional high-capacity transit corridors and a larger network of supergrid bus routes to serve more areas of the region with high-quality transit service. This scenario assumes that the regional transit program would be funded at a level comparable to the Seattle region. The Seattle region invests approximately four times more in transit than the Phoenix region (adjusted for population).

Funding

The Regional Transit Framework scenarios were developed based on the region's needs and deficiencies, as well as other considerations including regional connectivity and integration with other transportation modes. Expenditures or costs were another factor in determining the transit services and capital investments identified for each scenario.

Expenditures represent estimated costs associated with implementing, developing or purchasing the transit elements defined in each scenario (see below). Since the framework establishes a guide for future regional planning, not a financially constrained implementation plan, potential revenue sources are not specified.

Transit and Sustainable Development

Maricopa County's investment today in transit is an important element in shaping the region's future travel behavior. Focus groups, telephone survey respondents, the general public and peer regions expressed support for transit investment to provide a convenient system that supports economic development and provides mobility choices. To attain these goals in other regions, transit districts are working with municipal agencies to develop a foundation for successful transit investments through better land use integration. They recognize that the relationship between regional land use development and transit service is a key to building and sustaining ridership. Transit authorities have promoted zoning regulations that implement desired land use patterns around transit stations, and are working with their communities to enhance transit connections through bus, bike and pedestrian facilities. These agencies have also considered parking strategies and their effect on transit use.

Transit-Supportive Land Use

Transit use is strongly dependent on development density and land use. Typically, concentrated, mixed-use development produces higher residential and employment densities, which boost transit ridership. In particular, downtown employment centers, especially ones with limited or costly parking, generate a strong transit ridership base.

Transit Oriented Development (TOD) is defined as compact mixed-use (e.g., residential, office, retail, entertainment) development, located within an easy walk of a transit station or stop. By focusing compact development around transit stations, transit-supportive developments capitalize on public investments. The typical components of transit-supportive development near a station include moderate to high-density development, a mix of land use types, parking behind buildings or on the street, plazas or public spaces, and public art.

Activity Centers

Activity centers can produce significant transit ridership. An activity center can be a recreational or sports facility, a major shopping destination, or an entertainment venue. Structured parking is often built next to the site along with other uses. At some locations, parking is shared between uses to allow more intense land use. The combination of limited parking and activity center demand can mean higher transit ridership to these locations.

Parking and Transit

In addition to station proximity and transit service quality, parking policies influence ridership. An ample and easily accessible supply of parking, such as that found in many suburban office parks, encourages auto use and reduces attractiveness to transit riders. Conversely, the concentrated uses and limited and costly parking supply found in many major downtowns leads to higher ridership. The decreased amount of land dedicated to parking not only generates transit ridership, but supports the development of denser land uses.

Comparison of Estimated Expenditures by Scenario (in 2008$)

Scenario	Local/Other	Regional	Total	Program Years
RTP Base	$6.85 billion[1]	$7.15 billion[2]	$14.00 billion	2008 – 2028
Scenario I	$0	$2.05 billion	$2.05 billion	2027 – 2030
Scenario II	$2.90 billion	$8.15 billion	$11.05 billion	2015 – 2030
Scenario III	$3.80 billion	$17.70 billion	$21.50 billion	2015 – 2030

1 RTP local/other supported by fares, local sales tax, general funds, etc. (local taxes/gen fund = 69.3% of local/other category)
2 RTP regional supported by regional sales tax and federal funds (Prop 400 sales tax = 59.5% of regional category)
Source: MAG Study Team, 2009

Relationship to Statewide Transportation Planning Framework Study

The MAG RTF identifies future transit needs for the entire county. The same concerns for meeting future travel demand are shared by communities across the state. To address the issue statewide, other framework studies have been completed throughout Arizona. The MAG RTF will join these studies as input into a statewide multi-modal transportation planning framework. This coordinated planning framework process is known as Building a Quality Arizona (bqAZ).

Regional Transit Program for the Future

Developed through a demand-based approach, the regional transit framework scenarios provide a blueprint for a better coordinated and integrated regional transit system. Implementation of the concepts in these scenarios would transform the current regional transit system to one that more effectively and efficiently addresses travel needs throughout the region. To advance the transit service scenarios beyond a mere blueprint, the region must reach consensus on the future transit vision, identify resources and develop a detailed implementation strategy.

FOR MORE INFORMATION

Visit bqaz.org and select "MAG Regional Transit Framework Study," or contact Kevin Wallace of Maricopa Association of Governments, phone: 602-254-6300 e-mail: kwallace@mag.maricopa.gov

MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue
Suite 300
Phoenix, AZ 85003