

# Regional Transportation Plan



## Final Document

Prepared for:

**Central Arizona Governments**

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# SECTION I

## INTRODUCTION



## 1.0 INTRODUCTION

### 1.1 OVERVIEW

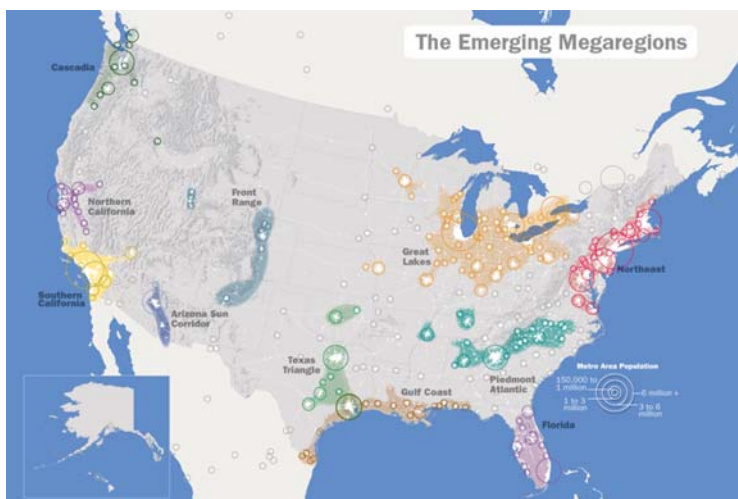
During December 2011, the Central Arizona Governments (CAG) initiated an effort to develop a comprehensive long-range Regional Transportation Plan (RTP) for the CAG Region, which at that time included all of Gila and Pinal counties. During the course of the RTP study effort, the transportation planning boundaries of the CAG Region were revised with the emergence of a newly defined metropolitan planning area in western Pinal County, and expansion of the boundaries of an existing metropolitan planning area into northern Pinal County. However, it was decided that for the purpose of the ongoing regional transportation planning effort, the CAG Region as addressed in this RTP would continue to encompass all of Gila and Pinal counties.

The RTP reflects a full investigation of transportation issues facing the region and charts the region's transportation future, permitting CAG to more effectively guide strategic investments. The RTP is a multimodal plan which addresses accessibility and mobility concerns relative to the roadway system, transit services, pedestrian and bicycle facilities, aviation and goods movement. Future needs for each of these have been considered in the regional transportation planning process. These needs have been derived through an analysis of the future growth potential of the CAG Region, as interpreted from regional and local land use and development patterns.

#### 1.1.1 PLANNING CONTEXT

The CAG Region is located in central Arizona. A large portion of the region also is central to the Arizona Sun Corridor megalopolis, which represents a large emerging socioeconomically interdependent area occupying much of the state connecting the Arizona-Mexico border area in the south with Tucson, Phoenix, and Prescott in the north. **Figure 1** illustrates the location of the Arizona Sun Corridor megalopolis in relation to other emerging megaregions in the United States, while **Figure 2** shows in greater detail the focus and growth areas of this emerging Arizona Sun Corridor megalopolis and the CAG Region's relationship to the corridor. The merging of social, economic, and transportation ties and resources within the Arizona Sun Corridor will directly affect a large portion of Pinal County and communities within the CAG Region. The growth and development within the Arizona Sun Corridor megalopolis represent significant challenges regarding the future management of transportation, land use, water, and air resources.

FIGURE 1 – EMERGING MEGAREGIONS

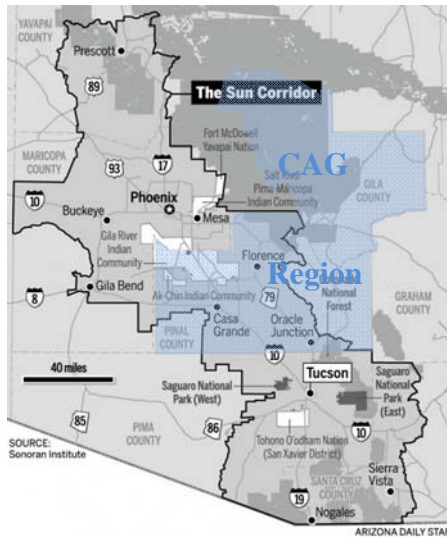


Source: Regional Plan Association, "Map of Emerging US Megaregions" by IrvingPINYC - Own work. Licensed under Creative Commons Attribution-Share Alike 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:MapofEmergingUSMegaregions.png#mediaviewer/File:MapofEmergingUSMegaregions.png>





FIGURE 2 – ARIZONA SUN CORRIDOR



Source: Arizona Daily Star and Sonoran Institute.

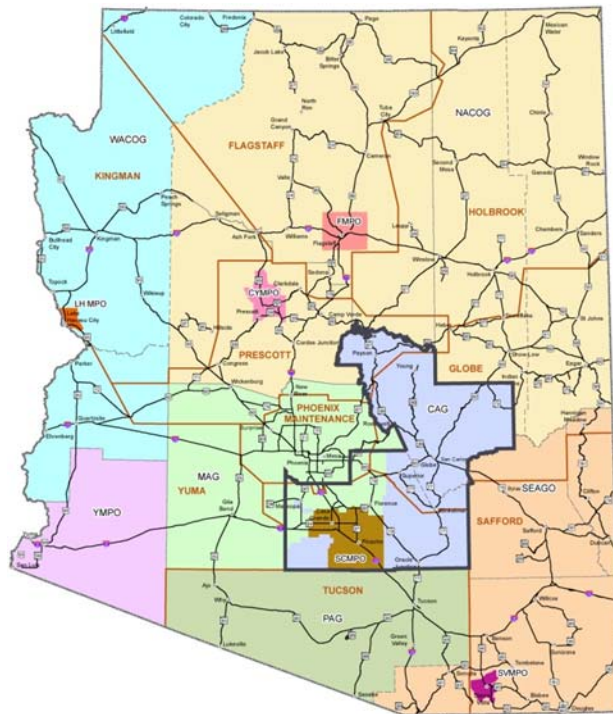
## 1.1.2 PLANNING AUTHORITY

CAG was incorporated in 1975 and is one of six regional planning districts, or Councils of Governments (COGs), which was established by Executive Order 70-2 and signed by the Governor of Arizona to provide effective regional planning services to Gila and Pinal counties. The goal of Executive Order 70-2 was to promote a “community of interest” and preserve the boundaries of the region. The Executive Order established a population base throughout the region sufficient to support a number of planning activities, while complying with federal planning requirements and addressing the concerns of local government officials. The CAG Region is comprised of Gila and Pinal counties, and includes the 17 incorporated communities of Apache Junction, Casa Grande, Coolidge, Eloy, Florence, Globe, Hayden, Kearny, Mammoth, Marana, Maricopa, Miami, Payson, Queen Creek, Star Valley, Superior and Winkelman. The Ak-Chin Indian Community, Gila River Indian Community, and San Carlos Apache Indian Community are also members of the region. The CAG Region boundaries are displayed in **Figure 3**.

## 1.1.3 PLAN PURPOSE

The RTP lends a regional perspective to the identification of future transportation facility needs; identifies potential environmental mitigation actions associated with developing such facilities; establishes operational and capital investment strategies and priorities, and supports the implementation of RTP components. The RTP provides a framework for allocating funding for transportation improvements throughout the CAG Region to a planning horizon of 2040. The funds are used to operate, maintain, and expand the region’s transportation infrastructure, which includes roads, bridges, transit vehicles, aviation facilities, pedestrian and bicycle paths, as well as administration and maintenance facilities. Funds for these activities, or projects, come from multiple sources including Federal transportation assistance programs, State transportation funds, and local revenue sources. The RTP, using regional growth forecasts prepared by CAG and its member agencies as a basis, provides guidance for allocating available funding in a manner that supports the goals and objectives of the region and its constituent communities. These goals and objectives address transportation issues such as

FIGURE 3 – ARIZONA MPOs AND COGs  
(WITH ADOT ENGINEERING DISTRICTS)



expanding system capacity, reducing traffic congestion, improving air quality, encouraging transit use, expanding opportunities for walking and bicycling as alternate modes of travel, installing/upgrading safety features (e.g. barriers, lighting, signage, and railroad crossings) and carpooling. This information is developed for the full CAG Region, as shown in **Figure 4**, and will be coordinated with the planning actions of all communities within the region and the Metropolitan Planning Organizations (MPOs) that coordinate planning and development decisions for the region's larger urban areas.

## 1.2 STAKEHOLDER OUTREACH/INVOLVEMENT

Stakeholders from the counties, cities, towns, and Native American Indian Communities that make up the CAG Region were meaningfully involved throughout the planning process through various methods. The intent of the stakeholder involvement was to afford reasonable opportunities for interested parties to become engaged in the preparation and review of the RTP.

### REGIONAL WORKSHOPS

The findings and conclusions derived from data collection and review efforts were shared with the communities of the CAG Region through six regional workshops held in the following areas:

- Apache Junction/Queen Creek/Pinal County
- Casa Grande
- Coolidge/Florence/Eloy
- Gila County/Globe/Payson/Miami/Superior
- Maricopa/Ak-Chin Indian Community, and
- Gila River Indian Community.

The six Regional Workshops provided an opportunity for stakeholders and public officials to discuss key facets of the RTP development process, including:

- What is a Regional Transportation Plan (RTP)?
- What is a Transportation Improvement Program (TIP)?
- What is the purpose of the effort?
- What is CAG's role?
- Who makes up the Multidisciplinary Project Team?
- What is the Project Schedule?
- What is the RTP Development Process?
- What have been the work activities?

### STATE AND REGIONAL COORDINATION

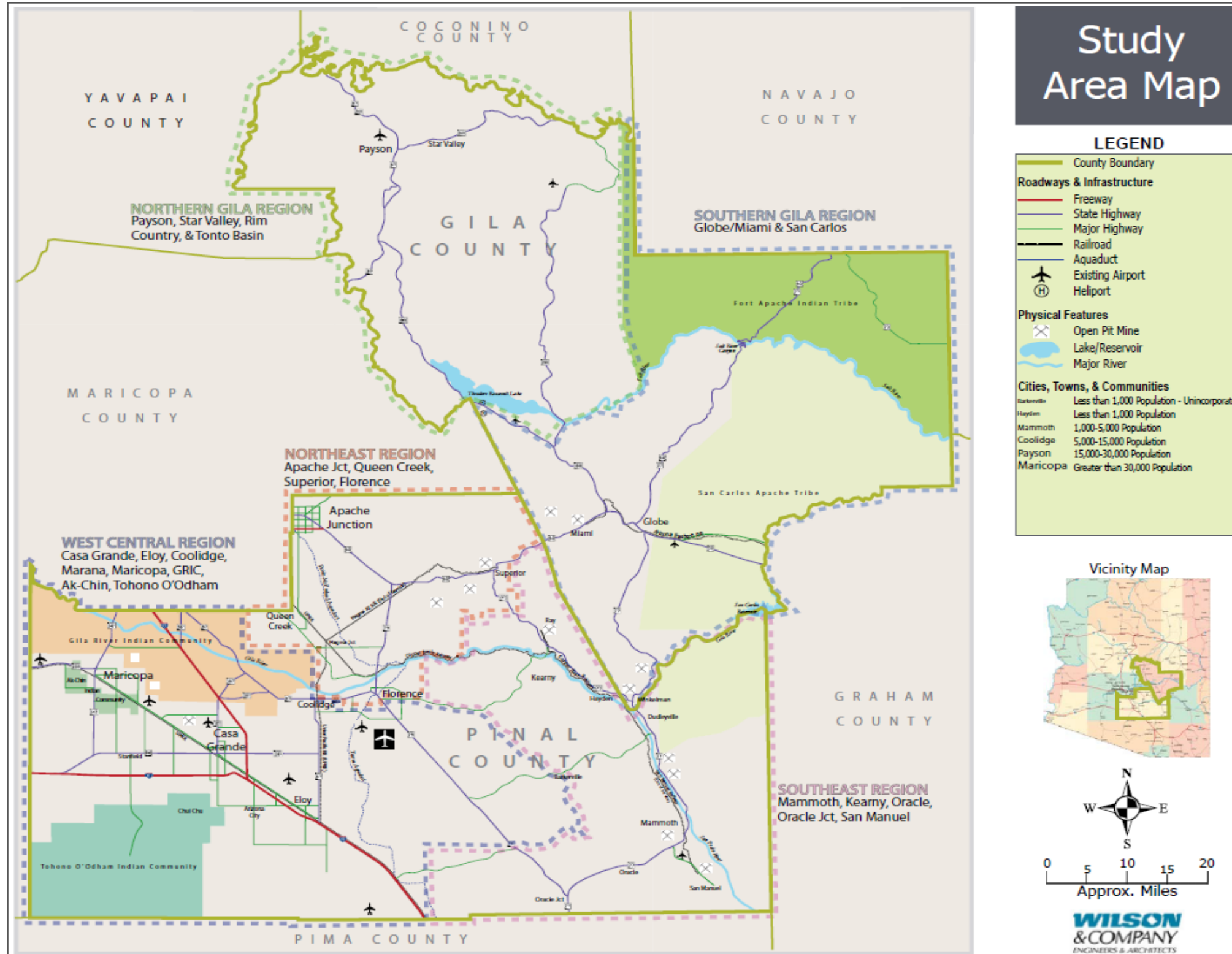
Certain planning assessments and anticipated implementation actions were coordinated with appropriate state agencies and adjacent regional planning organizations serving Maricopa and Pima counties. The result of this effort is a multimodal plan for transportation facilities and services throughout the CAG Region which are fully integrated with the state transportation system and neighboring regions.



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FIGURE 4 – CAG REGIONAL TRANSPORTATION PLAN STUDY AREA





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## COMMUNITY PRESENTATIONS

A total of 14 individual PowerPoint presentations on the RTP development process were prepared and presented in an effort to brief different communities in the CAG Region. The presentations addressed the:

- Project schedule,
- Work tasks,
- Development of the Regional Travel Demand Model,
- Existing and future population and employment of the community, and
- Plans for continuing opportunities to participate in the planning process.

## GOVERNMENTAL BODIES

In addition to the involvement and coordination with public and private organizations and individuals, the RTP development process and results were summarized and shared with six governmental bodies representing the general public interests of the region's residents, business, and visitors, as identified below:

Apache Junction City Council, October 20, 2014	Pinal County Board of Supervisors, November 12, 2014
Coolidge City Council, October 27, 2014	Sun Corridor MPO Regional Council, November, 18, 2014
Gila County Board of Supervisors, October 28, 2014	Ak-Chin Indian Community Tribal Council, November 19, 2014

A slide presentation was presented to each group that addressed the background and vision of the RTP, identified near-term, mid-term, and long-term goals for the CAG Region, and provided a proposed timeframe for completing recommended transportation improvements.

## 1.3 COMMITTEE ACTIVITIES

Three standing CAG committees were directly engaged in the development of this RTP. The committees provided valuable input and feedback to help guide decisions relating to the development of technical products, assistance in defining technical programs, and advice relating to population and employment projections.

### TECHNICAL ADVISORY GROUP

The Technical Advisory Group (TAG) consisted of a group of agency representatives specifically formed to aid in the development of the RTP, which was responsible for technical review of the study process and products. Input from the TAG was secured throughout the study process. TAG members met seven times during the development of the RTP. As a “representative” of their agency, TAG members were responsible for:

- Ensuring that their agencies (management and elected officials) were kept informed as the study progressed( especially at interim decision points),
- Attending TAG meetings and providing timely input and feedback to CAG and the Study Team,
- Reviewing and providing input on all study products, and
- Representing the position of their agency.



## TRANSPORTATION TECHNICAL ADVISORY COMMITTEE

CAG maintains a standing Transportation Technical Advisory Committee (TTAC) comprised of one representative from each member of the COG's Transportation Area, of which there are 14, and one designated staff member from the Arizona Department of Transportation (ADOT). The TTAC provides technical advice to the CAG Management Committee and CAG Regional Council. The TTAC's members review transportation items which are scheduled to be heard by the Regional Council, and then provide recommendations from a technical viewpoint. The TTAC has responsibility for developing a five-year highway construction program that reflects the CAG Region's priorities for the Federal Aid Highway Program (FAHP). The FAHP is currently a primary source of funds for constructing Arizona highways, roads and streets. The majority of the funding under this program is allocated to four core programs, which include the National Highway Performance Program (NHPP), Surface Transportation Program (STP), Highway Safety Improvement Program (HSIP) and Congestion Mitigation and Air Quality (CMAQ) Program.

## POPULATION TECHNICAL ADVISORY COMMITTEE

The mission of the Population Technical Advisory Committee (POPTAC) is to participate in - and provide local input for - CAG's activities relating to the preparation of population estimates, population projections, and census-related issues. The POPTAC was engaged during the development of the RTP to review the methodology employed for growth projections and travel demand forecasts, the latter being dependent on population and economic changes and the geographic distribution of those changes. The POPTAC was also consulted to assure acceptability of the allocation of population projections between Gila and Pinal counties, which was needed in order to recognize distinct growth dynamics and the results of recently completed independent transportation studies for communities in both counties.

## 1.4 VISION, VALUES, GOALS, AND OBJECTIVES

The overall intent of the RTP is to establish a long-term vision for the CAG Region that embraces the full width and breadth of wants and needs of the region's communities and residents. This is accomplished by stating a set of values reflecting key foundational beliefs relating to the region's transportation systems. The vision and values are supported by goals and objectives formulated from numerous contacts and extensive input received from community leaders and residents. Attachment 1 presents the values, goals, and objectives developed to support this regional plan.

### VISION

A key focus of the early stages of the planning process was the establishment of a "Vision" for the CAG Region and how the RTP would aid in achieving the Vision. The Vision Statement gives form and direction to the CAG Region's future and acts as an umbrella over the dynamic and interconnected transportation system by which it is served. Formulating the Vision for the RTP recognized the diversity of the CAG Region, which ranges from areas of emerging population and employment within the Arizona Sun Corridor megalopolis to rural areas with mining

### VISION

*"Maintain and enhance a regional multimodal transportation system that advances the CAG Region's competitive position to support regional and multi-national economic activities and development, provides integrated travel opportunities to the region's residents and visitors, and improves access to the region's unique recreational assets."*





activities and numerous recreational opportunities that attract many visitors to the region. Anticipated growth and continued tourism requires timely development and improvement of roadway, railway, public transit, and aviation assets in coordination with the economic and social development goals of the larger region. With this foundational Vision Statement, the RTP becomes the framework for establishing an efficient and effective transportation system to enhance intraregional and interregional connectivity.

## REGIONAL TRANSPORTATION VALUES

- Economic Development and Opportunity
- Connectivity, Accessibility, and Mobility
- Environmental Quality
- Quality of Life
- Community Cohesiveness and Regional Identity

## VALUES

The diversity of the CAG Region is also reflected in the Values established for this RTP regarding the general shared beliefs of the region's residents regarding transportation needs. These Values were formulated

discerning five broad areas of interest and concern relative to the purpose and function of the region's transportation system as the means for improving and sustaining the quality of life for all residents. Values are like maps that drive or guide an organization's culture and priorities. They provide a framework by which decisions are made in fulfillment of the organization's vision for its future. Values aid in defining the Vision, and also provide a foundational meaning of the mission to be accomplished within the RTP.

## GOALS AND OBJECTIVES

Goals and Objectives were developed which defines the future of transportation and its overall role in community development. The Goals and Objectives were synthesized and restructured to reflect an "overarching" set of aspirations which are relevant to the conditions and issues facing the region today, and also support the Vision and Values adopted for the RTP. Through this "compendium" approach, a melding of concerns, understandings, ideals, issues, and desires of multiple governmental entities within the CAG Region was attained and reflected in seven Goals.

## REGIONAL TRANSPORTATION GOALS

- Establish Regional Identity and Capability
- Foster Regional Economic Development
- Support Community Development and Sustainability
- Provide Multimodal Mobility Options
- Accommodate Anticipated Growth in Travel Demand
- Promote Land Use and Transportation Integration
- Establish Sound Policies for Funding, Financing, and Accountability

Objectives were defined for each Goal to aid in refining the transportation decision-making process, and to set the course for achieving each Goal over time. These objectives are detailed in Appendix One.

## 1.5 STRUCTURE OF THE PLAN

Although CAG is a COG for a rural area, significant portions of the region, particularly western, central, and northern Pinal County, have experienced rapid urbanization in the past decade. In



addition, growth and development in the adjacent metropolitan counties of Maricopa and Pima exert strong influences on travel through Pinal County, as well as into and out of Pinal County in the form of daily commutes to employment opportunities in the two counties. In contrast, while some minor urbanization has occurred in Gila County, the county remains relatively rural in character with a focus on non-urban type activities, such as mining, skiing, hiking, camping, and boating. Therefore, CAG has approached the preparation of this RTP recognizing the differences between the two counties, but also with an understanding that the ultimate growth dynamics in Central Arizona and the many practices and influences of the large metropolitan areas effect a significant portion of the region's population located in Pinal County, but also contribute to recreational and tourism travel in the more rural areas of the CAG Region.

## 1.5.1 PLAN FRAMEWORK

This RTP follows accepted regional planning principles and includes the following key components:

**RTP Planning Horizon** – This RTP addresses no less than a 20-year planning horizon.

**Planning Strategies/Actions** – This RTP includes both short-range and long-range strategies/actions directed toward the creation of an integrated multimodal transportation system.

**RTP Cycle Updates** – This RTP initiates a new cycle calling for review and revision, as appropriate, at least every five years. In air quality non-attainment regions, this update cycle is every four years. As this is the initial RTP for the CAG Region, an updated RTP should occur in 2016 for air quality non-attainment areas, and in 2017 for attainment areas.

**Data Requirements** – This RTP is based on the latest available assumptions, estimates, and projections of population, land use, travel, employment, congestion and economic activity.

**Elements of the RTP** – This RTP includes:

- Travel demand forecasts for persons and goods (i.e., freight) over the planning horizon;
- Identification of existing and proposed transportation facilities, including roadways, transit, multimodal and intermodal facilities and connections, pedestrian walkways, and bicycle facilities, with an emphasis on those facilities that serve important national and regional transportation functions;
- Transportation and transit enhancement activities, as appropriate;
- Operational and management strategies aimed at improving facility performance to relieve congestion and maximize safety and mobility within the transportation system;
- Consideration of congestion management practices, as appropriate, particularly in air quality non-attainment areas;
- Capital investment and other strategies to preserve the existing and projected future transportation infrastructure, and to support multimodal capacity increases;
- Description of proposed improvements in sufficient detail to support cost estimates;
- Discussion of types of potential environmental mitigation activities, including tentative areas for carrying out such activities, determined in consultation with appropriate Federal, State, Tribal, environmental, and regulatory agencies; and
- A Financial Plan demonstrating how the adopted RTP may be implemented over the planning period, identifying resources reasonably expected to be available in order to carry out the Plan, and recommending any additional financing strategies for needed projects and programs.



**Agency Consultations** – This RTP incorporates the results of consultations, as appropriate, with state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.

## 1.5.2 PLAN ORGANIZATION

This RTP is organized to provide a comprehensive view of the regional transportation system serving the CAG Region. Information is presented in four sections.

### EXISTING AND FUTURE BASELINE CONDITIONS

The first section begins by establishing an understanding of existing socioeconomic and travel conditions, which includes a discussion of the levels of general use associated with the CAG Region's roadways and availability of travel opportunities by other modes (e.g., public transportation, walking, and bicycling). A detailed description of the primary transportation system of the region – the roadway network – is then provided. This discussion highlights the function of various roadways in the regional and community framework and provides information regarding the design and extent of roadways. It also identifies the different jurisdictional control and responsibilities that exist relative to the development and maintenance of the roadway network.

### TRANSPORTATION ELEMENTS

The second section addresses the various modes of travel within the CAG Region and outlines specific actions and initiatives for improving the multimodal character of the regional transportation system to enhance accessibility and mobility. Non-motorized transportation mobility factors are discussed, reflecting greater emphasis today on developing opportunities for utilizing alternate forms of travel as a replacement of the privately-owned vehicle. Opportunities for achieving appropriate connectivity among and between both non-motorized and motorized travel modes are outlined. This section also provides specific guidance addressing the following key elements of the regional transportation system:

- Roadway network development and improvement,
- Aviation facilities and services,
- Access management to create a more efficient and safer roadway system,
- Safety issues and the relationship between CAG Region initiatives and those of the State Highway Safety Plan (SHSP),
- Transit system development and opportunities to improve services and connectivity,
- Freight services and facilities to support continued trucking operations,
- Rail services, including freight shipment and passenger travel, and
- Roads of Regional Significance.

### LONG-RANGE TRANSPORTATION PLAN

The third section of the RTP discusses implementation of improvements to the region's transportation system. The Long-Range Transportation Plan (LRTP) sets forth how CAG plans to invest in the region's transportation system in order to create an integrated intermodal transportation system that facilitates the efficient movement of people and goods. It presents information and data relating to, among other things:



- Systematic consideration of roadways, transit, non-motorized transportation, and intermodal connections that includes –
  - Assessment of goals and plans relating to regional land use patterns, development and housing trends, and employment,
  - Forecasts of the demand for transportation services by mode over 20 years, and
  - Evaluation of alternatives.
- Examination and discussion of policies, goals, objectives, and strategies for improving transportation services to meet anticipated demand, including –
  - Ways to preserve existing roads and facilities and make efficient use of the existing system, and
  - Identification and prioritization of new projects to improve the efficiency, effectiveness, and safety of regional transportation services.

## PLAN IMPLEMENTATION STRATEGY

The recommended future transportation projects and programs set forth herein were based on a continuing, cooperative and comprehensive (3-C) planning process. The cooperative process followed during the preparation of this RTP was aimed at fostering involvement by all entities with a vested interest in the region's transportation system, including: state, county, and local officials, business interests, community groups, environmental organizations, freight operators, and the general public. As described above, CAG engaged in a proactive outreach and involvement effort. The purpose of this effort was to engage maximum participation by stakeholders, to ensure a comprehensive approach to evaluating the transportation needs of the CAG Region, and to assure the acceptance and implementation of the RTP. An implementing strategy has been formulated and adopted that is based on:

- Reasonable estimates of the cost to fully realize improvement initiatives and projects;
- A detailed assessment of potential future funding and revenue levels from appropriate transportation planning and programming sources (e.g., Federal, state, local, and private); and
- A phasing plan to support operations and maintenance (O&M) activities and capital investments that are consistent with anticipated revenues.



**SECTION II  
EXISTING AND  
FUTURE BASELINE  
CONDITIONS**





## 2.0 EXISTING AND FUTURE BASELINE CONDITIONS

### 2.1 SOCIOECONOMIC CHARACTERISTICS OF THE REGION

#### 2.1.1 POPULATION AND EMPLOYMENT

##### POPULATION AND EMPLOYMENT PROJECTIONS

A key aspect and driving force associated with developing the RTP were the results of the new 2010 Census and the new population and employment projections prepared by the Arizona Department of Administration (ADOA), Office of Employment and Population Statistics (OEPS). As this information is the basis for determining travel demand, it is critical for defining transportation improvement projects in the CAG Region. The OPES developed a new statewide projection and disaggregated that projection to create a projection for each county for the period 2012-2050.

A primary focus of concern for the RTP development effort was to ensure consistency between the existing regional and local population and employment projections and the OPES projections. ADOT and the Federal Highway Administration (FHWA) cannot enter into funding agreements for transportation improvement projects unless the RTP projections are consistent with the state projections. Therefore, projections prepared during the course of previous studies for CAG, Gila and Pinal counties, and some of the region's towns and cities needed to be reconciled with the OPES projections at the county level.

##### EXISTING AND FUTURE POPULATION AND EMPLOYMENT

Updated population projections for the two counties that form the CAG Region were available from the ADOA's State Demographer in early summer 2012. Estimates of associated employment in both counties were then developed based on the anticipated ratios of future population to employment in each county. The final base population and employment projections for Years 2020, 2030, and 2040 are shown in **Table 1**, along with the US Census count for 2010.

TABLE 1  
POPULATION AND EMPLOYMENT CONTROL TOTALS

Geographic Unit	Year			
	2010	2020	2030	2040
<b>Population</b>				
Pinal County	376,370	493,253	681,578	934,941
Gila County	53,600	55,654	57,460	58,735
CAG Region Total	429,970	548,907	739,038	993,676
<b>Employment</b>				
Pinal County	64,801	113,893	204,995	314,837
Gila County	11,393	11,778	12,234	12,501
CAG Region Total	76,194	125,671	217,229	327,338

Since these projections were developed at the county level, projections needed to be developed for each of the towns and cities in the CAG Region. OPES projections served as the control totals for Gila and Pinal counties. The disaggregation of county control totals to the communities was sensitive to existing and current development patterns and the frameworks of previous projections,





as applicable for the larger communities. **Table 2** shows the adopted projections for each community in Gila and Pinal counties and the counties as a whole. A comparison of existing and 2040 population and employment density is provided in **Figure 5** and

**Figure 6** respectively.

## 2.1.2 COMMUTING PRACTICES

A recent CAG analysis identified five economic regions that reflect commuting practices and suggest areas of focus for regional transportation planning (**Figure 7**). The economic region with the largest amount of out-commuting is northeastern Pinal County, which relies heavily on Maricopa County employment opportunities. A significant number of residents from the following communities travel to Maricopa County for employment: Queen Creek, San Tan Valley, Apache Junction, Gold Canyon, Maricopa and Sacaton. The communities of Oracle, San Manuel, Saddlebrooke, and, to a lesser degree, Mammoth in southeastern Pinal County primarily are oriented to Pima County for employment opportunities. The three other economic regions tend to have residents employed within the local area or within the county of residence.

**Commutes to work affect peak-hour traffic levels and the need for high-capacity roadways.**

**Figure 7** provides more specific information regarding the commuting practices of the CAG work force. A quick glance at the data in this table shows that the two principal counties that form the region have a striking similarity to the state relative to the practice of driving alone to work: single-occupancy vehicle, or SOV, travel accounts for more than three-quarters of all commute travel. Beyond that similarity, there are some pronounced differences. A smaller share of Gila County workers carpool or vanpool than in Pinal County, and a larger share of Pinal County workers carpool/vanpool than in the state as a whole. Notably absent throughout the CAG Region is travel to work by public transportation compared to Arizona as a whole. Public transportation commuting accommodates only 2/10ths of one percent of all commute trips in the region. In Gila County, workers are more than six minutes closer to their place of work compared to workers statewide, traveling on average only 18.2 minutes to work. Statewide, the average is 24.6 minutes. In contrast, workers in Pinal County are more than six minutes farther from their place of work than the statewide average.

## 2.2 MODES OF TRAVEL

The CAG Region's existing transportation system supports the operation of motorized vehicles, such as automobile, trucks, and buses; non-motorized modes of travel, including walking/running, bicycling, and horseback riding; and railroad services. The following subsections describe the principal elements of the existing regional transportation system.

### 2.2.1 PUBLIC TRANSPORTATION

Public transportation in the CAG Region is relatively limited, principally due to the rural character of the region. Although some communities have taken the initiative to develop and operate commuter services and circulator routes, funding these services is a continuing issue of concern. Plus, although opportunities for general public transportation travel exist between some communities within the region, there are very few services that provide connections to adjoining regions or counties for purposes of employment.

TABLE 2  
CAG REGION POPULATION AND EMPLOYMENT PROJECTIONS BY MUNICIPAL PLANNING AREA (MPA)

Municipal Planning Area (MPA)	Total Resident Population					Total Employment				
	2010	2020	2030	2040	Buildout	2010	2020	2030	2040	Buildout
<b>Pinal County</b>										
City of Apache Junction *	49,371	58,189	75,885	117,876	337,670	9,521	15,689	33,230	51,331	92,640
Ak-Chin Indian Community	1,002	1,027	1,100	1,182	1,540	1,013	1,415	1,571	2,069	7,240
City of Casa Grande	59,670	75,748	102,146	141,019	992,180	20,056	27,806	49,111	75,572	427,890
City of Coolidge	14,688	20,869	33,286	49,840	624,810	4,100	10,133	17,108	27,080	296,310
City of Eloy	20,807	34,525	65,038	102,381	1,108,330	3,240	6,640	14,601	26,345	457,250
Town of Florence	66,555	92,060	125,965	165,479	688,080	11,504	20,984	33,923	50,833	310,210
Gila River Indian Community	8,346	9,053	9,449	9,710	17,090	1,625	4,090	5,484	6,312	3,100
Town of Kearny	2,074	2,322	2,376	2,414	10,580	365	793	1,078	1,204	2,870
City of Maricopa	51,269	73,427	105,157	138,897	633,880	5,368	11,423	24,724	39,437	279,620
Town of Mammoth	1,821	2,355	2,945	4,509	46,100	367	999	1,421	1,925	22,640
Town of Marana	2,035	4,618	8,966	13,677	71,760	390	608	1,257	2,462	83,100
Town of Queen Creek *	3,099	8,228	14,671	18,896	30,400	129	712	2,895	5,066	71,080
San Carlos Apache Tribe	-	-	-	-	5,210	-	3	4	4	-
Town of Superior	2,906	3,361	4,019	4,789	28,250	602	1,167	1,861	2,447	13,760
Town of Winkelman	321	451	477	516	6,330	3	33	57	56	410
Unincorporated County	92,406	107,020	130,098	163,756	1,339,780	6,518	11,398	16,670	22,694	378,040
<b>Total Pinal County</b>	<b>376,370</b>	<b>493,253</b>	<b>681,578</b>	<b>934,941</b>	<b>5,941,990</b>	<b>64,801</b>	<b>113,893</b>	<b>204,995</b>	<b>314,837</b>	<b>2,446,160</b>
<b>Gila County</b>										
City of Globe	7,532	7,578	7,977	8,092	**	3,847	3,870	4,074	4,133	**
Town of Miami	1,837	1,837	1,837	1,837	**	565	565	565	565	**
Claypool	1,538	1,539	1,540	1,541	**	330	330	330	331	**
Town of Payson	15,301	16,697	17,675	18,482	**	3,028	3,304	3,498	3,657	**
Town of Hayden	662	662	663	663	**	446	446	446	447	**
San Carlos Apache Tribe	4,038	4,118	4,174	4,220	**	44	45	46	46	**
Town of Winkelman	353	354	355	356	**	238	239	239	240	**
Unincorporated County	22,339	22,869	23,240	23,545	**	2,895	2,978	3,035	3,083	**
<b>Total Gila County</b>	<b>53,600</b>	<b>55,654</b>	<b>57,460</b>	<b>58,735</b>	<b>**</b>	<b>11,393</b>	<b>11,778</b>	<b>12,234</b>	<b>12,501</b>	<b>**</b>
<b>Total CAG Region</b>	<b>429,970</b>	<b>548,907</b>	<b>739,038</b>	<b>993,676</b>	<b>**</b>	<b>76,194</b>	<b>125,671</b>	<b>217,229</b>	<b>327,338</b>	<b>**</b>

\* Pinal County portion only

\*\* Not calculated

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FIGURE 5 – POPULATION DENSITY

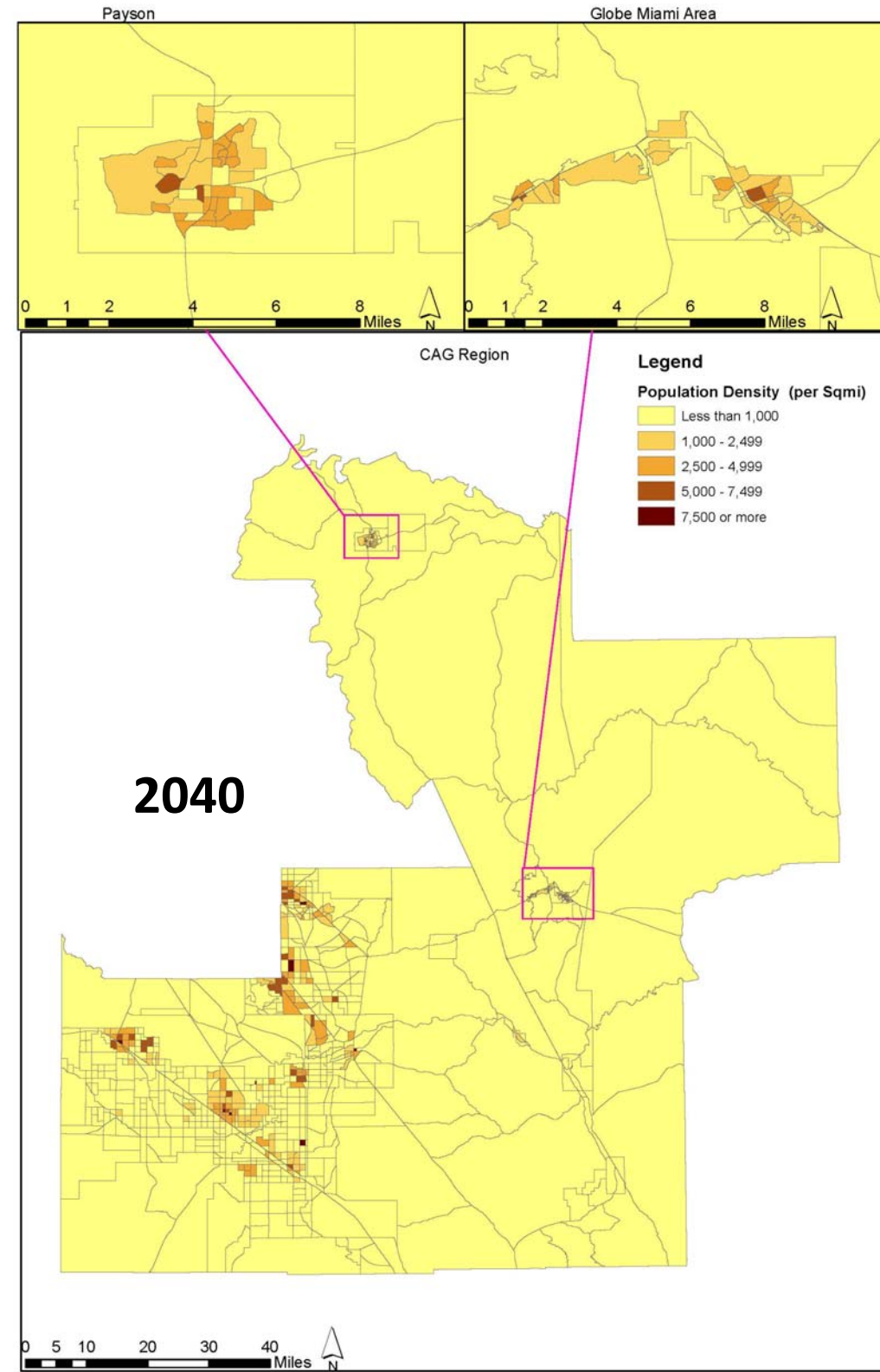
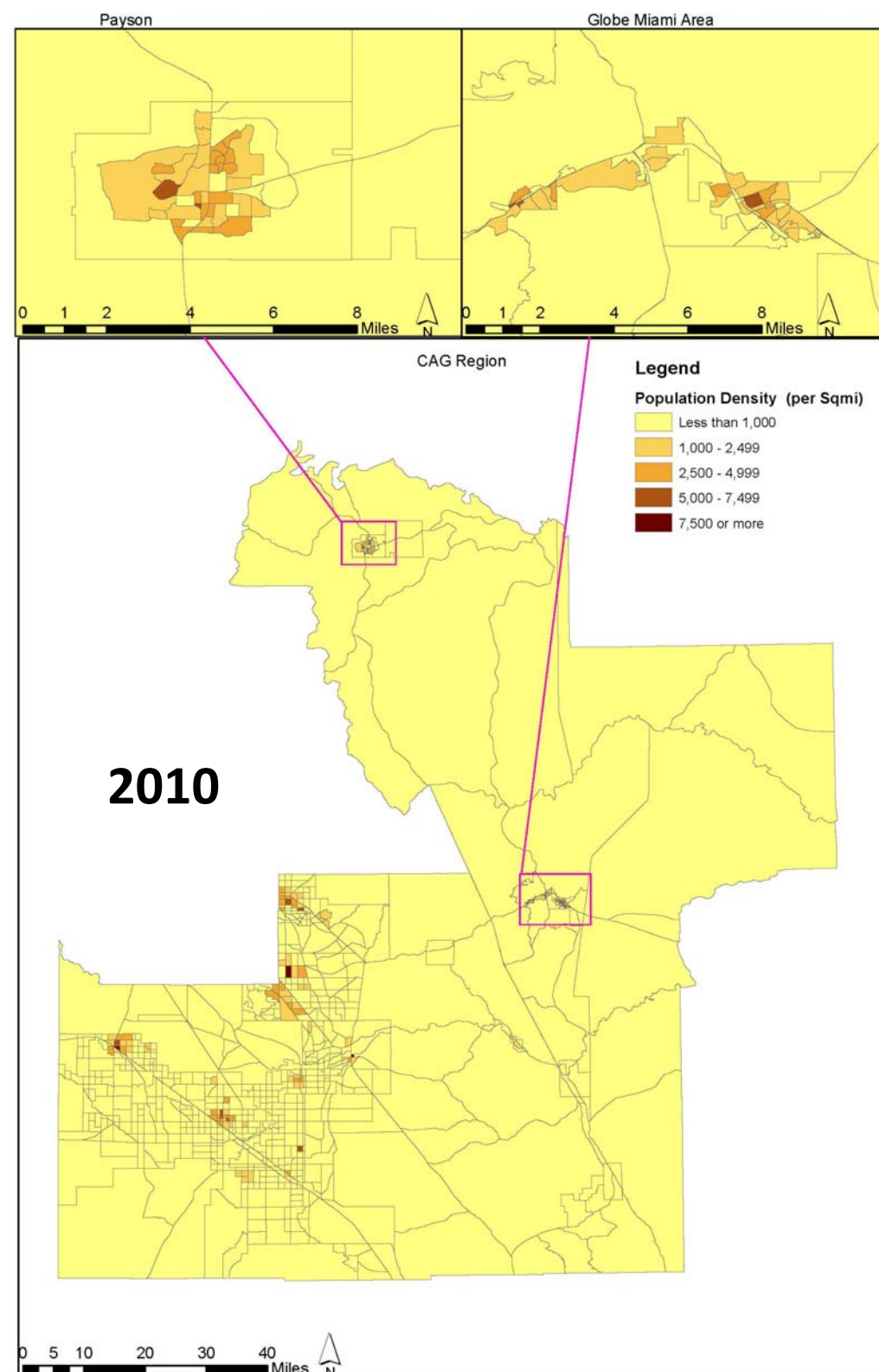




FIGURE 6 – EMPLOYMENT DENSITY

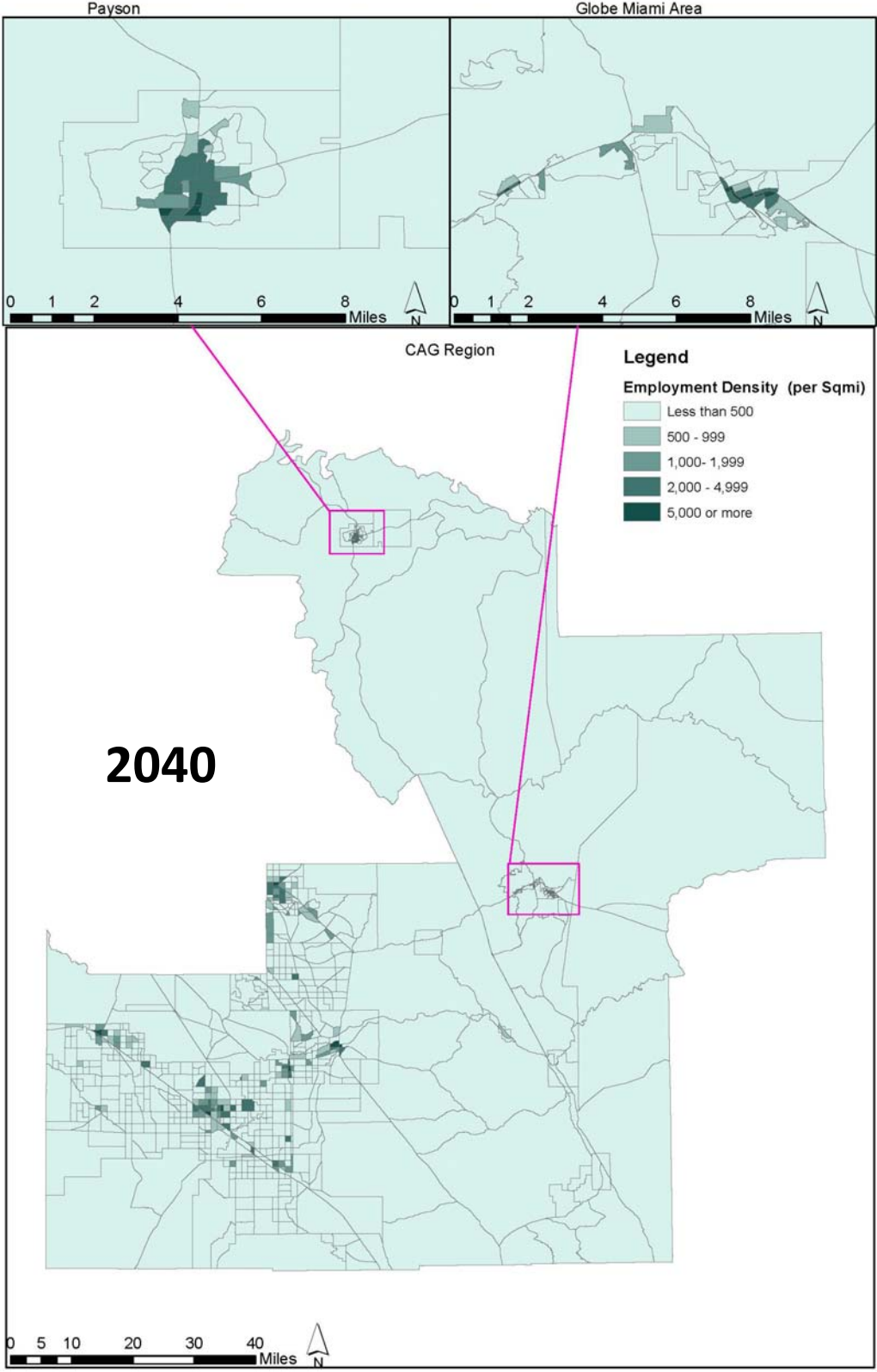
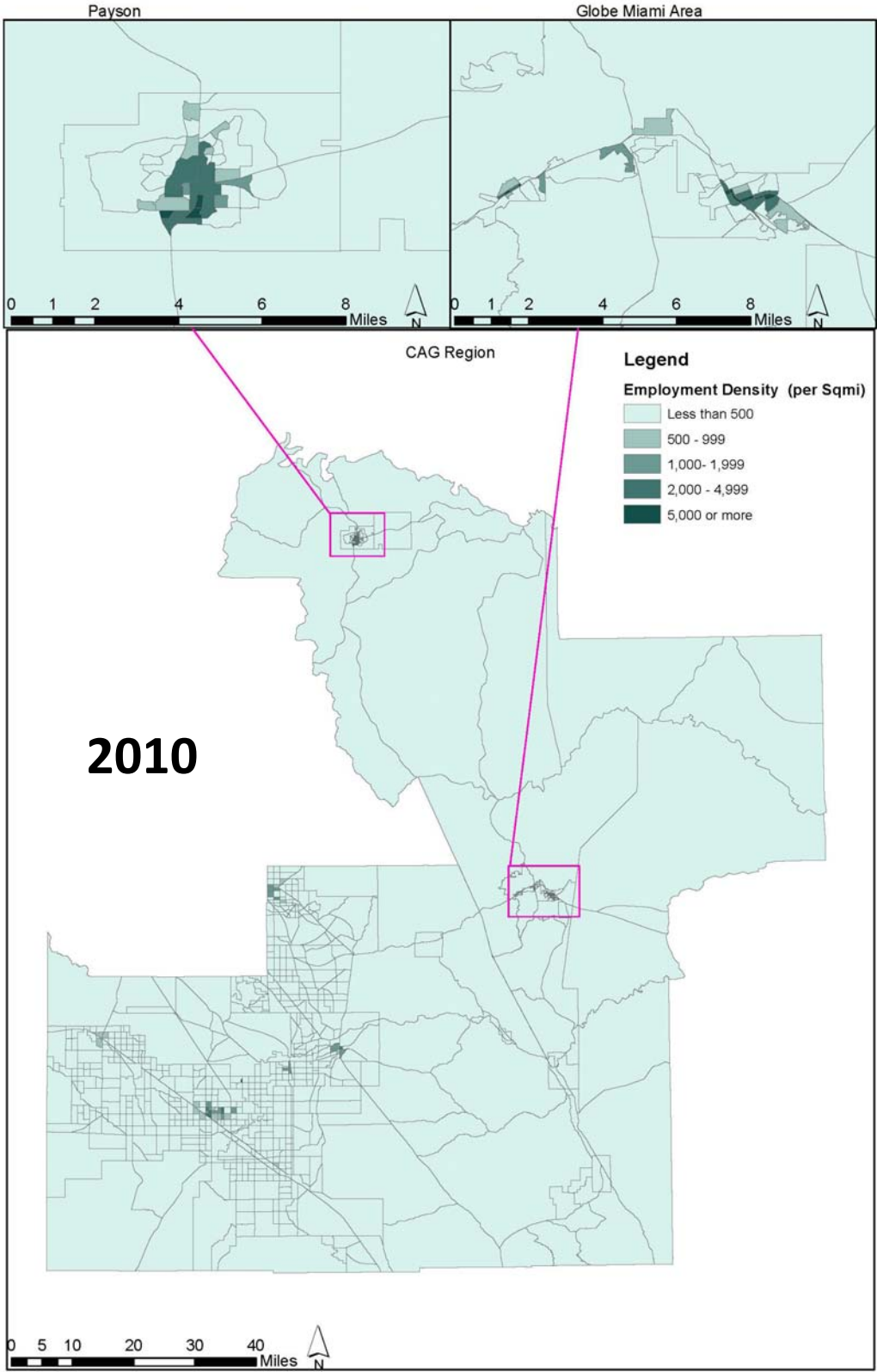
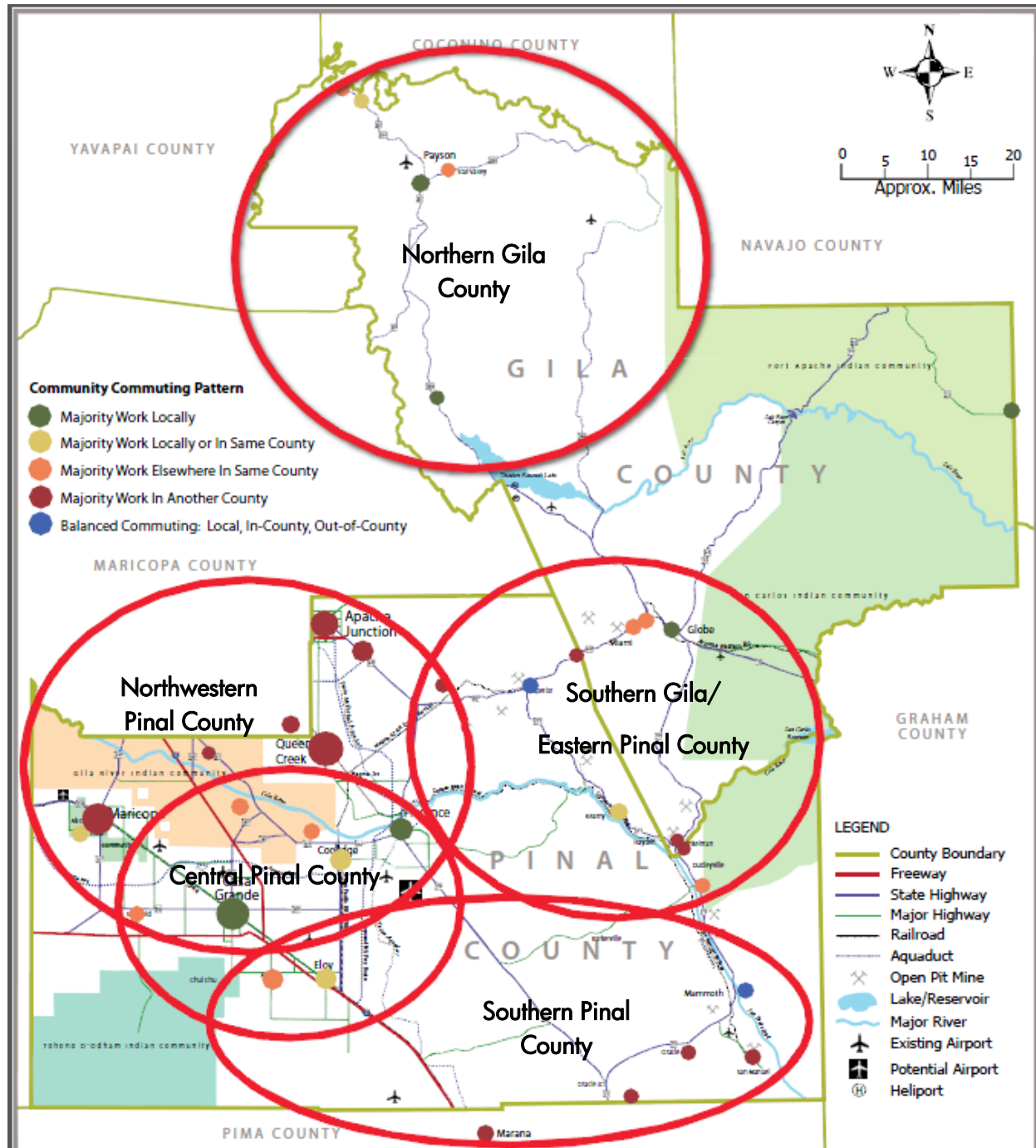


FIGURE 7 – ECONOMIC SUB-REGIONS ACCORDING TO COMMUTING RELATIONSHIPS



Source: Community-Specific Commuting Patterns in CAAG Regional Reports, *Investigating economic development, community development, workforce development & transportation planning topics in the CAAG Region*, "Employed Residents by Industry Broad Commuting Patterns," January, 2012.

Table 3  
Work Commutes and Travel Time

Worker Category/Mean of Transportation	Gila County		Pinal County		CAG Region		Arizona	
	Total	Percent Share	Total	Percent Share	Total	Percent Share	Total	Percent Share
Workers 16 Years and Over	17,969	100.0	128,604	100.0	146,573	100.0	2,694,999	100.0
Car, truck or van – drive alone	13,908	77.4	99,797	77.6	113,705	77.6	2,050,894	76.1
Car, truck, or van – carpool	1,725	9.6	16,590	12.9	18,315	12.5	318,010	11.8
Public Transportation (excluding Taxicab)	90	0.5	257	0.2	347	0.2	53,890	2.0
Walked	683	3.8	1,672	1.3	2,355	1.6	56,595	2.1
Other Means	629	3.5	2,572	2.0	3,201	2.2	70,070	2.6
Worked at Home	934	5.2	7,716	6.0	8,650	5.9	145,530	5.4
Mean Travel Time to Work (minutes)	20.8		31.3		30.1		24.6	

Source: U.S. Census Bureau, American Fact Finder, S0801, Commuting Characteristics by Sex, 2008-2012 American Community Survey 5-Year Estimates.

## CURRENT SERVICES

Except for regular route services provided in Coolidge (Cotton Express) and Globe/Miami communities (Cobre Valley Community Transit – CVCT), public transportation for the general public is notably lacking throughout the CAG Region. Communities, such as Apache Junction and Casa Grande, have grown rapidly and now are significantly larger than many Arizona communities that benefit from local transit service. Other than the Central Xpress Bus Route which connects Casa Grande, Coolidge, and Florence, there are no general public transportation services/connections between communities within the region that may be accessed by those who lack their own means of transportation. Although several important and useful transportation studies have been completed, improvements in both counties have focused mostly on roadways.

Specialized services accommodating seniors, persons with disabilities, and others with special needs are numerous and provide coverage over a large portion of the CAG Region's many communities. The City of Maricopa operates a demand responsive (DR) transit program, which is a shared-ride service for which reservations are required. The City of Maricopa Express Transit or "COMET" operates Monday, Wednesdays, and Fridays for the general public. In addition, round trip service is provided Tuesdays and Thursdays to Chandler Regional Hospital and Casa Grande Regional Hospital, respectively. Most of the region's specialized services are hampered by funding constraints that narrow service areas and limit the ability to meet the transportation needs of all recognized potential clients. Gila and Pinal counties do not have dedicated funding sources for public transit; so, providers must rely on a changing patchwork of federal, local, and private resources to continue operating.

## EXPECTATIONS FOR THE FUTURE

The *Arizona Rural Transit Needs Study* (May, 2008) was prepared to provide an objective, analytical basis for guiding long-term strategic decisions regarding the provision of rural transit service. The report identifies future potential demographic changes in each of the state's 15 counties. The demographic analysis focused on the projected changes in three population groups between 2005 and 2015. The results of the transit travel demand analysis are shown in **Table 4**. Clearly, a comprehensive, coordinated program of transit services is fully justified.





TABLE 4  
ESTIMATED RURAL TRANSIT DEMAND (ANNUAL TRIPS)

Area	Elderly (60 Years of Age and Older)		Disabled Population (Less than 60 Years of Age)		Low-Income Population (Under the Age of 60)		Annual Total	
	2007	2016	2007	2016	2007	2016	2007	2016
Gila County	111,365	144,412	24,923	27,614	157,161	174,127	293,450	346,153
Pinal County - Rural Only	419,194	952,786	99,351	182,489	687,134	1,331,301	1,205,678	2,476,576

Source: Table 3.2, Estimated Annual Rural Transit Demand from Arkansas Public Transportation Needs Assessment (APTNA) Method by County, 2007 and 2016, *Arizona Rural Transit Needs Study*, May, 2008.

## 2.2.2 PEDESTRIAN AND BICYCLE ACCOMMODATIONS

The essence of a multimodal transportation plan is that it integrates all travel modes beyond automobiles and trucks most often employed for the transport of goods and people. Non-motorized transportation modes, i.e., walking as a pedestrian and biking as a bicyclist, have been examined and incorporated into the RTP to create a complete transportation system. Numerous Scenic Byways in Arizona, established under the National Scenic Byways Program, have been identified by ADOT as appropriate for bicycle touring. Most of the region's roadways are rural in nature, and sidewalks and crosswalks are not typically provided along rural roadways. However, bicycle and pedestrian facilities are located within the communities of Globe, Miami, and Payson, and pedestrian crossings are becoming more common to enhance the safety of pedestrians. In addition, provisions for walking and bicycling along public roadways are in place in certain locations within the region.

## 2.2.3 FREIGHT TRANSPORTATION

The CAG Region's economic productivity is dependent on a transportation system that can handle goods efficiently and safely. Freight transport involves the networks and players that use a variety of methods, modes, and available information technologies to move raw materials and semi-processed and processed goods through regional, national and international markets. The movement of goods is conducted through multiple modes of transportation: air, pipeline, truck, and rail. Due to Arizona's unique location adjacent to Mexico - the world's 13<sup>th</sup> largest economy - and proximity to existing and planned southern trade routes serving the West Coast, the state is strategically located to serve increasing transcontinental freight activity. Thus, the potential for future major multimodal freight and logistics facilities in the CAG Region is promising relative to southern trade opportunities and expanding Union Pacific Railroad (UPRR) service along the Sunset Route, particularly in Pinal County. As the role of freight transportation becomes more critical, the ability of the CAG Region to take advantage of growth opportunities hinges on a connected and efficient freight network able to support the movement of goods between major activity centers through the statewide freight system.

## 2.2.4 AVIATION

Aviation facilities in the CAG Region have a broad range of operating parameters and design standards. Most airports are privately-owned and maintained for private use only. Most publicly-owned airports are open to the public; however, there are no commercial air carrier airports serving the region. Considerations for the future include reliever status for a proposed airport in the City of Maricopa. The State Aviation System Plan (SASP) concludes that "...with population and



business growth comes growth in aviation demand, so a future Maricopa Airport could be a key asset to the growing economy of Greater Phoenix.” The SASP also identifies the need to replace the Superior Municipal Airport. If implemented, the new airport’s future facilities and services would be guided by the SASP objectives for a General Aviation (GA)/Community Airport.

## 2.2.5 EXISTING ROADWAY NETWORK

The CAG Region has an extensive vehicle transportation network that facilitates the efficient movement of people and goods. The routes associated with this system provide linkages within and between jurisdictions, supporting inter-jurisdictional coordination which is vital for the economic viability of the region and its many communities.

Residents, commercial interests, industrial enterprises, even visitors of the CAG Region are heavily dependent on the State Highway System (SHS) for mobility and access to markets. Western and southern Pinal County are relatively well served by seven north-south state highway segments: SR 79/Pinal Pioneer Parkway, SR 87 (Sortel Road in Eloy and Arizona Boulevard in Coolidge), SR 287 (Arizona Boulevard in Coolidge), SR 347/Maricopa Road, SR 387/Pinal Avenue, and SR 587, as well as Interstate 10 (I-10). Opportunities for improving or adding capacity to five of these highways will involve additional coordination and collaboration with the Gila River Indian Community (SR 87, SR 347, SR 387, SR 587, and I-10), and the Ak-Chin Indian Community (SR 347) to assure successful future planning of the regional roadway network. There are five state highway segments (SR 84/Gila Bend Highway, SR 187, SR 238, SR 287/Florence Boulevard, and SR 387) plus I-8 supporting travel in the east-west direction, although travel distances are relatively limited. Opportunities for improving or adding capacity to SR 238 will involve additional coordination and collaboration with the Ak-Chin Indian Community. All of the highways provide critical regional travel linkages for the communities of Maricopa, Casa Grande, Eloy, Coolidge, Florence, Gila River Indian Community, Ak-Chin Indian Community, and the San Tan Valley.

The central and eastern portions of Pinal County are served by five north-south state highway segments (SR 77, SR 79, SR 177, SR 188, and SR 288) plus US-70. US-60 is the only major east-west highway through the central portion of the CAG Region. This highway serves the northern portion of Pinal County and the southern portion of Gila County, connecting the communities of Apache Junction, Gold Canyon, Superior, Miami, and Globe. SR 260, traversing the far northern portion of Gila County, is the only east-west highway serving the northern portion of the CAG Region. Access and mobility are severely limited in Gila County by the presence of Federal lands, Indian communities, and the extreme topography of the mountainous landscape. North-south travel through Gila County is accomplished via multiple highway segments (SR 77, US-70, and SR 188), connecting the communities of Winkelman/Hayden, Globe/Miami, Tonto Basin, Rye, Payson, and Pine/Strawberry. SR 87, which is coincident with SR 188 and SR 260 at various points, is the principal connection to the Phoenix metropolitan area for northern Gila County. Opportunities for improving or adding capacity to highway (Federal and State) segments in Gila County will involve additional coordination and collaboration with the U.S. Forest Service and the U.S. Department of Agriculture, as a large portion of the County lies within National Forest boundaries.

## FUNCTIONAL CLASSIFICATION

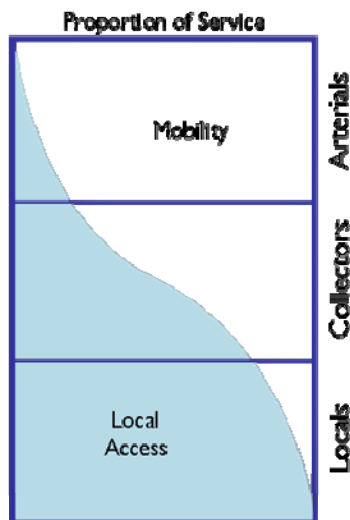
The concept of functional classification is used to describe the role of surface roadways according to the ability of the facility to accommodate travel. Most travel occurs via the roadway network, with each roadway or roadway segment facilitating the movement of traffic through the system. The concept of functional classification defines the role each particular roadway segment plays in the



system. The functional classification system provides a uniform evaluation of different levels of service provided by different facilities, recognizing both public needs and land access requirements.

The regional roadway network within the CAG Region generally is hierarchically structured into several functional classes. Roadways are assigned to one of several possible functional classifications within a general hierarchy according to the character of travel service each roadway provides, as depicted in **Figure 8** and described as follows:

FIGURE 8 – FUNCTIONAL CLASSIFICATION



- **Arterial Roadways** provide regional continuity and connectivity by supporting the highest level of service at the greatest speed for the longest uninterrupted distance. Thus, the arterial network offers continuous routes that typically accommodate long trips and heavy travel demand (i.e., high traffic volumes), and primarily serve interregional travel. The arterial roadway operations often will involve some degree of access control.

- **Collector Streets** support shorter distance trips, although in rural areas these roadways will accommodate a significant amount of long-distance travel. They play a key role in collecting traffic from local roads and connecting it with the arterial network. Collector streets typically have lower traffic volumes and speeds than arterial streets and offer greater access to roadside development.

- **Local Streets** serve travel associated with localized areas and neighborhoods with an emphasis on direct access to land uses developed on the abutting properties. These roadways usually are not conducive to high speed through travel.

A roadway's functional classification is primarily based on three factors or criteria: the number of lanes accommodating vehicular flow; the average daily traffic (ADT) volume; and the roadway segment's actual connecting function for the purpose of providing vehicular accessibility and mobility within a regional setting. The classification of roadways varies between and among communities according to the design and function of the roadway network. Plus, the State of Arizona has a separate functional classification scheme that differentiates between roadways in urban areas and roadways in rural areas, although it still relies on the same basic functional concepts.

The functional classification of the nation's and region's highways, roads, and streets is based on a common nomenclature that provides a consistently-defined roadway network across the country. In Arizona, classifications are determined by ADOT in conjunction with metropolitan and regional planning organizations, such as CAG, by employing criteria established by FHWA. FHWA ultimately must approve the classifications, which provide important inputs into the Highway Performance Management System (HPMS) and into the apportionment of federal funds to such programs as the National Highway System (NHS) and Surface Transportation Program (STP). This is a continuing process in which decisions are made on a systemwide basis by city, county, or state DOTs or MPOs as part of their continuing long-range transportation planning functions.

In this manner, the functional classification of roadway facilities is used to determine design standards, which serves as the basis for determining eligibility for Federal funding programs. Roads functionally classified as "local streets" are not part of the Federal-aid Highway System and improvement projects associated with these facilities normally are not eligible for federal



transportation funds. Roads outside of the Urbanized Area that are functionally classified as “Minor Collectors” also normally are not eligible for such funding. Minor Collectors within Urbanized Areas and all “Major Collectors,” “Arterials,” “Freeways/Expressways,” and “Interstates” are eligible for Federal transportation funds.

## DESCRIPTION OF ROADWAY FACILITIES

**Table 5** provides a summary of the major roadway network serving the CAG Region and the following paragraphs provide a brief summary of the characteristics of these roadways. **Figure 9** shows the location and extent of the major regional roadways serving the CAG Region.

### PRINCIPAL ARTERIAL ROADWAYS

**Interstate 8 (I-8):** I-8 extends 30.7 miles eastward from the Maricopa/Pinal County Line to its junction with I-10, approximately seven miles southeast of Casa Grande. I-8 facilitates the movement of people and goods between I-10 and San Diego California. I-8 has been constructed as a four-lane, divided, controlled-access highway.

**Interstate 10 (I-10):** I-10 connects the metropolitan areas of Phoenix and Tucson via a 63.7-mile stretch, extending in a northwest-southeast direction from the southern border of Pinal County north of Marana to the Chandler/Ahwatukee area in Maricopa County. I-10 is a true transcontinental highway, originating in Jacksonville, Florida, and terminating in Santa Monica, California. I-10 has been constructed through various segments as a four-lane or six-lane, divided, controlled-access highway.

**US-60:** A 118.5-mile section of this national highway traverses the CAG Region. US-60 is a freeway built to Interstate standards for approximately 5.4 miles east of the Maricopa/Pinal County Line. It becomes a principal arterial at this point and continues east 53.4 miles through Florence Junction (SR 79), where it turns to the northeast, passing through the towns of Superior and Miami to a junction with US-70 and SR 77 in the City of Globe.

**US-70:** A short 2.1-mile section of this route is classified as a principal arterial between its junctions with US-60 in Globe and its junction with SR 77 southeast of Globe. US-70 and SR 77 are coincident between these two junctions.

**SR 77:** A short, 2.1-mile section of this route is coincident with US-70 southeast of Globe (see above).

**SR 79:** A 6.3-mile section of this route through Florence is classified as a principal arterial.

TABLE 5  
SUMMARY OF KEY REGIONAL ROUTES

Roadway	Route Miles
<b>Interstate</b>	
Interstate 8	30.7
Interstate 10	63.7
<b>Freeway</b>	
US-60	5.4
<b>Principal Arterial</b>	
US-60	53.4
US-70	2.1
SR 77	2.1
SR 79	6.3
SR 87 (Pinal)	5.9
SR 87 (Gila)	25.8
SR 88	5.5
SR 260	40.6
SR 287	10.0
SR 347	12.3
SR 387	4.0
<b>Minor Arterial</b>	
US-60	66.5
US-70	19.4
SR 77	144.3
SR 79	52.1
SR 84	5.8
SR 87 (Pinal)	27.4
SR 87 (Gila)	17.7
SR 260	56.2
SR 287	12.3
SR 347	11.1
SR 387	4.4

Prepared by Wilson & Company, May, 2014.

Source: 21012 Arizona State Highway System Log as of 12/31/2012, Arizona Department of Transportation (ADOT) Multimodal Planning Division.

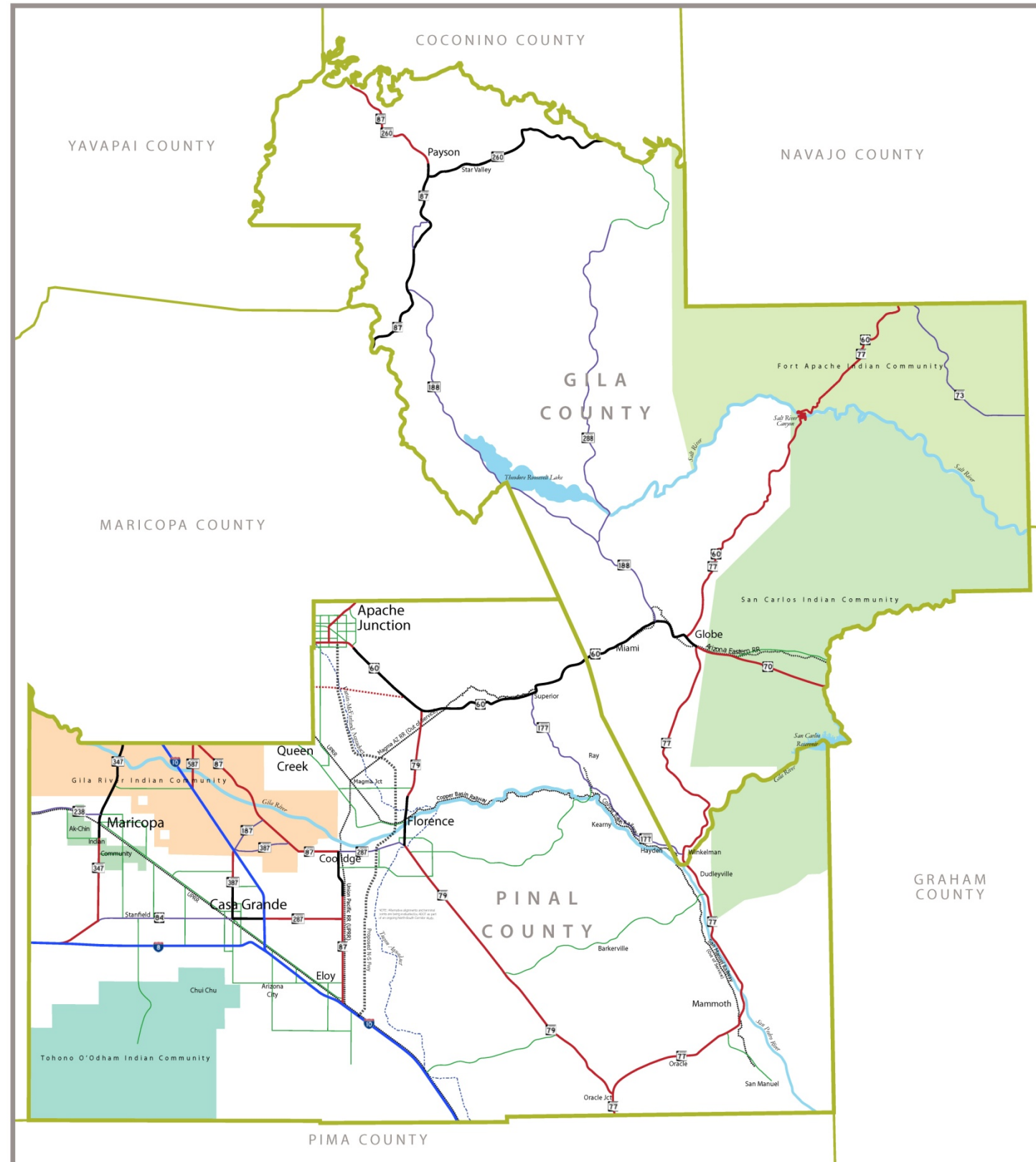




FIGURE 9 – MAJOR REGIONAL ROADWAY NETWORK



0 5 10 15 20  
Approx. Miles



## Functional Classification of Existing Major Regional Roadways

### LEGEND

#### General Map Features

- County Boundary
- - - - - Railroad
- - - - - Aqueduct
- Lake/Reservoir
- Major River

#### Roadway Facilities

- Principal Arterial - Interstate
- Principal Arterial
- Minor Arterial
- Non-Arterial State Highway
- Other Roadways





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**SR 87:** SR 87 serves as a principal arterial for the CAG Region in two locations. In Pinal County, a 5.9-mile section of SR 87 (coincident with SR 287, see below) runs through the center of Coolidge. A second section of SR 87 connects northwestern Gila County with Maricopa County to the southwest, running a distance of 25.8 miles from the Maricopa/Gila County Line to the north city limits of Payson. It continues north from Payson as a minor arterial (see below) coincident with SR 260, which also is a minor arterial north of Payson (see below).

**SR 88:** The 5.5-mile segment of this principal arterial extends from US-60 in Apache Junction to Maricopa/Pinal County Line northeast of Apache Junction.

**SR 260:** This state route is coincident with SR 87 for a distance of 2.1 miles from the north city limits of Payson to its split in the center of town. It continues as a principal arterial eastward to the Gila/Navajo County Line, a distance of 38.5 miles.

**SR 287:** This east-west route connects the City of Casa Grande with City of Coolidge and Town of Florence. It serves as a principal arterial in two locations. From its junction with SR 84 and SR 347 (see below), SR 287 runs 4.1 miles east to I-10, where it becomes a minor arterial as it continues east. A second section of the route classified as a principal arterial is coincident with SR 87 for 5.9 miles through the City of Coolidge (see above).

**SR 347:** This highway provides access to the Phoenix metropolitan area for residents and visitors of the City of Maricopa. The 12.3-mile principal arterial route, from the south city limit of the City of Maricopa north to the Pinal/Maricopa County Line, is part of a regional bypass that connects I-8 and San Diego with I-10 (5.1 miles inside Maricopa County). It should be noted that the 8.5 miles of this route directly north of the City plus the 5.1 miles to I-10 in Maricopa County passes through the Gila River Indian Community.

**SR 387:** This route originates in downtown Casa Grande at the junction with SR 84 and SR 287 (Florence Boulevard). The southern half of this 8.4-mile route (4.0 miles) serves as a principal arterial for the City of Casa Grande between Florence Boulevard and McCartney Road. North of McCartney, SR 387 becomes a minor arterial (see below). The route provides an important north-south connection between the City and I-10.

## MINOR ARTERIAL ROADWAYS

**US-60:** Two sections of this national highway serve as a minor arterial in the CAG Region. The first section is the first 5.4 miles inside Pinal County and the City of Apache Junction after exiting Maricopa County. The second section begins at the route's junction with US-70/SR 77 in Globe. It continues northeast from Globe, passing through the Tonto National Forest and the Fort Apache Indian Community to the Gila/Navajo County Line, a distance of 61.1 miles.

**US-70:** The 19.4-mile portion of this national highway classified as a minor arterial runs southeast from its junction with SR 77 southeast of Globe, passing through the San Carlos Indian Community, exiting into Graham County. Ultimately, this highway provides access via US-191 to I-10 west of Bowie in southeastern Arizona.

**SR 77:** This highway is an important north-south route through the CAG Region, serving eastern Pinal County and southern Gila County. Altogether, it extends approximately 145 miles from the Pinal/Pima County Line south of Oracle Junction to the Gila/Navajo County Line. It runs 79.8 miles from Pima County through the San Manuel/Mammoth area and Winkelman/Hayden area before it traverses the eastern edge of the Tonto National Forest and connects with US-70 south of Globe. It continues north coincident with US-70 for 2.1 miles (as a principal arterial, see





above), connecting with US-60 in Globe. It continues 64.3 miles northeast as a minor arterial coincident with US-60, passing through the Tonto National Forest and the Fort Apache Indian Community, reaching the Gila/Navajo County Line after passing through Salt River Canyon.

**SR 79:** SR 79 serves as a minor arterial for most of its length through Pinal County, with the exception of a short distance within the Town of Florence (see above). The southern section runs between the Pinal/Pima County Line and the south city limits of the Town of Florence, a distance of approximately 39.4 miles. The northern section runs a distance of 12.7 miles from the north city limits of Florence to a connection with US-60, referred to as Florence Junction. This highway was one of the primary connecting routes between Tucson and Phoenix prior to construction of I-10, and it provided access to Southern California via a connection with US-60. Today, although it is a two-lane roadway with significant physical constraints, it remains a viable alternative route between the state's two largest metropolitan areas. South of Florence, SR 79 has been designated the Pinal Pioneer Parkway, which provides a 35-mile scenic drive with a variety of desert landscapes and vistas.

**SR 84:** A 5.8-mile segment of this route is classified as a minor arterial, serving as a linkage between I-8 and SR 347, which extends northward through the City of Maricopa into Maricopa County.

**SR 87:** This route serves the CAG Region as a minor arterial in three locations. In Pinal County, it intersects with SR 287 east of Casa Grande and is coincident with SR 287 as it enters Coolidge from the south, running a distance of 2.8 miles. North of Coolidge, it separates from SR 287, running 24.6 miles northwest to Chandler at the Pinal/Maricopa County Line. In Gila County, SR 87 continues from the north city limits of Payson coincident with SR 260 for a distance of 17.7 miles to the Mogollon Rim and the Gila/Coconino County Line.

**SR 260:** There is one section of this route in Gila County that is classified as a minor arterial. Extending 17.7 miles across the northwestern corner of Gila County, SR 260 is coincident with SR 87 as a minor arterial between the north city limits of Payson and the Gila/Navajo County Line. The two routes provide key access to I-17 (SR 260) in the central portion of the state and I-40 (SR 87) in the northeast portion of the state. At the north city limits of Payson, SR 87/SR 260 is a principal arterial southward (see above).

**SR 287:** As noted above, this east-west route connects the City of Casa Grande with the City of Coolidge and the Town of Florence. There are two sections of this route that are classified as a minor arterial. The first section continues east 14 miles from I-10 to connect with SR 87, which runs north-south between Picacho and Coolidge. SR 287 continues 2.8 miles north coincident with SR 87 to the south city limits of Coolidge. The second section of the route extends 9.5 miles eastward from Coolidge to a junction with SR 79 south of Florence.

**SR 347:** The 11.1-mile section of this route south of the City of Maricopa provides direct access to I-8 via a connection with SR 84 (see above), completing the connection between I-10 in Maricopa County and I-8. Approximately two miles of this segment of SR 347 pass through the Ak-Chin Indian Community.

**SR 387:** The northern half of this 8.4-mile route (4.4 miles) connects the City of Casa Grande with I-10.

**SR 587:** This 6.4-mile roadway functions as a main route between I-10, approximately 17 miles north of the City of Casa Grande, and the southeastern portion of metropolitan Phoenix, where it junctions with SR 87 at the Pinal/Maricopa County Line.

## ROADWAY JURISDICTION

Jurisdictional control of the roadway system serving the CAG Region is shared by the counties with Federal agencies, local communities/municipalities, the State of Arizona, and some miscellaneous land holders. The distribution of jurisdictional control of the roadway system is presented in **Table 6**.

TABLE 6  
JURISDICTIONAL CONTROL OF CAG REGION ROADWAY SYSTEM

Jurisdiction	Roadway Miles	Share of Region's Roadway System
State of Arizona	794.77	13.5%
Federal Interstate Highway System (IHS)	94.41	1.6%
State Highway System (SHS)	700.36	11.9%
Gila County	346.49	5.9%
Pinal County	353.87	6.0%
Counties	2,759.26	47.0%
Gila County	477.12	8.1%
Pinal County	2282.14	38.9%
Local Communities and Municipalities	1,197.29	20.4%
Gila County	191.98	3.3%
Pinal County	1,005.31	17.1%
Federal Agencies*	1,120.02	19.1%
Total Region	5,871.34	100.0%

\* For example: Bureau of Indian Affairs (BIA), the Bureau of Land Management (BLM), the National Forest Service (NFS), and the National Parks Service (NPS).

Source: Table 25, Comprehensive Economic Development Strategy (CEDS), Central Arizona Governments (CAG), 2007.

## 2.3 LONG-RANGE ISSUES, OPPORTUNITIES, AND CONSTRAINTS

There are a number of matters facing the CAG Region that influence the form and function of the regional transportation system. Several long-range issues, opportunities, and constraints or challenges have been identified that reflect, in a context-sensitive manner, the various modal needs of individual communities as well as the region as a whole.

### LAND OWNERSHIP

Not only are the incorporated communities very different in size and orientation; each also offers individual opportunities and constraints relative to establishing a long-range, integrated transportation system for the CAG Region. The RTP recognizes that identification of significant additions to the area roadway network will be challenging, as the majority of the undeveloped land in the CAG Region is state- or federally-owned. Plus, transportation corridors are severely constrained by the area topography, particularly in eastern Pinal County and all of Gila County. Land ownership is divided among numerous public and private entities, each with a different stake in transportation decision-making and each representing a different set of criteria affecting that decision-making.

The generalized land ownership pattern in the CAG Region is shown in **Figure 10**. It is clear from **Figure 10**

The vast majority of the land area of Gila and Pinal counties is controlled by Federal agencies.

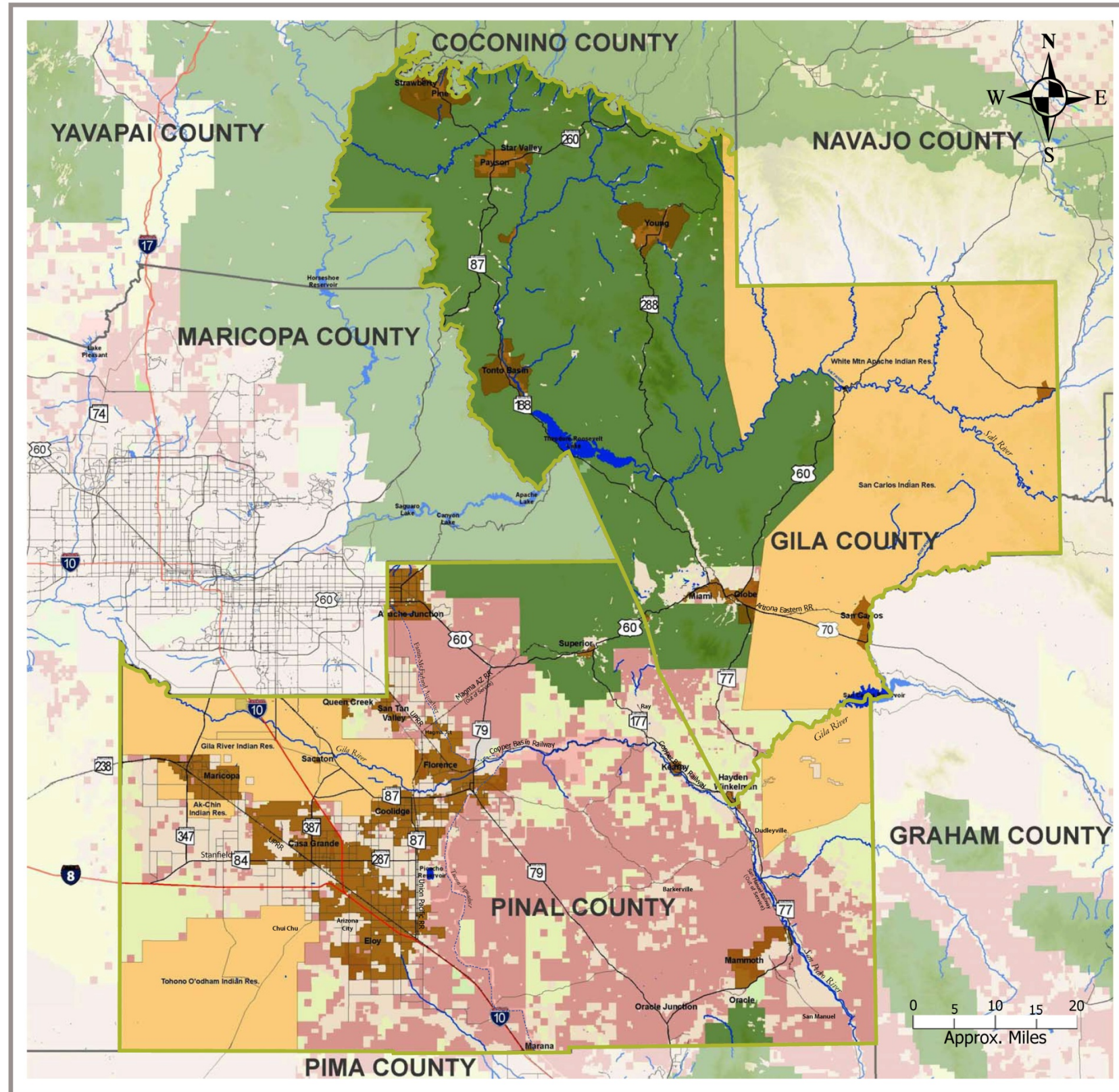


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FIGURE 10 – GENERALIZED LAND OWNERSHIP











## Generalized Land Ownership

### LEGEND

#### General Map Features

-  County/CAG Boundary
-  Major Regional Roadways
-  Other Roadways
-  Railroad
-  Aqueduct
-  Lake/Reservoir
-  River/Watercourse

#### Land Ownership/Jurisdiction

-  City, Town, or Unincorporated Community
-  Indian Community
-  US Bureau of Land Management
-  US Bureau of Reclamation
-  US Forest Service
-  Military
-  State Park
-  State Trust Land
-  Private

### Vicinity Map





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that the vast majority of land in Gila and Pinal counties is controlled by Federal agencies (US Forest Service, US Bureau of Land Management, and US National Park Service). Also, an important consideration with respect to land ownership and improvements to or new transportation services is the Indian community land held under trust of the Federal Government for the Ak-Chin Indian Community, Gila River Indian Community, San Carlos Apache Indian Community, Fort Apache Indian Community, and Tohono O'odham Nation. In addition, roughly 44 percent of eastern Pinal County and a small area of southwestern Gila County are under the control of the Arizona State Land Department (ASLD), which holds the lands in trust for the sole purpose of generating revenues for 13 State Trust land beneficiaries.

## ADJOINING REGIONAL INFLUENCES

The commuting characteristics of the CAG Region (noted earlier) are influenced by the growth dynamics of the two largest metropolitan areas in the state: Phoenix and Tucson. The inevitable growth of Phoenix and Tucson and manifestation of the Arizona Sun Corridor megapolitan area represents a definitive influence on the CAG Region, particularly Pinal County.

## UNDER-SERVED POPULATIONS

The federal transportation planning process requires that all citizens, regardless of race, color, religion, income status, national origin, age, gender, disabilities, marital status, or political affiliation have an equal opportunity to participate in CAG's decision-making process. Each of these groups has unique needs that can create constraints on transportation infrastructure projects. Establishing individual contacts and developing trusted relationships provides a foundation for creating a long-term transportation improvement plan that will serve several generations.

## ONGOING PLANNING IN GILA AND PINAL COUNTIES

Over the years, the two counties and some communities of the CAG Region independently have developed plans to guide transportation and community development. Although some aspects of these plans may conflict with the overall needs of the CAG Region, many elements represent significant achievements that can be foundational for the RTP. The Regionally Significant Routes for Safety and Mobility (RSRSM) Study completed by Pinal County is a good example. The outcome of this study was a partnering approach toward transportation planning involving federal, state, county, local, Native American communities, and private stakeholders. All affected jurisdictions passed resolutions in support of the results of this planning effort. Still, it was necessary to revisit and revise some elements of this plan in light of later studies by CAG, MAG, and ADOT, which shed more light on the transportation needs of Pinal County and Central Arizona.

A few area studies have been conducted for jurisdictions in Gila County, including the Globe-Miami urban area in southern Gila County and the Town of Payson in Northern Gila County. The recently completed Gila County Transportation Study, sponsored through ADOT's Planning Assistance for Rural Areas (PARA) Program, had the principal purpose of updating the Gila County's Small Area Transportation Plan published in 2006. This new study identifies the most critical transportation infrastructure needs within unincorporated areas of Gila County. It does not, however, address roadways on the SHS, although connectivity with the SHS has been reviewed. This study recommends a program of improvement projects to address anticipated needs and provides a guide for community development, capital improvement programming, and project implementation. One of the more notable transportation issues identified in Northern Gila County concerns the need for an alternate route around Payson and Star Valley to the southeast.



Other examples of recent studies are the Eastern and Central Arizona Regional Framework studies conducted by ADOT, which included examination of the multimodal transportation needs in Gila and Pinal counties. However, each study gave focus only to long-range transportation needs of the SHS, roads of regional significance, and public transportation based on a planning horizon to the Year 2050. This RTP represents a rational framework for coordinating ongoing and future development of all major transportation corridors in the CAG Region to aid in preserving needed right-of-way.

## 2.4 ECONOMIC DEVELOPMENT AND TRANSPORTATION

While all economic sectors depend on infrastructure, CAG's economic profile makes it especially reliant on a sound transportation network for regional sustainability. The relationship between transportation infrastructure investments and the economy is depicted in **Figure 11**. For example, the extensive activities of the mining sector require roads, bridges, and railroads that can readily support heavy loads. The equally vital tourism industry also is dependent on a reliable and safe transportation system. Visitors want to be assured that they can get around quickly, safely, and comfortably. In addition, the e

fficiency of the I-10 corridor, which supports the movement of interstate and intrastate travelers and trucking through central Pinal County, is a critical backbone facility that must be preserved.

The CAG Region is also unique because of the diversity of economic sectors and influences within Gila and Pinal counties. As noted earlier, Pinal County is strategically located in the central portion of what has become known as the Arizona Sun Corridor. Most experts agree the two large metropolitan areas – Phoenix and Tucson – eventually will meld to become the core of a large megapolitan area. The area seemingly will extend from Prescott/Yavapai County in the north to Nogales/Santa Cruz County in the south. Many local economies in Pinal County are closely linked to those of the Phoenix and Tucson metropolitan areas and, therefore, will be heavily influenced by the dynamics of growth in the Arizona Sun Corridor.

In contrast, the eastern portion of Pinal County and Gila County, dominated by hills and mountainous terrain, is an area heavily dependent on the mining industry and recreational pursuits. Although significant growth is expected to occur in the SR 77 corridor as the Tucson metropolitan area continues to expand, this area will remain largely rural in character. Gila County, specifically, has two very different social and economic orientations. A large segment of southwestern Gila County and eastern Pinal County are heavily oriented to mining activities located in San Manuel,

FIGURE 11 – RELATIONSHIP BETWEEN TRANSPORTATION INFRASTRUCTURE AND THE ECONOMY



From: Freight Management and Operations, FHWA, Appendix A, Economic Effects of Transportation: The Freight Story, January, 2002.



Mammoth, Winkelman/Hayden, Superior, and Globe/Miami. The remainder of Gila County, but primarily the Payson area, reflects a forest/recreational (summer and winter) culture of the “Rim Country.”

Taken as a whole, the CAG Region offers a notable range of social and economic opportunities. Dynamic growth of the Arizona Sun Corridor is expected to heavily influence growth in Pinal County. Although, the Globe/Miami urban area is expected to be influenced by this growth, mining and a robust tourism industry supporting parks and recreational areas are expected to remain dominant in Gila County. These activities will provide high levels of employment for the region’s residents, but not expand significantly. **Figure 12** provides a glimpse of the CAG Region of the future, identifying five distinct sub-regions, key activity centers, and prominent transportation features supporting growth and development.

## 2.5 TRAVEL DEMAND MODELING

Travel demand modeling is an important tool for developing a long-range transportation plan. It is the basis for predicting future traffic flows associated with a future roadway network. Excessive traffic volumes may indicate deficiencies, while low traffic volumes may indicate unused or underused capacity. Travel demand modeling is largely governed by the spatial distribution of employment and population. In order to effectively look at this distribution, the study area (in this case the CAG Region) is broken up into traffic analysis zones (TAZs). A variety of socioeconomic data is developed for each TAZ. The exact information varies depending on the model being used, but some examples include dwelling units (DUs), number of residents, number and types of jobs, income level, and number of students enrolled in schools. Each TAZ is allocated DUs, population, and employment representing existing and future year conditions, based on current and anticipated land use and development patterns. Each TAZ then represents the location of varying magnitudes of trip origins and trip destinations.

One of the principal activities during preparation of this CAG RTP was development of a unified Subregional Travel Demand Model that reliably reflects the CAG Region and the socioeconomic interaction of its various communities. The model is compatible with the statewide Arizona Travel Demand Model (AZTDM), yet sufficiently detailed to permit reliable forecasting of travel demand in the region. The TAZ structure in Pinal County had been fully integrated with that of neighboring Maricopa County through previous regional. In contrast, three different TAZ structures had been previously established to support specific travel demand modeling efforts for communities in Gila County. The TAZ boundaries of these modeling structures were either too broad or too detailed for incorporation in a regional model that could be integrated successfully with the statewide AZTDM. A manageable TAZ structure was required that integrated the County, Payson, Globe-Miami, and other communities, while respecting previous works represented by the statewide modeling effort and the previous studies.

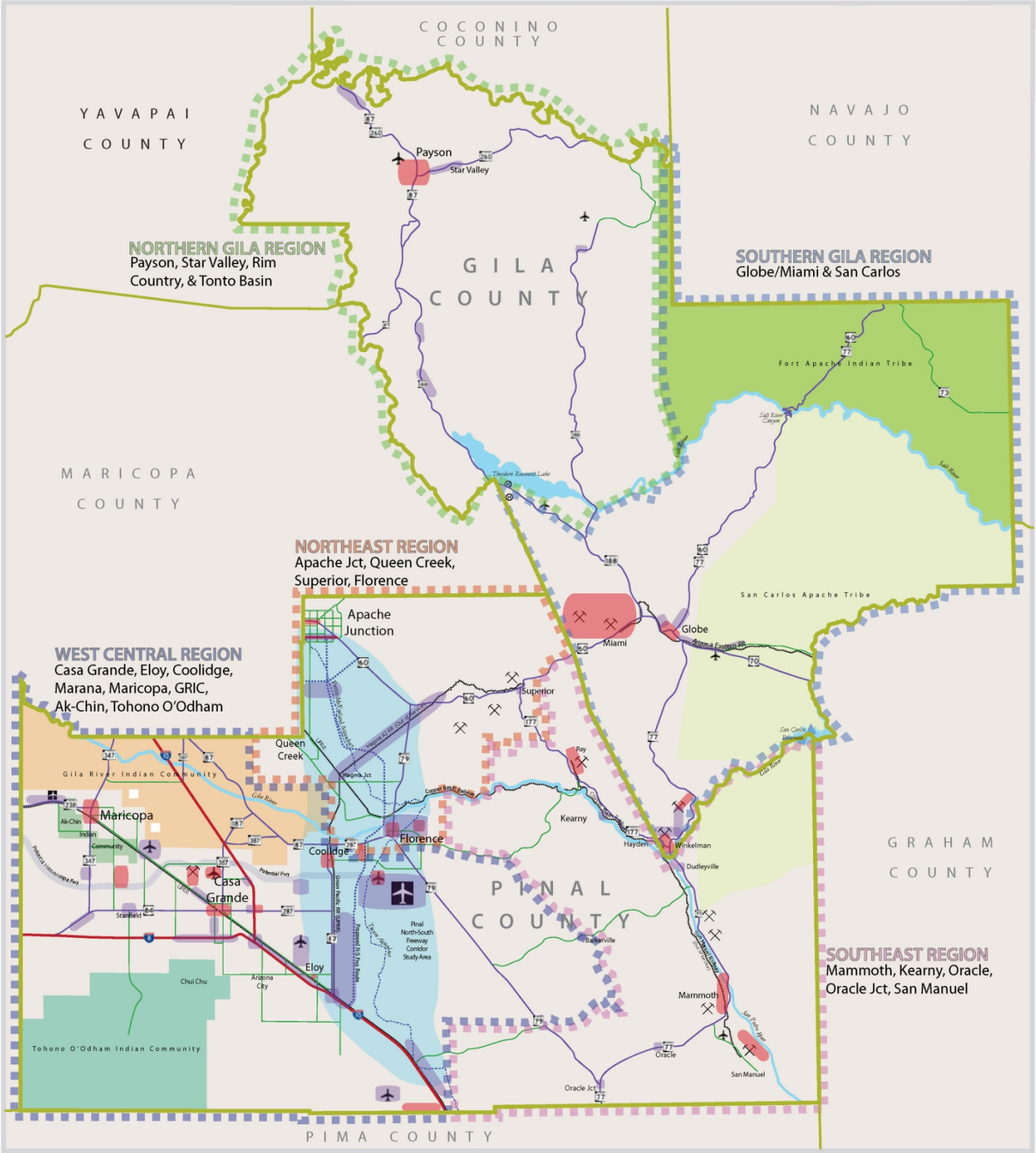
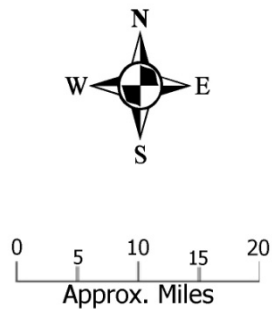
To create a new Gila County TAZ structure for use with a CAG Subregional Travel Demand Model, a review of the different existing TAZ boundaries was conducted. The TAZ boundaries established for the previous modeling efforts were overlaid on the existing roadway network and 2010 census tract boundaries using the ArcGIS mapping platform. An integrated TAZ structure for Gila County and its communities was created by redefining/realigning the TAZ boundaries. In urban areas, local planning efforts had developed smaller TAZs to more effectively account for development densities, and these were assembled to form new larger TAZs for this regional planning effort. Discretion was used in combining TAZs to assure consistency with community development patterns and the original



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FIGURE 12 – ACTIVITY CENTERS



# Activity Centers

## LEGEND

### General Map Features

- County Boundary
- Lake/Reservoir
- Major River
- Open Pit Mine

### Roadways & Transportation Infrastructure

- Freeway
- State Highway
- Major Highway
- Railroad
- Aqueduct
- Existing Airport
- Potential Future Airport
- Heliport

### Employment Centers

- Existing
- Future

### Cities, Towns, & Unincorporated Communities

- |             |   |
|-------------|---|
| Barkerville | Less than 1,000 Population - Unincorporated |
| Hayden      | Less than 1,000 Population                  |
| Mammoth     | 1,000-5,000 Population                      |
| Coolidge    | 5,000-15,000 Population                     |
| Payson      | 15,000-30,000 Population                    |
| Maricopa    | Greater than 30,000 Population              |





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focus of TAZ formation – census tracts and major roadways. The resulting TAZs were renumbered to create a unified TAZ structure for the entire county. Following adjustment and consolidation of the County's TAZ structure, it was necessary to reallocate the DUs, population, and employment information to correspond to the new TAZs. The distributions defined by the previous studies were adopted and adjusted to reflect the ADOA County control total. In this way, the OPES projection served as the control total for Gila County, and the previous projections of growth for the county and urban areas, as presented in the previous studies, were aligned with the state-established County total.

The CAG staff and the Project Team then worked with ADOT to make the latest generation of the AZTDM more accurate with respect to the CAG Region. The model was reviewed to confirm all planned projects were included in long-range network assumptions. The revised network and reallocated TAZ data then were used to produce an updated forecast of long-range travel demand and network performance in the CAG Region. This updated model run provided the foundation for identifying transportation deficiencies and developing multimodal infrastructure improvement alternatives to address those deficiencies.



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**SECTION III**  
**TRANSPORTATION**  
**ELEMENTS**



## 3.0 NON-MOTORIZED TRANSPORTATION ELEMENT

The surface transportation infrastructure of the CAG Region today consists of roads and railroads. Although railroads are dedicated to only one form of transport operations – trains, the roads are multidimensional in both character and function. Although, historically, roads were developed primarily for vehicular (automobile and truck) traffic, today's demands for alternative travel means are leading communities to the use of roads for multimodal surface transportation. In most cases, local streets include sidewalks for pedestrian mobility and more and more streets are being developed and redeveloped to include bicycle lanes and bicycle routes. In addition, separate facilities are being developed for use by bicycles and pedestrians (e.g., multi-use paths) to provide safer travel environments for these alternate modes. Nevertheless, few regional roads or corridors, which are not often used by pedestrians, do not include adequate treatments to accommodate bicycles. The non-motorized transportation element is focused on identifying physical facilities and/or appropriate design treatments to make pedestrian, bicycle, and other non-motorized modes safer and more secure in the CAG Region.

### 3.1 BACKGROUND

The CAG Region has an extensive vehicle transportation network that facilitates the movement of people and goods within and through Gila and Pinal counties. Routes associated with this network provide linkages between and among jurisdictions, facilitating inter-jurisdictional social and economic interaction. Today, this network – the roots of which go back to the middle 19<sup>th</sup> Century – is principally comprised of two components. The first component, the modern roadway network, which originally manifested as early wagon trails, has been developed through a coordinated effort of the state, counties, and local communities. This system of travel accounts for a vast majority of personal and commercial trips made by residents and visitors of the CAG Region. Significantly, a large share of freight shipments to wholesale markets, retail stores, restaurants, and other enterprises arrives by truck on this roadway network. The second component of the transportation network is the railroad system, which provides direct transcontinental freight service and has been especially important to the mining, ranching, and farming enterprises of the CAG Region.

### Today's Transportation System Infrastructure



### 3.2 WHAT DOES THE FUTURE HOLD?

This multimodal transportation plan is focused on establishing the framework for an integrated network of all travel modes beyond automobiles, trucks, and trains – the traditional modes employed for transporting goods and people. Non-motorized transportation modes include walking as a pedestrian, riding a bicycle, skateboarding, skating, and even movement via a wheelchair (Note:

Motorized assistance for persons with disabilities is considered non-motorized with respect to pedestrian and shared-use facilities). Travel opportunities in the CAG Region via these non-motorized modes have been examined and incorporated into the RTP in order to create a complete transportation infrastructure to accommodate all modes of travel.



A large portion of the Region's roadways are rural in nature; therefore, sidewalks and crosswalks typically do not exist nor are there many definitive bicycle lanes or paths to provide separation from vehicular traffic. Pedestrian and bicycle facilities are more common in the urbanized communities, such as Casa Grande, Coolidge, Globe-Miami, Maricopa, and Payson. Some communities have developed multiuse or shared use pathways. There are also trails and trail systems, routes, and access facilities for hiking, bicycling, equestrian, and other

recreational uses. Many of these trails follow natural drainage paths linking up along a major travel artery. Other trail corridors are oriented to major roadways such as I-8, SR 84, SR 347, the Maricopa-Casa Grande Highway, and other major arterial routes. In addition, numerous Scenic Byways in Arizona, established under the National Scenic Byways Program, have been identified by ADOT as appropriate for bicycle touring, and there are an abundance of trails for pedestrians/hikers associated with the large amount of public land in the region.

Consistent with the US Department of Transportation (USDOT) policy, accommodations for bicycles and pedestrians must be integrated into CAG RTP policies and strategies, performance measures and prioritization, revenue and infrastructure, and sustainability and economic development goals. Alternative modes plans, such as the *Pinal County Comprehensive Plan*, the *Casa Grande Trails Master Plans*, and multimodal elements of other local city and town plans, serve as guides for some portions of the CAG Region. Needs and deficiencies identified in statewide plans, such as the *Arizona Bicycle and Pedestrian Safety Action Plan*, and the ADOT *Statewide Bicycle Plan*, also must be considered. Planned and recommended improvements will enhance walking and bicycling opportunities.

Walking and bicycling should be considered as equals with other transportation modes. People of all ages and abilities are considered when planning and designing facilities.

*USDOT Policy Statement on Bicycle and Pedestrian Accommodation, 2010*

### 3.3 STATUS OF NON-MOTORIZED TRANSPORTATION IN ARIZONA AND THE CAG REGION

Arizona, because of its climate and wide open spaces, is recognized as a great place for bicycling and walking. The League of American Bicyclists ranks Arizona as 15<sup>th</sup> in the Nation in its annual (2014) state rankings. Furthermore, nine Arizona communities are designated by the League as a Bicycle Friendly Community: Tucson and Scottsdale each have a gold rating and Tempe and Flagstaff have silver ratings. In addition, many miles on the State Highway System in the CAG Region have shoulder widths suitable for bicyclists (**Figure 13**).



FIGURE 13 – STATE HIGHWAY ACCOMMODATIONS FOR BICYCLE TRAVEL



## Legend

- State Line
- County Line
- Rivers & Streams
- Lakes & Reservoirs
- National Park
- State Park
- Campsite
- Point of Interest
- National Monument
- Tourist Information
- Road Area
- Population less than 1,000
- Population greater than 1,000
- Distance Between Points

## Route Characteristics

- Effective Shoulder Width = 4 ft or greater
- Effective Shoulder Width < 4 ft
- Rumble Strip with Effective Shoulder Width < 4 ft
- Bridge with Effective Shoulder Width < 4 ft
- Low Traffic Volumes
- Medium Traffic Volumes
- High Traffic Volumes
- Bicycles Prohibited
- Dirt Roads
- Interstate Frontage Roads
- Other Roads
- Regionally Significant Routes (Non-ADOT)
- Extreme Grade
- Moderate Grade
- Varied Grade



0 20 40  
Approx. Miles

Source: Cycle Arizona, "Bicycle User Map," Arizona Department of Transportation at <http://www.azbikeped.org/>.





While communities in the CAG Region have not yet achieved designation as a Bicycle Friendly Community, it is apparent that accommodation of bicycle and pedestrian travel and the safety of non-motorized transportation modes, as a whole, is gaining in importance in the region. Communities recognize that safe, connected, and comfortable bicycling and walking facilities should be an integral component of the overall transportation system. Bicycling and walking facilities offer several benefits to cities and towns in the CAG Region, including:

- **Improving the safety of all roadway users** – Roadway design elements, such as signalized pedestrian crossings, raised medians, and pedestrian crossing islands, help to reduce crashes, injuries, and fatalities. Designated bicycle lanes and bicycle routes aid both bicyclists and motorists in recognizing the co-operational character of roadways, making them more aware of the presence of the other operating modes.
- **Contributing to healthy communities** – Community designs that incorporate distinct, even separated, pedestrian and bicycle facilities encourage greater every day physical activity, such as walking and bicycling. Thus, they are more apt to benefit from the active lifestyles of local residents.
- **Creating economic opportunity** – Targeted transportation investments can improve access to jobs, education, and shopping. Strategically located bicycle lanes and routes that are safe and convenient can aid in stimulating bicycle use for multiple activities, enhancing the economic efficiency of a community.
- **Supporting efficient forms of transportation** – Communities that provide transportation options through development of alternative modes reduce the need for residents to drive. Reduced use of automobiles translates into less air pollution from vehicle emissions and less congestion on roadways.

The *Gila County Comprehensive Plan* states:

“Alternative modes of transportation should be strongly encouraged to play a larger role in the transportation system. The vast majority of trips are currently by automobile. Other modes for a balanced circulation system include bicycling, walking, and transit alternatives with efficient placement of future employment and services.”

The Non-Motorized Element summarizes the current state of bicycling and walking facilities in the CAG Region, opportunities, near-term programmed improvements/enhancements, and recommended strategies/improvements.

### 3.3.1 GILA COUNTY NON-MOTORIZED TRANSPORTATION SYSTEM

#### SUMMARY OF CURRENT STATUS – BICYCLE FACILITIES

##### GILA COUNTY

There are very few formally designated bicycle facilities on Gila County roads. Fairgrounds Road, northeast of Globe, has a wide shoulder that is marked as a bicycle lane. However, numerous scenic byways in Arizona have been established under the National Scenic Byways Program. These routes have been identified by ADOT as appropriate for bicycle touring. The designated roadways offer the opportunity to enjoy the state’s scenic wonders. Three byways are located within the CAG Region:

- **Desert to Tall Pines Scenic Road:** SR 288 is a National Forest Scenic Byway straddling the Tonto and Apache-Sitgreaves National Forests. This 76-mile route travels north-south through the Sierra Ancha Mountains from the junction with SR 260 to SR 88.



- **Gila-Pinal Scenic Road:** This route extends through the Pinal and Superstition Mountains, the Ponderosa Pine Forest (Tonto National Forest), Picketpost Mountain and Apache Leap. The 26-mile route follows US-60 from Florence Junction through the Sonoran Desert life zone at the desert floor and moves upward through four biotic communities toward the Town of Miami.
- **Apache Trail Historic Road:** This 41.5-mile Byway follows SR 88 from Apache Junction (near the Salt River) to SR 188. This historic road passes through some of the most rugged terrain in Arizona and past three lakes, before reaching Roosevelt Dam and Roosevelt Lake. Land surrounding the road rises steeply to the north to form the Four Peaks Wilderness Area, and to the south to form the Superstition Wilderness Area.



In addition, the Adventure Cycling Association has designated a touring route through Gila County. The route, titled “Southern Tier Route” follows US-60 through Globe and Superior, then follows US-70 east to New Mexico. It should be noted that there are identified constraints on this route, including passage through the Queen Creek tunnel between Globe and Superior.

## PINAL COUNTY

According to the Pinal County Comprehensive Plan, provisions for walking and bicycling along public roadways are available in certain locations and some County communities have multiuse pathways, such as the Greenway in Florence. Bicycles are permitted on all roads on the State Highway System in the county except I-10 (please refer to **Figure 13**).

Cross-sections for Pinal County's Principal Arterial roadways typically include 110 to 150 feet of right-of-way that accommodates six vehicle traffic lanes separated with a raised 14-foot median. The cross-section includes bicycle lanes up to 6.5 feet in width measured to back of curb adjacent to the outside lanes of the travel way, and detached sidewalks outside the travel way up to eight feet in width with a 5-foot separation measured from the back of curb or 10-foot attached sidewalk measured from the back of curb. The Minor Arterial cross-section typically includes 110 feet of right-of-way accommodating four vehicle traffic lanes. The cross-section may include a 14-foot painted or raised median or a two-way, center left-turn lane, which provides a fifth vehicle traffic lane. It also includes the same bicycle and pedestrian accommodations as described for the Principal Arterial. Major and Minor Collector facilities generally do not include bicycle lanes; however, 6.5-foot bicycle lanes may be provided on various Major Collector facilities, depending on demand.

## SUMMARY OF CURRENT STATUS – PEDESTRIAN FACILITIES

Pedestrian networks are typically comprised of sidewalks, trails, and shared-use paths. The current status of these elements of the CAG Region's transportation system is described below.

## SIDEWALKS AND OTHER PEDESTRIAN FACILITIES

### Gila County

Few sidewalks exist on Gila County roadways. Those that do exist are generally located within or near the incorporated communities of Globe, Miami and Payson, and there often are gaps in the sidewalk network. County roadways incorporating sidewalks include: Broadway Street from

2<sup>nd</sup> Street to Old Oak Street in Miami; several roadways adjacent to the Miami Public Schools complex in Miami; and Six Shooter Canyon Road from Winchester Road to Remington Road in Globe.

## Pinal County

Most of Pinal County's roads outside of the urbanized areas are rural in nature. Sidewalks and crosswalks are not typically provided along rural roadways. The lack of adequate pedestrian crossings is becoming more of an issue in Pinal County, due to an increase in the number of pedestrian injuries and fatalities associated with the rural road system.

## TRAILS AND OFF-ROAD FACILITIES



Source: Payson Area Trails System (PATS).

## Gila County

According to the *Gila County Transportation Study* (2014), the Town of Payson has adopted the Payson Area Trails System (PATS) to inter-connect a predominantly peripheral trails system with an interior trail network. **Figure 14** provides mapping of the trails system. Through PATS, the Town proposes the creation of additional trails, bicycle routes, and access facilities for hiking, bicycling, equestrian, and other recreational uses. The PATS plan includes preservation of trail linkages between the Town and trails established in the surrounding National Forest. Available trail systems in

the Globe/Miami area include: Ferndell Trail, East Mountain Trail, Icehouse Canyon Trail, Six Shooter Canyon Trail, and Mill Creek Trail.

## Pinal County

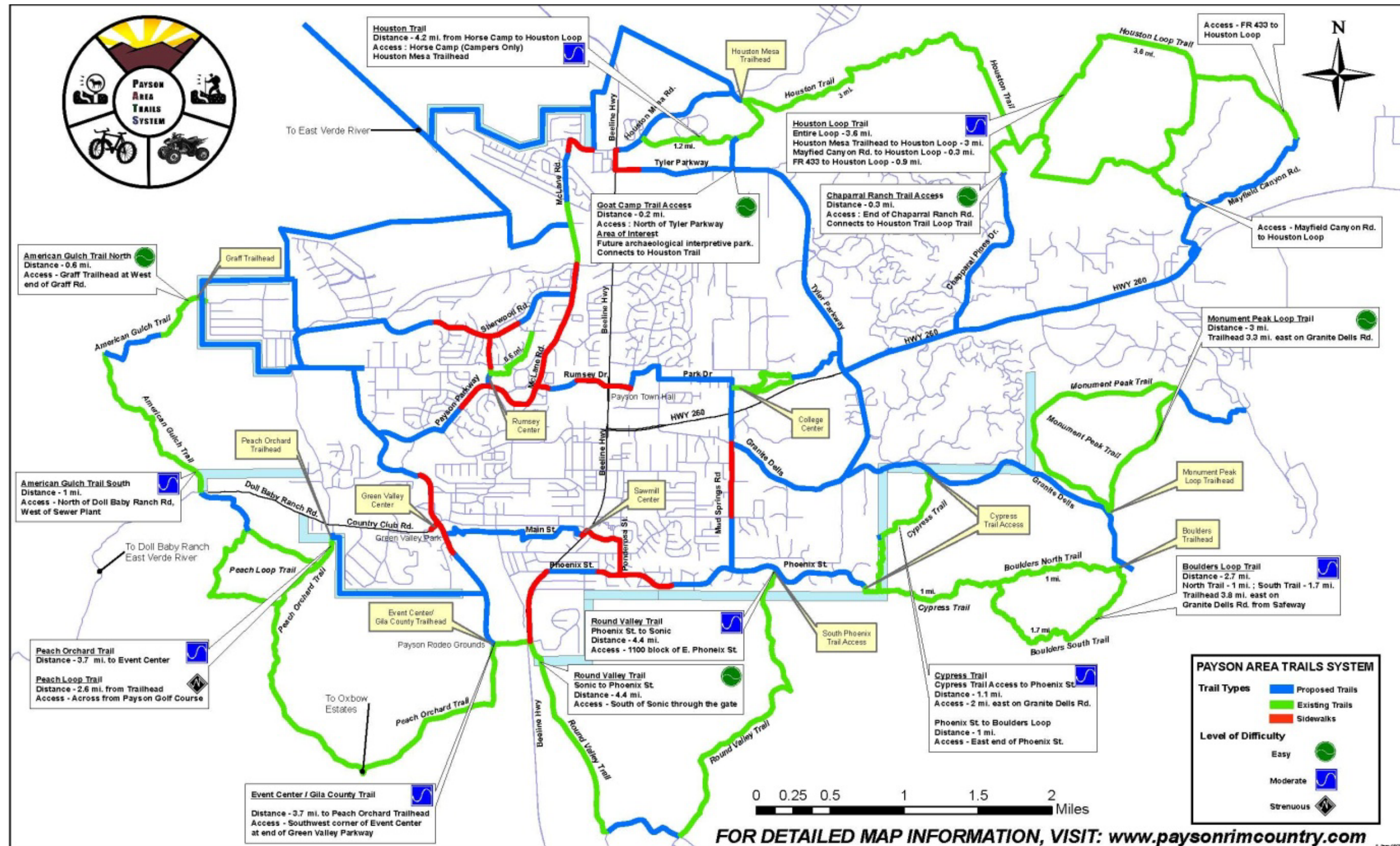
The *Pinal County Open Space and Trails Master Plan* (October, 2007) includes four major trail systems. The plan is displayed in **Figure 15**. Primary regional trail systems are:

- **Arizona Trail:** The Arizona Trail is a designated 807-mile non-motorized State Scenic Trail for the use of hikers, bicyclists, and equestrians. Currently, approximately 55 miles of the trail have been developed, connecting the Oracle area in southern Pinal County with the Gila River to the north. Approximately 15 miles of new trail are planned to connect the Gila River north to the Tonto National Forest.
- **Central Arizona Project Canal National Recreation Trail:** The Central Arizona Project (CAP) Canal is a 336-mile-long system of aqueducts, tunnels, pumping plants, and pipelines carrying water from the Colorado River through Phoenix to Tucson. Constructed by the U.S. Bureau of Reclamation (BOR), its development incorporated a 20-foot recreation corridor on the downstream side of the canal (generally the south or west side). The CAP National Recreational Trail is planned to be a 10-foot-wide paved,





FIGURE 14 – PAYSON AREA TRAILS SYSTEM

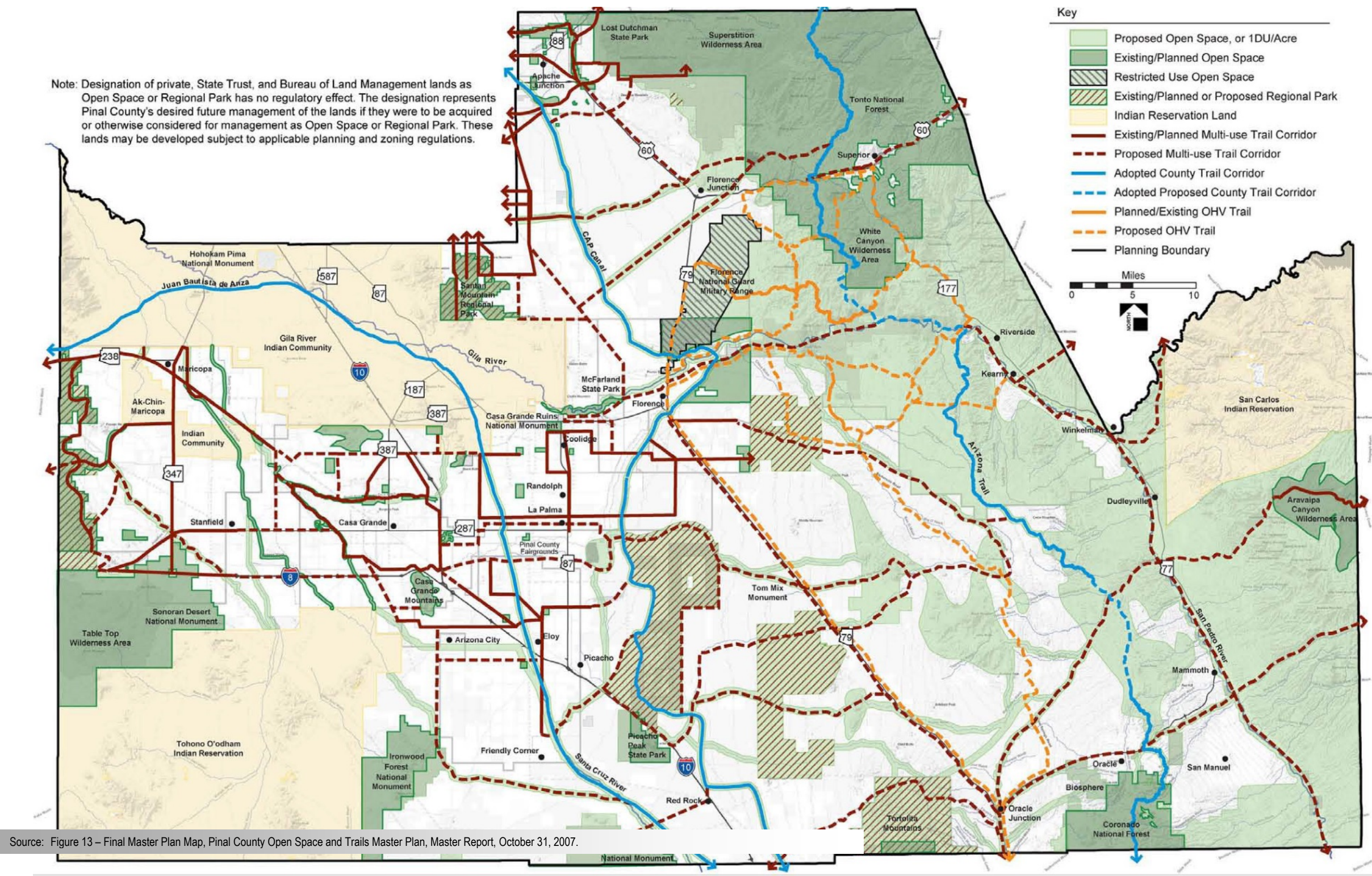


Source: Payson Area Trails System (PATS), Town of Payson, Arizona, June 9, 2008, at [http://paysonrimcountry.com/Portals/0/PATS\\_Printable\\_Map\\_2013.pdf](http://paysonrimcountry.com/Portals/0/PATS_Printable_Map_2013.pdf).





FIGURE 15 – PINAL COUNTY OPEN SPACE AND TRAILS MASTER PLAN





non-motorized, multiuse path within the designated recreation corridor. The CAP Canal extends over 53 miles through Pinal County. The CAP National Recreational Trail is connected to the Maricopa County Regional Trail System.

- **Juan Bautista de Anza National Historic Trail:** The Juan Bautista de Anza National Historic Trail was established by Congress in 1990 to preserve the corridor that Juan Bautista de Anza, commander of the Tubac Presidio, used to guide 198 settlers from Mexico to a mission in the San Francisco Bay area. This 1,200-mile federal non-motorized historic recreational trail is administered by the National Park Service. It follows the Santa Cruz River from Nogales, Arizona, through central Pinal County to the Pima Indian villages along the Gila River. It continues west, following the Gila River to the Colorado River.
- **Great Western Trail:** The international Great Western Trail traverses the 4,455 miles from Mexico to Canada, passing through five states – Arizona, Utah, Wyoming, Idaho and Montana. This multimodal trail serves to link existing trails and roadways, which are located on lands controlled by the U.S. Bureau of Land Management (BLM). It passes through 18 national forests. The portion of the Great Western Trail in eastern and northern Pinal County is primarily being established by creating links between existing or planned trails. According to the Pinal County Open Space and Trails Master Plan, the trail generally follows a northerly route from the San Manuel/Oracle area in southern Pinal County to a point south of Kearny, where it meanders in a northwesterly direction to the Gila River north of Florence, then proceeds to US-60.

### 3.3.2 OPPORTUNITIES

To date, residential development in both Gila and Pinal counties has largely fostered automobile-oriented community design patterns. Particularly within the rural areas, sidewalks, bicycle lanes, and other non-motorized transportation infrastructure components are generally not provided. However, there are opportunities within the CAG Region to achieve a more comprehensive bicycle and pedestrian system. These opportunities are embodied in regional and statewide plans, which are summarized as follows.

- **Gila County Comprehensive Plan:** Gila County has incorporated bicycle and pedestrian guidelines into its Gila County Comprehensive Plan. The plan also establishes the principal that bikeway system planning activities should continue to be coordinated among the County's communities and affected regional planning agencies. The plan states that "new roadway construction of urban collector roadways should include bicycle facilities as presented in the Gila County Roadway Design Standards Manual to increase opportunities for those who choose to bicycle."
- **Pinal County Comprehensive Plan:** This plan supports the vision that land use and transportation must be integrated to support transportation choices. Neighborhood design should encourage greater pedestrian orientation and the establishment of safe and efficient connections. It stresses that transportation planning should include a full range of multimodal options. The plan presents the framework for an integrated transportation system that supports development of an "interconnected multiuse pathway system" as development occurs. A system of bicycle facilities, connecting residential areas to schools, parks, employment centers, and shopping areas, is planned to be established. The objective of this bicycle network is to connect the many existing and proposed master-planned developments, accommodate the need of bicycle parking and security at key destinations, and facilitate bicycle education and safety programs. The Comprehensive Plan also





recommends that roadway and intersection design take into account bicycling as a means of transportation.

- **Arizona Trails 2010: A Statewide Motorized & Non-Motorized Trails Plan:** This plan, developed by Arizona State Parks, addresses both motorized and non-motorized trail information and presents recommendations for future actions regarding trails in Arizona.
- **Arizona Statewide Bicycle and Pedestrian Plan:** ADOT published this plan in August of 2003 and updated it in 2013. The plan presents a long-term vision for a statewide system of interconnected and shared routes that safely and efficiently accommodate motorized vehicle, bicycle, and pedestrian travel. It includes a number of strategies to support the growth of bicycle and pedestrian travel. Of particular relevance to the CAG Region are the following policies, plans and strategies:
  - Continue to provide guidance and technical support to regional and local jurisdictions for developing and implementing bicycle and pedestrian plans that are adopted by local agencies and jurisdictions.
  - Encourage design, engineering, planning, and other appropriate staff to complete bicycle, pedestrian, and transit facility design training once every four years.
  - Establish the State of Arizona as a model employer by providing incentives and facilities to its employees to encourage bicycling and walking to work. Encourage local and regional government agencies and employers to provide incentives and facilities for bicycling and walking to work.
  - Continue to collaborate with local and regional agencies, companies, schools, Indian communities, and other organizations (including Department of Health, non-profit health organizations) to conduct programs and events that promote bicycling and walking as part of a healthy lifestyle.
  - Support local and regional agencies and jurisdictions to establish connectivity and alternative routes to the State Highway System passing through local jurisdictions.
  - Collaborate with local and regional jurisdictions to implement nonmotorized infrastructure components along and crossing state highways consistent with local bicycle and pedestrian plans.
  - Construct sidewalks in urban areas and small urbanized areas, where origins and destinations present a need. ADOT should encourage and support local jurisdictions and regional planning organizations to develop their own bicycle and pedestrian plans. Local and regional plans should be developed with extensive input from local pedestrian and bicycle advocates/riding clubs, organizers/sponsors of special events (e.g., running races, century ride, mountain bike competition), and schools. There should be significant coordination with ADOT regarding development of bicycle and pedestrian facilities in the vicinity of state highways.

The ADOT Planning Assistance for Rural Areas (PARA) Program can provide funding support for local rural agencies and jurisdictions to develop a bicycle or pedestrian plan. More information about the ADOT PARA program is available from the Department's Multimodal Planning Division.

## 3.4 NEAR-TERM PROGRAMMED IMPROVEMENTS AND ENHANCEMENTS

Current transportation enhancement projects relating to bicycle and pedestrian facilities programmed in the CAG Fiscal Year 2013-2016 Regional Transportation Improvement Program (TIP) and the SCMPO 2014-2018 TIP are summarized in **Table 7**.

TABLE 7  
CURRENT TRANSPORTATION SYSTEM ENHANCEMENT PROJECTS

Project	Road Name	From	To	Community	Transportation Improvement Program Listing
Pedestrian Streetscape	Central Avenue	Arizona Boulevard	Main Street	Coolidge	Sun Corridor
Pedestrian Facilities/Landscaping	Main Street	Ruggles Street	Butte Avenue	Florence	CAG
Sidewalks	SR 347 at SR 238	N/A	N/A	ADOT	CAG
Shared Use Pathway	Kings Ranch Road, Phase II			Pinal County	CAG
	Segment A	US-60	Sandtrap Drive		
	Segment B	Alameda	Desert Drive		
Sidewalks	Six Shooter Canyon	Remington Road	North of Cherokee Road	Gila County (Globe)	CAG
Sidewalks	Main Street	N/A	N/A	Globe	CAG
Pedestrian Shelters	Various Locations	N/A	N/A	Pine - Strawberry	CAG
Pathway and Entry Monument	US-70	West San Carlos Indian Community Boundary	San Carlos River	ADOT	CAG
Curb, Gutter, Sidewalks, and Landform Rock Graphics	US-60 at Idaho Road Interchange (Milepost 196)	N/A	N/A	ADOT, Apache Junction	CAG

\*Sources: Central Arizona Governments Transportation Improvement Program and Sun Corridor MPO 2014 -2018, Amended List of Projects (TIP Amendment 2).

## 3.5 RECOMMENDED STRATEGIES AND IMPROVEMENTS

### 3.5.1 DEVELOP AND ADOPT COMPLETE STREETS POLICIES

In communities across the country, a movement is growing to “complete” the streets. States, cities, and towns are asking planners and engineers to build roads that are safer, more accessible, and easier for everyone of all ages and abilities to use. In the process, better communities are being created for



Example of a Complete Street

Source: Scottsdale street photo from *Complete Streets Guide*, Maricopa Association of Governments, 2011.

people to live, play, work, and shop.<sup>1</sup> The result of this movement is a concept that has become known as “Complete Streets.”

Complete Streets describes roadways designed and operated to enable safe access and use for people of all ages and abilities. Roadway treatments and upgrades implemented within the Complete Streets concept enable people to safely move along and across streets in a community, regardless of how they are traveling. The concept creates safe and secure mobility environments, especially regarding crossing streets, walking next to streets, bicycling on streets, and accessing public transit services. Creating Complete Streets means that transportation agencies adopt an approach focused on designing and building new community roadways or implementing “retrofit” improvements to upgrade existing roads and streets. The process is based on a comprehensive framework that considers the mobility needs of persons of all ages and abilities traveling in the community.

By adopting a Complete Streets Policy, communities give planners and engineers the guidance necessary to routinely design entire rights-of-way to enable safe access for all users, regardless of age, ability, or mode of transportation. This means that every transportation project ultimately will make the street network safer for drivers, transit users, pedestrians, and bicyclists – making your town a better place to live.<sup>2</sup> A Complete Street in a rural area will look quite different from a Complete Street in a highly urban area, but both are designed to balance safety and convenience for everyone using the road.

CAG has included the Complete Streets concept in this RTP to provide guidance for its implementation by CAG member agencies. CAG member agencies and other local jurisdictions should consider developing and adopting a Complete Streets Policy. This action will promote implementation of additional bicycle and pedestrian facilities and expand the conversation within communities regarding the design and use of local and regional roadways. The primary components of a Complete Streets Policy would include:

- A vision for how and why the community wants to implement “complete streets.”
- Guidance that ‘all users’ includes pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as trucks, buses, automobiles, and emergency vehicles.
- Application to both new and renovation/retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Any specific exceptions and a clear procedure that requires high-level approval of exceptions.
- Encouragement of street connectivity and the creation of a comprehensive, integrated, connected network for all modes.
- Direction for all agencies to adopt the Complete Streets concept to cover all roads.
- Direction regarding the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs with other community policies.
- Direction that Complete Streets solutions should complement the context of the community.
- Establishment of performance standards with measurable outcomes.
- Specific next steps for implementation of the policy.

<sup>1</sup> <http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals>.

<sup>2</sup> Ibid.



## 3.5.2 INCORPORATE PEDESTRIAN AND BICYCLE IMPROVEMENTS INTO ROADWAY WIDENING AND INTERSECTION PROJECTS

**Table 8** identifies currently programmed projects which present potential opportunities to incorporate bicycle and pedestrian improvements as project planning and design goes forward.

TABLE 8  
OTHER CURRENT TRANSPORTATION PROJECTS IN THE CAG REGION

Project	Road Name	From	To	Entity	Transportation Improvement Program Listing	Opportunity
Pavement Preservation	SR 287	Jct. I-10	La Palma Road	ADOT	SCMPO	Improve paved shoulders for bicycling
Roadway Widening	Doan Street	Trekell Road	Pottebaum Road	Casa Grande	SCMPO	Includes paved shoulders / bicycle lanes / sidewalks for bicycling and walking

Source: Sun Corridor MPO 2014-2018 Listing of Projects – Approved, dated 10/30/13.

Consideration of bicycle and pedestrian needs and improvements should be “mainstreamed” into these types of roadway improvement projects. For example:

- Pavement preservation projects present an opportunity to restripe wide roadways to include a bicycle lane or a wider paved shoulder.
- Roadway construction or reconstruction projects present an opportunity to include sidewalks and bicycle lanes.
- Roadway improvement projects provide an opportunity to implement countermeasures that improve pedestrian safety, including median islands, pedestrian crossing islands, and pedestrian hybrid beacons.

Routine consideration of bicycle and pedestrian facility improvements, as a part of every project, will contribute to the development and expansion of a connected, comprehensive, and safe bicycle and pedestrian network integrated with a community’s street system. In rural areas, roadway improvement projects can include wider, paved shoulders to enhance the safety of bicyclists, as well as provide a buffer from vehicle traffic. In urban areas, sidewalks and bicycle lanes can contribute to a vibrant community, if carefully integrated with the community travel patterns and needs. Dedicated facilities and connectivity are particularly important on roadways that link urban centers (e.g., downtowns and employment concentrations), activity and shopping centers, and recreational destinations; particularly if the routes have high traffic volumes, high speeds, or are used by trucks or large recreational vehicles.



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## 4.0 AVIATION ELEMENT

### 4.1 BACKGROUND

Air transportation is increasingly a significant facet of modern life. Good air connections within the CAG Region and in relation to destinations outside of the region support regional and local economic growth. The Aviation Element looks at current air transportation resources and facilities with the objective of improving service and connectivity for residents, tourists, business professionals, air cargo shippers, and others who would benefit from safe, secure, and timely transportation via the aviation infrastructure. Accessibility to the region's airports is also considered and regional roadway connections to airports are coordinated with the Roadway Element.



### 4.2 ESSENTIALS OF THE AVIATION ELEMENT

The key objective of the Aviation Element is to provide a framework that establishes a clear direction for achieving a coordinated and balanced regional transportation system. This Aviation Element incorporates guidance for system development, gives direction to actions supporting implementation of improvement projects, and provides information relating to funding and financial needs. An important aspect of each of these three components is explicit consideration of access to airports as a factor in analyses and plans focused on development of the regional aviation system.

The most effective process for preserving and improving the CAG Region's airports and associated economic and quality-of-life benefits involves implementation of timely proactive measures. Regional guidance can minimize potential adverse impacts arising from encroachment of incompatible land uses around airports, which generally results in complaints from the newly formed communities relating to adverse noise levels and congestion of arterial roadways supporting ground access for the airport. A regional approach will help protect people and property from intrusion associated with airport operations, and assure that the airport system is an efficient element of the region's transportation infrastructure in the future. Failure to practice good planning practices to protect airports could adversely affect future opportunities for social and commercial growth and reduce, even eliminate, the benefits of the airport system.

Currently, the CAG Region does not have a formal Regional Aviation System Plan (RASP). A RASP is developed to provide an independent analysis of future aviation trends in a region. Identified airport facility and system requirements are used together with the airport planning process to establish a proposed set of improvements for enhancing the regional airport system. Preparation of a RASP includes derivation of forecasts of future operations at each airport based on an analysis of individual markets wherein the facilities are located. The RASP is not based on a governmental prescription or regional passenger "allocations;" it primarily is an advisory and informational document. Development of the RASP is coordinated with the State Aviation System Plan (SASP).

Federal and state law establishes the Federal Aviation Administration (FAA) and the airport controlling entity (e.g., municipality or authority) as having decision-making authority with respect to aviation facility improvements. Thus, the RASP does not discount or dilute the responsibilities of those controlling the airport and airport operations to conduct appropriate planning studies and



prepare adequate environmental impact analyses for proposed improvement projects as may be required by federal or state laws.

## 4.3 CURRENT STATUS OF THE CAG REGION AIRPORT INFRASTRUCTURE

As the CAG Region does not have an active RASP, which would be the primary source of information for airports in the region, information presented herein was derived from Arizona's SASP.

### 4.3.1 SUMMARY OF AIRPORT SYSTEM CHARACTERISTICS

The existing CAG Region airport system consists of 11 independent General Aviation (GA) airport facilities. GA airports serve all civil aviation operations, including gliders, powered parachutes, personal airplanes, and corporate jets, to the exclusion of scheduled air carriers and air service for hire. Two GA airports are located in Gila County. The other nine are located in Pinal County. Eight of the airports are publically-owned; that is to say, they are controlled or sponsored by a local governmental unit, e.g., city, town, county, or Native American Indian Community. Two of the airports are located on Native American Indian Communities; the San Carlos Airport (Globe) is publically-owned, while the Ak-Chin Indian Community Airfield is considered to be a private facility. Two other airports are privately-owned and operated: the Estrella Sailport and the Phoenix Regional Airport (Ak-Chin). **Figure 16** shows the general locations of these airports and other private airports and heliports on a map of the CAG Region.

### AIRPORT ROLE

**Table 9** provides a listing of the 11 airports serving the CAG Region. The listing reveals that eight of the CAG Region airports are included in the FAA's National Plan of Integrated Airport Systems (NPIAS). Inclusion in the NPIAS indicates that the airports have been deemed significant to national air transportation and, therefore, are eligible to receive Federal grants under the Airport Improvement Program (AIP). In addition to the NPIAS, the FAA has additional classifications for GA airports that were identified as part of a 2012 report, *General Aviation Airports: A National Asset* (referred to as ASSET). The ASSET report established four classifications of GA airports, plus an "Unclassified" category. Only seven of the 11 CAG Region airports are classified, with all but one (P13-San Carlos Apache) identified as GA-Local. The definition of GA-Local indicates that the airport serves local and regional markets, has moderate levels of operational activity with some multi-engine aircraft, and serves as a "base" or home for numerous GA aircraft. One airport – MZJ-Pinal Airpark – is identified as Unclassified.

Similar to ASSET, ADOT's Multimodal Planning Division Aeronautics Group classifies airports within the state. Five of the airports in CAG's regional aviation system are classified as GA – Community. These are airports that serve regional economies, which the Arizona SASP defines as economic activity areas that encompass multiple communities or political jurisdictions. GA – Community airports support connectivity with state and national economies, and serve all types of GA aircraft. Four of the airports in the system are classified GA – Rural, a classification that includes airports serving a supplemental role in local economies by supporting the aviation needs of smaller business, recreational flyers, and personal travel. The other two airports are classified GA – Basic. These airports serve a limited role, primarily supporting recreational and personal travel.

FIGURE 16 – CAG REGION AIRPORTS

Vicinity Map

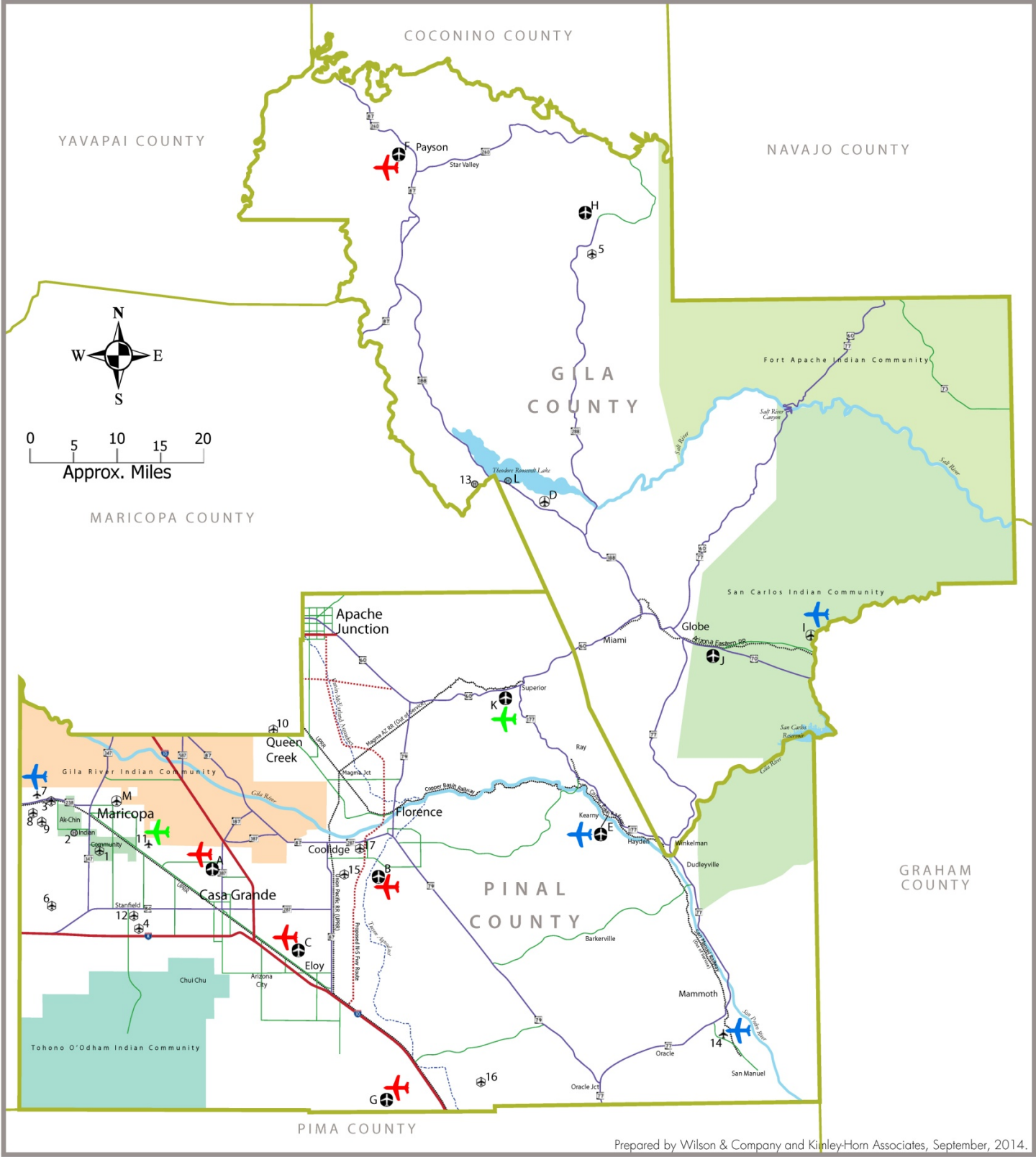
**Airport Role in Regional System**

- General Aviation - Community
- General Aviation - Rural
- General Aviation - Basic

**Airport and Heliport List**

- Publicly-Owned Airport, Open to Public
- Publicly-Owned Airport, Private
- Privately-Owned Airport, Open to Public
- Privately-Owned Airport, Private
- Publicly-Owned Heliport, Private
- Privately-Owned Heliport, Private

Airport Name	Use
PUBLICLY-OWNED	
A. Casa Grande Municipal Airport	Open to Public
B. Coolidge Municipal Airport	Open to Public
C. Eloy Municipal Airport	Open to Public
D. Grapevine Airport	Private
E. Kearny Airport	Open to Public
F. Payson Airport	Open to Public
G. Pinal Airport	Open to Public
H. Pleasant Valley Airstrip	Open to Public
I. San Carlos Airport	Private
J. San Carlos Apache Airport	Open to Public
K. Superior Municipal Airport	Open to Public
L. Tonto Ranger Station Heliport	Private
M. U of A Maricopa Ag Ctr Airport	Private
PRIVATELY-OWNED	
1. Ak-Chin Community Airfield	Private
2. Ak-Chin Heliport	Private
3. Boulais Ranch Airport	Private
4. Carranza Farm Airstrip	Private
5. Chapman Ranch Airstrip	Private
6. Donnelly Residence Airport	Personal Use
7. Estrella Sailport/Gliderport	Open to Public
8. Hidden Valley Airport	Private
9. Millar Airport	Private
10. Pegasus Airpark Airport	Private
11. Phoenix Regional Airport	Open to Public
12. Potter's Field Airport	Private
13. Roosevelt Dam Heliport	Private
14. San Manuel Airport	Open to Public
15. Sarita Airport	Private
16. Twin Hawks Airpark	Private
17. Valley Farms Airport	Private



CAG Region  
Airports

LEGEND

- General Map Features**
- County Boundary
  - Freeway
  - Proposed Freeway
  - State Highway
  - Major Highway
  - Railroad
  - Aqueduct
  - Lake/Reservoir
  - Major River

Sources: Airports in FAA 2012 ASSET Report, ADOT State Airport System Plan, Arizona at AirportData.com, and AirportBug.com.

NOTE: This information has been prepared for planning purposes only. While every effort has been made to ensure its accuracy, CAG makes no warranty, expressed or implied as to its accuracy and expressly disclaims liability for the accuracy thereof.





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TABLE 9  
CAG REGION AIRPORTS AND STATUS

Airport Code	Associated City	Airport Name	Sponsor/Owner	NPIAS	FAA Asset Role	Role: Arizona SASP
<b>Gila County</b>						
P13	Globe	San Carlos Apache	San Carlos Apache Indian Community	Yes	GA – Basic	GA – Rural
PAN	Payson	Payson	Town of Payson	Yes	GA – Local	GA – Community
<b>Pinal County</b>						
CGZ	Casa Grande	Casa Grande Municipal	City of Casa Grande	Yes	GA – Local	GA - Community
P08	Coolidge	Coolidge Municipal	City of Coolidge	Yes	GA – Local	GA – Community
E60	Eloy	Eloy Municipal	City of Eloy	Yes	GA – Local	GA – Community
E67	Kearny	Kearny	Town of Kearny	No	Not Listed	GA – Rural
MZJ	Marana	Pinal Airpark	Pinal County	Yes	GA - Unclassified	GA – Community
A39	Maricopa	Ak-Chin Regional (Phoenix Regional)	Ak-Chin Indian Community	Yes	Not Listed	GA – Basic
E68	Maricopa	Estrella Sailport	Arizona Soaring Inc.	No	Not Listed	GA – Rural
E77	San Manuel	San Manuel	Pinal County	Yes	GA – Local	GA – Rural
E81	Superior	Superior	Town of Superior	No	Not Listed	GA - Basic

NPIAS = National Plan of Integrated Airport Systems

FAA = Federal Aviation Administration

SASP = State Airport System Plan

Sources: FAA 2012 ASSET Report, ADOT SASP, FAA 5010 Reports, NPIAS 2013-2017 Report.

None of the airports in the CAG Region support air carrier service, which provides scheduled passenger flights for compensation. ADOT's classification system is used in allocating funding from the State's Aviation Fund based on current ADOT administrative guidelines.

## FACILITY CHARACTERISTICS

As previously noted, the 11 airports in the CAG Region all serve GA aircraft. Of primary importance in serving aircraft activity is the availability of airfield facilities to accommodate demand. As shown in **Table 10**, only two airports have more than one runway. Single-runway airports generally are sufficient to accommodate general aviation activity, especially in non-metropolitan areas. Runway lengths for airports in the CAG Region vary considerably, as the runways reflect the role of the airport and its usage. The shortest runway (1,910 feet.) is located at the private E68-Estrella Sailport west of Maricopa. The longest runway at 6,849 feet is located at the MZJ-Pinal Airpark, which is just north of the Pinal/Pima County Line and west of I-10. Similarly, the narrowest runway (25 feet.) is at the E68-Sailport and longest at MZJ-Pinal Airpark (150 feet.), although it should be noted that the runway at P08-Coolidge Municipal is also 150 feet wide. All the GA-Community airports have asphalt runways in good condition with full-length, parallel taxiways. **Table 10** provides a summary of the physical attributes of the 11 airports in the CAG Region and information relating to facility conditions.

## AIRPORT OPERATIONS

Activity at an airport typically is measured in terms of the number of aircraft that are housed or “based” at the airport on a regular basis and the number of take-offs and landings, referred to as “operations.”





TABLE 10  
PHYSICAL FACILITY CHARACTERISTICS OF CAG REGION AIRPORTS

Airport Code	Airport Name	Runway Designation*	Length / Width (Feet)	Surface	Primary Taxiway	Taxiway Type (Partial/Full/ Turnaround, Etc.)
<b>Gila County</b>						
P13	San Carlos Apache	09/27	6,500/100	Asphalt – F (Fair Condition)	A	Full Length - Parallel
PAN	Payson	06/24	5,504/75	Asphalt – G (Good Condition)	A	Full Length – Parallel
<b>Pinal County</b>						
CGZ	Casa Grande Municipal	05/23	5,200/100	Asphalt – G	B	Full Length - Parallel
P08	Coolidge Municipal	05/23	5,564/150	Asphalt – F	--	Connectors
		17/35	3,873/75	Asphalt – G	A	Full Length – Parallel
E60	Eloy Municipal	02/20	3,901/75	Asphalt – G	A	Full Length – Parallel
E67	Kearny	08/26	3,400/60	Concrete – G	--	No Taxiway
MZJ	Pinal Airpark	12/30	6,849/150	Asphalt – G	A	Full Length – Parallel
A39	Ak-Chin Regional	04/22	4,751/50	Asphalt – G	A	Full Length – Parallel
E68	Estrella Sailport**	06C/24C	1,995/25	Dirt – F	--	--
		06L/24R	1,910/25	Dirt – F	--	--
		06R/24L	2,520/30	Asphalt – F	--	--
		07/25	3,740/20	Dirt – F	--	--
E77	San Manuel	11/29	4,207/75	Asphalt – G	A	Full Length – Parallel
E81	Superior	04/22	3,250/75	Gravel – F	--	No Taxiway

\* The numerical numbers assigned to runways are based on the 360 degrees of a compass, multiplied by 10. The numbers indicate the "heading" of the runway, i.e., the direction of its oriented to north. So, runway 09 means the runway is oriented at 90 degrees to North or directly East, and 27 means the runway is oriented at 270 to North or directly West. It is important to know the heading of runway, as aircraft take off and land into the wind to maximize lift. The wind direction is determined prior to landing or taking off from local sources or the National Weather Service (NWS). The 'L', 'C', and 'R' indicate the runway is left, center, or right relative to the heading, where multiple runways exist.

\*\* Private Airport used primarily for recreational purposes.

Sources: FAA 5010 Reports, Airport Master Plans & Airport Layout Plans.

## EXISTING OPERATIONS

**Table 11** presents the most recent available activity data for the CAG Region airports. It should be noted that airport activity was reported to the FAA as part of inspections performed by the operating entity, but information provided has not actually been verified. Without air traffic control (ATC) towers, which only are present at much larger facilities, the operational numbers represent estimates provided by the airport operator and/or sponsor. CGZ-Casa Grande Municipal supports the greatest number of operations on an annual basis (approximately 120,000) and has more than twice the number of based aircraft compared to the next airport in terms of annual operations (MZJ-Pinal Airpark). The other ten airports in the region support 35 or fewer based aircraft. Discounting MZJ-Pinal Airpark, which currently is oriented to aircraft salvage and maintenance, annual operations at these ten airports do not exceed 42,000, and operations at P13-San Carlos Apache, E67-Kearny, and E81-Superior do not exceed 2,000.



TABLE 11  
NUMBER OF BASED AIRCRAFT AND AIRPORT OPERATIONS

Airport Code	Airport Name	Number of Based Aircraft	Annual Operations	Year of Data
<b>Gila County</b>				
P13	San Carlos Apache	4	1,900	4/30/14
PAN	Payson	35	41,850	4/27/11
<b>Pinal County</b>				
CGZ	Casa Grande Municipal	106	119,680	4/29/14
P08	Coolidge Municipal	18	4,250	4/28/14
E60	Eloy Municipal	23	23,450	4/28/14
E67	Kearny	4	1,200	12/31/13
MZJ	Pinal Airpark	0	56,857	4/28/14
A39	Ak-Chin Regional	24	18,310	4/29/14
E68	Estrella Sailport	42	20,000	4/24/11
E77	San Manuel	25	14,010	4/27/14
E81	Superior	0	200	4/30/14
<b>TOTAL</b>		<b>281</b>	<b>301,707</b>	

Source: FAA 5010 Reports.

## FUTURE OPERATIONS

Projections of future demand are developed to assess the adequacy of existing airport facilities serving the state. The most recent comprehensive forecast that included the 11 CAG Region airports is the *2008 State Airports System Plan* (SASP). As part of the SASP, activity was evaluated and projected for each airport through 2030 using data from 2007 as the baseline. Region-wide, based aircraft are projected to grow to over 600 by 2030, with annual operational activity increasing to more than 300,000 operations. It is important to note that these projections of future aviation activity could be overstated, given the decline experienced in aviation during the economic recession that occurred in 2007.

**Table 12** shows expectations for growth at each of the CAG Region airports between 2017 and 2030. SASP projections indicate that the number of based aircraft at airports in the CAG Region is expected to increase 28.3 percent, and the number of operations is expected to increase 24.9 percent. Discounting MZJ-Pinal Airpark, the number of based aircraft at P08-Coolidge Municipal and E77-San Manuel are expected to increase by more than 40 percent. This does not translate directly into increased operations at P08-Coolidge Municipal; only a 7.8 percent increase is projected. However, operations at E77-San Manuel are projected to increase 51.5 percent. PAN-Payson is projected to see a 39.9 percent increase in annual operations by 2030, while experiencing an increase in based aircraft of only 8.7 percent.

## STATUS OF AIRPORT PLANNING AND DEVELOPMENT

Airport Master Plans (AMPs) and Airport Layout Plans (ALPs) are two major planning tools utilized to support airport development. These plans assist the airport operator and/or sponsor to evaluate future demand and establish a plan for meeting projected needs, including aircraft operations support and maintenance of facilities. ALPs are used by the FAA and ADOT to identify and approve development and improvement projects that may be eligible for federal funding for those airports included in the NPIAS. As shown in **Table 13**, the current master plan updates available



TABLE 12  
PROJECTIONS OF BASE AIRCRAFT AND ANNUAL OPERATIONS

Airport Code	Airport Name	Based Aircraft Projection			Operations Projection		
		2017	2030	Percent Change	2017	2030	Percent Change
Gila County							
P13	San Carlos Apache	57	75	31.6%	18,200	21,600	18.7%
PAN	Payson	92	100	8.7%	54,700	76,500	39.9%
Pinal County							
CGZ	Casa Grande Municipal	111	144	29.7%	72,800	86,200	18.4%
P08	Coolidge Municipal	44	63	43.2%	6,400	6,900	7.8%
E60	Eloy Municipal	50	65	30.0%	26,200	31,000	18.3%
E67	Kearny	6	8	33.3%	4,800	5,700	18.8%
MZJ	Pinal Airpark	1	2	100.0%	7,800	8,500	9.0%
A39	Ak-Chin Regional	13	15	15.4%	16,600	19,700	18.7%
E68	Estrella Sailport	32	38	18.8%	18,800	22,200	18.1%
E77	San Manuel	74	105	41.9%	16,700	25,300	51.5%
E81	Superior	1	2	100.0%	200	200	0.0%
TOTAL		481	617	28.3%	243,200	303,800	24.9%

Sources: ADOT 2008 SASP – Medium Projections.

TABLE 13  
STATUS OF AIRPORT PLANNING AND DEVELOPMENT

Airport Code	Airport Name	Date of Last Airport Layout Plan (ALP)	Most Current Master Plan Update (MPU)
<b>Gila County</b>			
P13	San Carlos Apache	2007 (Conditionally Approved)	2007
PAN	Payson	2009 (Draft) (Approved 3/5/14)	2009
<b>Pinal County</b>			
CGZ	Casa Grande Municipal	1997	2009
P08	Coolidge Municipal	2010 (Draft)	2011
E60	Eloy Municipal	2001	2011 (Draft)
E67	Kearny	2003	1994
MZJ	Pinal Airpark	* **	1991
A39	Ak-Chin Regional	* **	2013
E68	Estrella Sailport	**	**
E77	San Manuel	1992 (Draft)	2002
E81	Superior	2001 (Preliminary)	2001

\* Currently underway

\*\* None Available on ADOT website

Source: ADOT Website (<http://azdot.gov/planning/airportdevelopment/airports>).

from ADOT are dated between 1992 and 2013, and several airports are in the process of preparing updates. Nevertheless, only five of the CAG Region airports have completed or drafted an ALP within the past five years

Given the expectation of economic and population growth in the CAG Region, particularly in Pinal County, the lack of current ALPs and MPUs is not supportive of an integrated airport system for the region. In general, planning updates should be prepared at regular intervals (between seven and ten years), or as significant changes occur that necessitate updates, such as an increase in the number of operations.



## NEAR-TERM PROGRAMMED IMPROVEMENTS/ENHANCEMENTS

Operating authorities at Arizona airports are requested to submit to ADOT each year a 5-year plan for inclusion in the State's Airport Capital Improvement Plan (ACIP). The ACIP includes projects listed in adopted and approved Airport Master Plans. Projects must be shown on an approved ALP. ADOT reviews the projects and accepts them into the inventory of requested airport improvements. Once accepted, ADOT prioritizes the projects by assigning points according to satisfaction of need relative to six categories of airport facility operations and maintenance: safety, security, capacity, environmental issues, planning, and sustainability.

The highest ranking airport projects then are evaluated with respect to the availability of funding in the state's aviation budget and guidance provided by the SASP. Only projects identified for the first year of the submitted 5-year plans will be funded. Eligible projects generally include improvements relating to enhancing airport safety, capacity (e.g., runway construction), security (e.g., lighting), addressing environmental concerns, and preparing plans. In general, airport operators (or sponsors) may use funds for most capital improvement projects or repairs and, in some specific situations, terminals, hangars, and non-aviation development. Professional services necessary to support project development, such as planning, surveying, and design, are eligible. Demand for facilities and services at the airport must justify the projects, which also must meet Federal environmental and procurement requirements.

When airport operators submit their 5-year plan to ADOT, a copy is also submitted to the FAA. The FAA prioritizes projects beginning with the nine Federal Administrative regions. The CAG Region lies within the Western-Pacific Region. The FAA then examines projects by states, then by airports. Arizona projects are reviewed in consultation with the FAA Phoenix Field Office and ADOT. The FAA notifies ADOT and airport operators of projects designated to receive Federal aviation funding. For the 11 airports in the CAG Region, 74 projects were requested over the most recent 5-year period of 2015 - 2019. The expected cost of all requested projects was estimated to be approximately \$48 million, as shown in **Table 14**. Only three of the 74 projects were funded by ADOT in 2015 at a cost of \$1.1 million. A summary of proposed projects at the region's airports is provided below.

### Gila County

**P13-San Carlos Apache Airport (Globe)** – San Carlos Apache Airport is a public use airport located seven nautical miles southeast of the central business district of Globe. The airport is owned and operated by the San Carlos Apache Indian Community. Runways, taxiways, and aprons are the focus for this airport in the current 5-year plan. A total of eight projects were identified at this airport with an estimated cost of \$1.9 million.

**PAN-Payson Airport** – In September, 2007, airport operations were assumed by the Payson Regional Airport Authority (PRAA) through a lease agreement. PRAA relinquished operations back to the Town of Payson in February, 2012. This 80-acre airport has a paved asphalt runway that is 5,504 feet long and 75 feet wide. There is also a 50 x 50 feet concrete helipad. The focus of improvements at this airport will be on the aprons. A funding request for 10 projects was submitted with the 5-year plan.



TABLE 14  
ESTIMATED COST OF AIRPORT IMPROVEMENT PROJECTS: 2015 - 2019

Airport Code	Airport Name	Federal Share	State Share	Local Share	Total
<b>Gila County</b>					
P13	San Carlos Apache	\$1,725,587	\$84,706	\$84,707	\$1,895,000
PAN	Payson	\$1,839,412	\$901,792	\$180,460	\$2,921,664
<b>Pinal County</b>					
CGZ	Casa Grande Municipal	\$19,407,617	\$952,691	\$952,692	\$21,313,000
P08	Coolidge Municipal	\$8,951,198	\$1,840,610	\$595,090	\$11,386,898
E60	Eloy Municipal	\$5,122,125	\$701,438	\$301,437	\$6,125,000
E67	Kearny	\$0	\$60,482	\$6,720	\$67,202*
MZJ	Pinal Airpark	\$2,230,970	\$668,317	\$171,604	\$3,070,891
A39	Ak-Chin Regional	\$0	\$0	\$0	\$0
E68	Estrella Sailport	\$0	\$0	\$0	\$0
E77	San Manuel	\$1,092,720	\$53,640	\$53,640	\$1,200,000
E81	Superior	\$0	\$0	\$0	\$0
<b>TOTAL</b>		<b>\$40,369,629</b>	<b>\$5,263,676</b>	<b>\$2,346,350</b>	<b>\$47,979,655</b>

\* Airport Pavement Management System (APMS) Project Only.

Source: 2015-2019 Final Five-Year Transportation Facilities Construction Program, Airport Capital Improvement Plan (ACIP), ADOT,

## Pinal County

**CGZ-Casa Grande Municipal Airport** – This airport is owned and operated by the City of Casa Grande and occupies approximately 640 acres in the northern portion of the city. The airport hosts several aviation events between December and April. The 5-year plan for the airport supports requested funding for 20 projects worth almost \$22 million. The majority of the projects relate to runway and taxiway extensions, which would involve moving an existing drainage canal. Planning and environmental studies would be needed to determine potential impacts associated with the extensions and canal relocation.

**P08-Coolidge Municipal Airport** – On March 2, 1959, the airport was officially transferred from Pinal County ownership to the City of Coolidge. The 5-year plan focuses on projects to improve runways and taxiways, including lighting, signage and guidance systems, as well as reconstruction and relocation. The plan supports the City's request for \$11.5 million to fund 16 projects.

**E60-Eloy Municipal Airport** – The Eloy Municipal Airport is owned and operated by the City of Eloy. The airport currently encompasses approximately 90 acres of land. It has one northeast/southwest runway (2/20), 3,900 feet long and 60 feet wide. The existing taxiway system consists of full and partial-length parallel taxiways and connecting taxiways. The airport is the location for Skydive Arizona, which has grown into the world's largest skydiving center. This specialty aviation enterprise serves an average of over 135,000 jumps per year. The 5-year plan concentrates on extending the runway, supporting taxiways, and drainage control issues. The plan also includes taxi lanes to facilitate access for new T-hangars. The City has requested funding for 13 projects in the amount of \$8.8 million for the next five years.

**E67-Kearny Airport** – The Town of Kearny owns and operates the Kearny Airport, which occupies about 20 acres. This airport allows only daytime take-offs and landings on the 3,400-foot concrete runway. There have been no proposed planning or improvement projects submitted for this airport for several years.

**MZJ-Pinal Airpark** – This airport began its existence as the Marana Army Air Field supporting Army Air Corps pilot training activity in the early 1940s. It is now owned and operated by the Pinal





County Airport Economic Development Department. Currently, its primary tenant is Marana Aerospace Solutions, Inc. (MAS), a Maintenance, Repair, and Overhaul (MRO) operator. MAS, recognized as the world's largest commercial aircraft MRO and storage facility, relinquished its rights to exclusive use of the airport in 2013, but continues to control a significant portion of the property and facilities. MAS, which also is the Fixed Base Operator (FBO), offers a broad range of maintenance, components, paint, and other services. Old airplanes also are stored at the airport with the expectation that the dry desert climate will mitigate corrosion, increasing the opportunities for placing the planes and particularly airplane parts into service in the future.

In 2003, the FAA notified the County that the airport was in noncompliance regarding a number of issues related to federal obligations; many associated with the lack of appropriate facilities and services required of a GA airport available for public use. The County has made significant efforts to resolve the FAA compliance issues and reverse public perception that the airport is a non-public use airfield. These efforts, along with ongoing and planned airfield improvements to address deteriorated infrastructure (the majority of the facilities and structures are in fair to poor condition), are expected to lead to more GA operations in the future. The 1991 Airport Master Plan is being updated, and, while it will focus on safety issues, the update will address other matters of concern. One project submitted for the State ACIP is runway rehabilitation with an estimated cost of \$2.5 million.

**A39-Ak-Chin Regional Airport** – Owned and operated by the Ak-Chin Indian Community, this airport recently underwent a series of renovations to improve its utility and safety. Improvements included: crack sealing, seal coating, and remarking of the runway and taxiway; installation of a new beacon, wind cone, and segmented circle; and upgrades to the FBO building. The airport was accepted October, 2012, into the NPIAS, which makes it eligible to receive Federal grants under the AIP. State legislation also has changed to include tribal airports in the state funding program. However, there are still some grant assurance obligations that need to be met before funding can be provided. Therefore, no projects have been requested for the next five years.

**E68-Estrella Sailport** - This airport with four runways is a privately-owned, public-use glider airport. The sailport has three dirt runways and one asphalt runway. It is mostly used for gliders: 42 were based at the sailport in 2011. As a private airport, the operator/sponsor is ineligible for funding from the FAA and ADOT.

**San Manuel Airport** – The Pinal County Airport Economic Development Department is responsible for the development and management of this airport. The San Manuel Airport is a GA airport located in the northern portion of the Community of San Manuel. The airport currently supports 25 based aircraft, but there is a waiting list of for 25 more spaces. Pinal County's 5-year plan for the airport includes six projects with an estimated cost of approximately \$2 million. The focus of the projects includes the extension of the taxiway and the purchase of the existing lease for the airport property.

**Superior Airport** – This airport is publicly-owned by the Town of Superior. It is located southwest of Superior on 265 acres of land. It has one 3,250-foot gravel runway that is 75 feet wide. As of April, 2014, the airport supported 200 aircraft operations per year. All operations are transient GA aircraft. Due to budgetary issues, the Town of Superior has not submitted any project funding requests for many years.



## POTENTIAL GROWTH OPPORTUNITIES

Growth projections for the 2030 to 2035 timeframe presented in the *Pinal County Comprehensive Plan* indicate Pinal County will be capable of supporting air carrier service and a commercial airport similar to present levels in Tucson. Because air service is coordinated through the SASP, the potential for a major commercial air carrier airport will depend on the capacity to serve Pinal County air travel demand through the current regional airports, such as Phoenix Sky Harbor, Tucson International, and Phoenix-Mesa Gateway. Other factors, including economic growth in the county as well as the success of establishing a proposed Aviation-Based Commerce Center, could also affect the potential for such a facility. The Commerce Center is proposed as a development opportunity in the central part of Pinal County near the existing Coolidge Airport.

CAG's Employment Center Adjustment Strategy prepared in March, 2010, cites the following: "...a recent Governor's study on the need for ... construction of an alternative metropolitan jetport to alleviate air traffic congestion at Phoenix Sky Harbor International Airport has identified two potential sites within north central Pinal County." This is consistent with the SASP, which recognizes nine airports in the Arizona Sun Corridor as potentially playing a role in future air travel, including a major commercial airport in Pinal County.

### 4.3.2 RECOMMENDATIONS

Because a high-quality aviation system is essential to modern economic/commercial systems and general quality of life, it is recommended that a RASP be prepared for the CAG Region. The RASP would provide a comprehensive examination of future air transportation needs of the region with the aim of maximizing the transportation and economic benefits of airports, while minimizing any adverse impacts related to ground congestion, the environment, and airspace. Coordination with the FAA would be required as it is the agency responsible for the planning and management of the airspace.

A RASP would provide the foundation for a regional strategy that is capable of meeting air passenger and air freight needs in the future. The goal of a RASP is to lay the groundwork for developing a regional airport system that will be responsive to the location of potential future users, i.e., air travelers and shippers. The RASP would give definition to facility needs and provide guidance for developing a range of services with the best mix of efficiency, convenience, and reliability. The RASP essentially would be technical documentation of the region's GA airport system planning process. It would identify and discuss issues and trends affecting CAG Region airports, provide a detailed inventory of the existing regional airport system, generate GA forecasts, provide an analysis of system capacity and the ability to serve future passenger and freight demands, formulate a GA airport system improvement strategy to guide airport operators/sponsors and ADOT decision-making, and establish a regional airport system CIP. The RASP also would provide supporting discussions addressing critical airport-related planning issues, such as airport compatible land use and airport ground access. The RASP would provide state aviation officials and the FAA with a better understanding of airport roles in the CAG Region and set forth rational guidance in support of timely infrastructure investment.



## 5.0 ROADWAY ELEMENT

### 5.1 BACKGROUND

The Roadway Element seeks to establish the framework for creating effective actions and strategies to ensure the continued adequacy of the roadway network and supporting infrastructure (e.g., bridges, signalization, signage, etc.). It identifies the future roadway network needed to facilitate the movement of residents, visitors, and commercial vehicles within and through the community in an efficient and effective manner. The focus of the Roadway Element is concerned with the physical highways, roads, and streets necessary to accommodate mobility and accessibility throughout the CAG Region associated with cars, buses, trucks, bicycles, and walking.



A key feature of the Roadway Element is the classification of highways, roads, and streets into a hierarchical network based on established roadway types and associated design standards. The hierarchy is defined by a forecast of future traffic volumes driven by projections of growth in population and employment. The forecasted volumes provide a means of quantifying Average Annual Daily Trips (AADT) on the various facilities that form the roadway network. AADT is used to determine a roadway's Level of Service (LOS), which is a measure of the adequacy to accommodate forecasted travel demand.

### 5.2 FUTURE TRAVEL DEMAND

During development of this RTP, CAG worked with ADOT to use its Arizona Travel Demand Model – Phase 2 (AZTDM2) to develop a CAG focus area model that provided more detail with respect to the CAG Region's roadway network. Population and employment data derived from the



2010 Census (as presented in Chapter 2) was disaggregated into a refined network of TAZs for use with the CAG Region Subarea Travel Demand Model. Once the model was updated, existing conditions traffic volumes in the CAG Region were extracted from the AZTDM2 model and reasonability checks to actual counts were conducted and satisfied. The revised subarea network and TAZ data were then used to produce an updated forecast of long-range travel demand and roadway network performance in the CAG Region. The CAG Region Subarea Travel Demand Model provided the

foundation for identifying transportation deficiencies and developing multimodal infrastructure improvement alternatives to address those deficiencies. Forecasts of future travel demand were developed for short-, mid-, and long-term conditions (2020, 2030, and 2040).

## 5.3 ALTERNATIVES EVALUATION

### 5.3.1 DEFINITION OF ALTERNATIVES

Based on forecasts of future traffic levels operating on the regional roadway network and other factors, several alternatives were developed to address current and expected future network deficiencies. These roadway network alternatives were presented at a Transportation Technical Advisory Committee Meeting (TTAC) on August 14, 2014. The presentation focused on network connectivity and performance with particular regard to the LOS provided. At this meeting, four alternatives initially were defined for the Committee to review, including a Base Condition Roadway System or No-Build Alternative (Figure 17).

**No-Build Alternative** – This also is referenced as the Base Condition Roadway System, which means that no other improvement projects beyond those already identified and programmed for implementation would be funded or constructed. This alternative essentially implies that the region can live with what they have today with a few improvements here and there, as may be identified in currently adopted plans.

**Alternative A, Minimal Improvement** – This alternative would not go far beyond the No-Build Alternative, in that it includes only major projects being planned at this time. The alternative was limited to the following improvements:

- Extending SR 24 to US-60;
- US-60 Bypass to the west of Gold Canyon;
- Partial implementation of the proposed North-South Corridor from Selma Highway to Apache Junction;
- Extension of McCartney Road east to connect I-10 with SR 79;
- Extension of Val Vista Road west to beyond SR 347 in Maricopa;
- Improvements to major north-south arterials in west Casa Grande;
- Bypass around the southeast side of Payson to connect SR 86 with SR 260.

**Alternative B, Enhanced Regional Connectivity** – This alternative augments Alternative A by incorporating major improvements on key regional routes in the populated western portion of the CAG Region. SR 347, SR 387, SR 287, and the Hunt Highway were designated to be upgraded to 6-lane facilities. Also, SR 87 between Coolidge and Maricopa County and the Maricopa-Casa Grande Highway (MCGH) were slated to be upgraded to a 4-lane roadway.

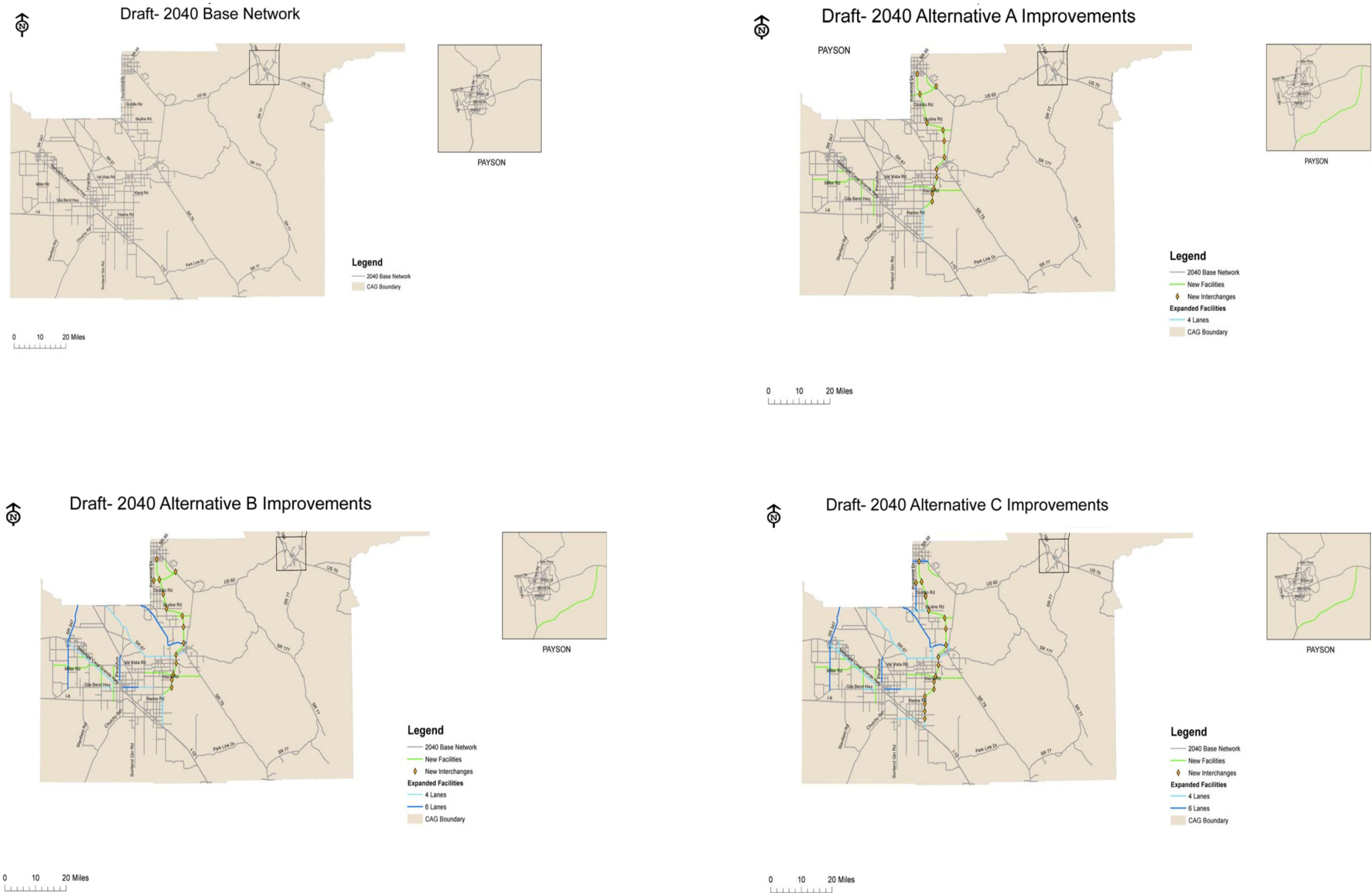
**Alternative C, Full North-South Corridor** – To recognize the planning work being performed with respect to the North-South Corridor, this alternative carried forward all the projects of Alternatives A and B and added the southern end of the North-South Corridor to create the direct connection with I-10. However, this alternative eliminated the extension of SR 24 to US-60; therefore, other improvements to arterials in Queen Creek, San Tan Valley, and Apache Junction were incorporated to satisfy expected travel demand in northern Pinal County.

Discussions with the TTAC revealed that Alternative A, as defined, would not provide a sufficient remedy for expected regional travel demand, particularly with respect to improving connectivity with the Phoenix metropolitan area. Therefore, Alternative A was eliminated from further consideration. The TTAC review led to the evolution of Alternatives B and C into two additional roadway network improvement plans with varying connectivity in northern Pinal County between the future North South Corridor, SR 24, and US-60. A definition of each resulting alternative is presented below.





FIGURE 17 – INITIAL ROADWAY NETWORK IMPROVEMENT ALTERNATIVES







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- **Alternative B, Enhanced Regional Connectivity** – This alternative provides the highest level of regional connectivity for the northern portion of Pinal County and supports improved access to Gila County. It includes direct connection of the North-South Corridor to US-60 into Apache Junction and southeast of Gold Canyon. SR 24 is extended to US-60 southeast of Gold Canyon and has an interchange with the North-South Corridor. The alternative includes the arterial improvements noted above.
- **Alternative C, Full North-South Corridor with Elimination of SR 24/US-60 Link** – This alternative adopts the full North-South Corridor alignment between I-10 in Eloy and US-60 in Apache Junction and provides connectivity to US-60 via the North-South Corridor only. Additional arterial improvements are included as well as adding a lane in each direction on US-60 eastward to Mountain View Road. This alternative, however, does not maintain the SR 24 connection with US-60, terminating it at the North-South Corridor.
- **Alternative D, Foreshortened North-South Corridor and Elimination of SR 24/US-60 Link** – This alternative adds to Alternative C two interchanges on I-10 to serve the growing Casa Grande and Eloy communities and adds capacity to MCGH by expanding it to six lanes through Maricopa. However, the North-South Corridor is foreshortened at SR 24, and SR 24 is not continued east to US-60. To compensate for the loss of connectivity via the two freeways links, Ironwood Road would be widened to six lanes between SR 24 and US-60 in Apache Junction.
- **Alternative E, Foreshortened North-South Corridor with SR 24/US-60 Link** – This alternative is the same as Alternative D, but re-establishes the SR 24/US-60 link, with the North-South Corridor terminating at SR 24. The SR 24 link to US-60 enhances connectivity and improves access to Gila County. All other proposed improvements have been carried forward from Alternative C

## 5.3.2 TRAVEL DEMAND ANALYSIS

The purpose of the travel demand analysis is to examine and compare the performance of the four alternative roadway networks relative to the Base Condition. **Table 15** reveals that each of the proposed roadway network packages would perform well relative to the 2040 Base Condition. Generally, the level of congestion on the region's highways and roadways would be reduced. The travel demand modeling results indicate Alternatives D and E would provide the greatest relief from congestion as the CAG Region continues to grow.

TABLE 15  
COMPARISON OF 2040 ALTERNATIVE NETWORK PERFORMANCE

Alternative	Vehicle Miles Traveled (VMT)	Vehicle Hours Traveled (VHT)	% Congested Roadway Miles	% Congested VMT	% Congested VHT
Base	20,935,974	505,325	12%	36%	47%
Alt B	22,363,664	452,813	8%	27%	28%
Alt C	22,435,094	445,952	7%	25%	26%
Alt D	22,416,999	450,763	6%	18%	21%
Alt E	22,562,312	452,156	6%	17%	20%

**Figure 18** through **Figure 21** indicate how the final four build alternatives were modified to establish the required roadway network to accommodate forecasted travel demand, i.e., correct for deficiencies revealed by travel demand modeling of the proposed network. Modifications to the



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FIGURE 18 – 2040 IMPROVEMENTS: ALTERNATIVE B

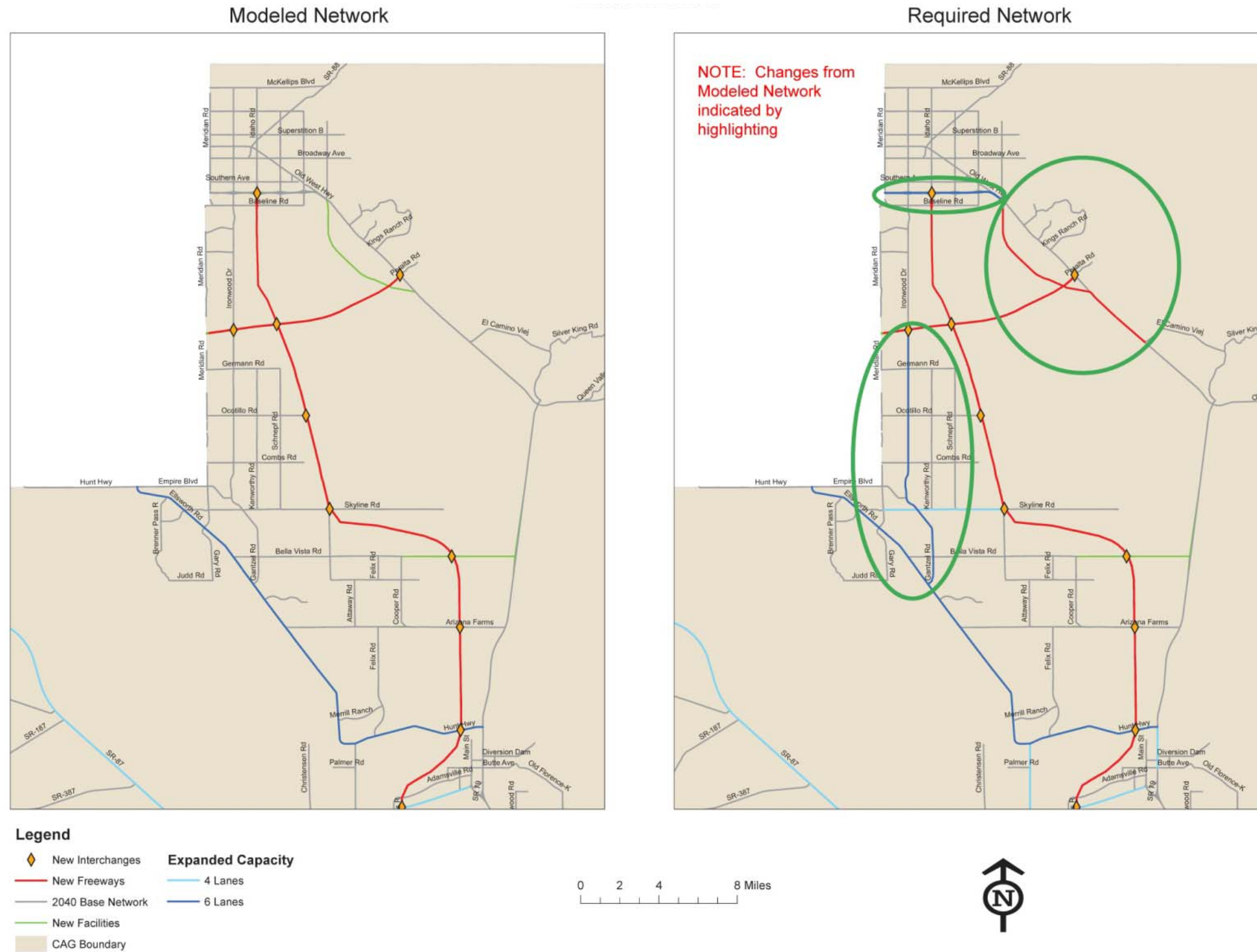


FIGURE 19 – 2040 IMPROVEMENTS: ALTERNATIVE C

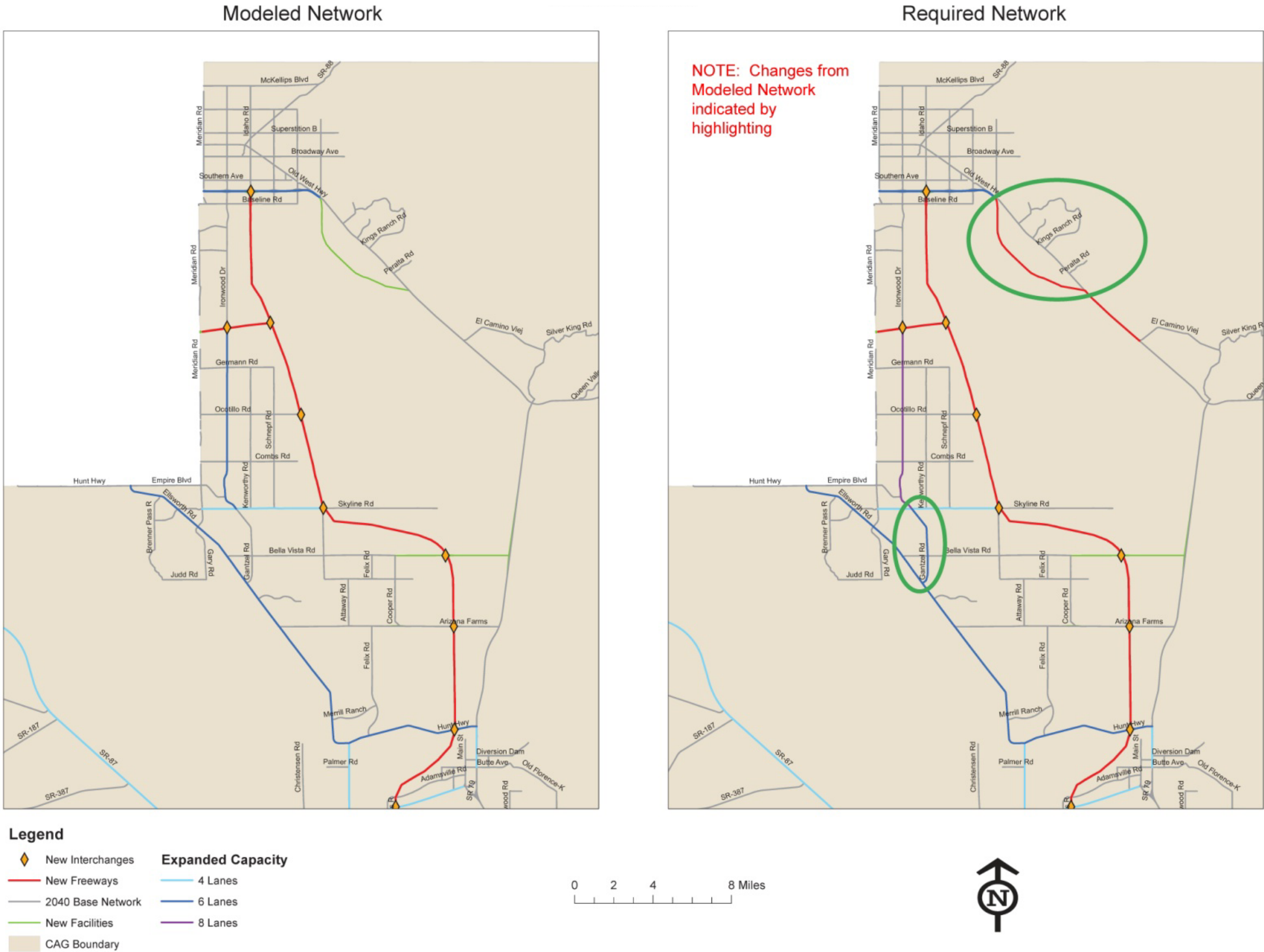




FIGURE 20 – 2040 IMPROVEMENTS: ALTERNATIVE D

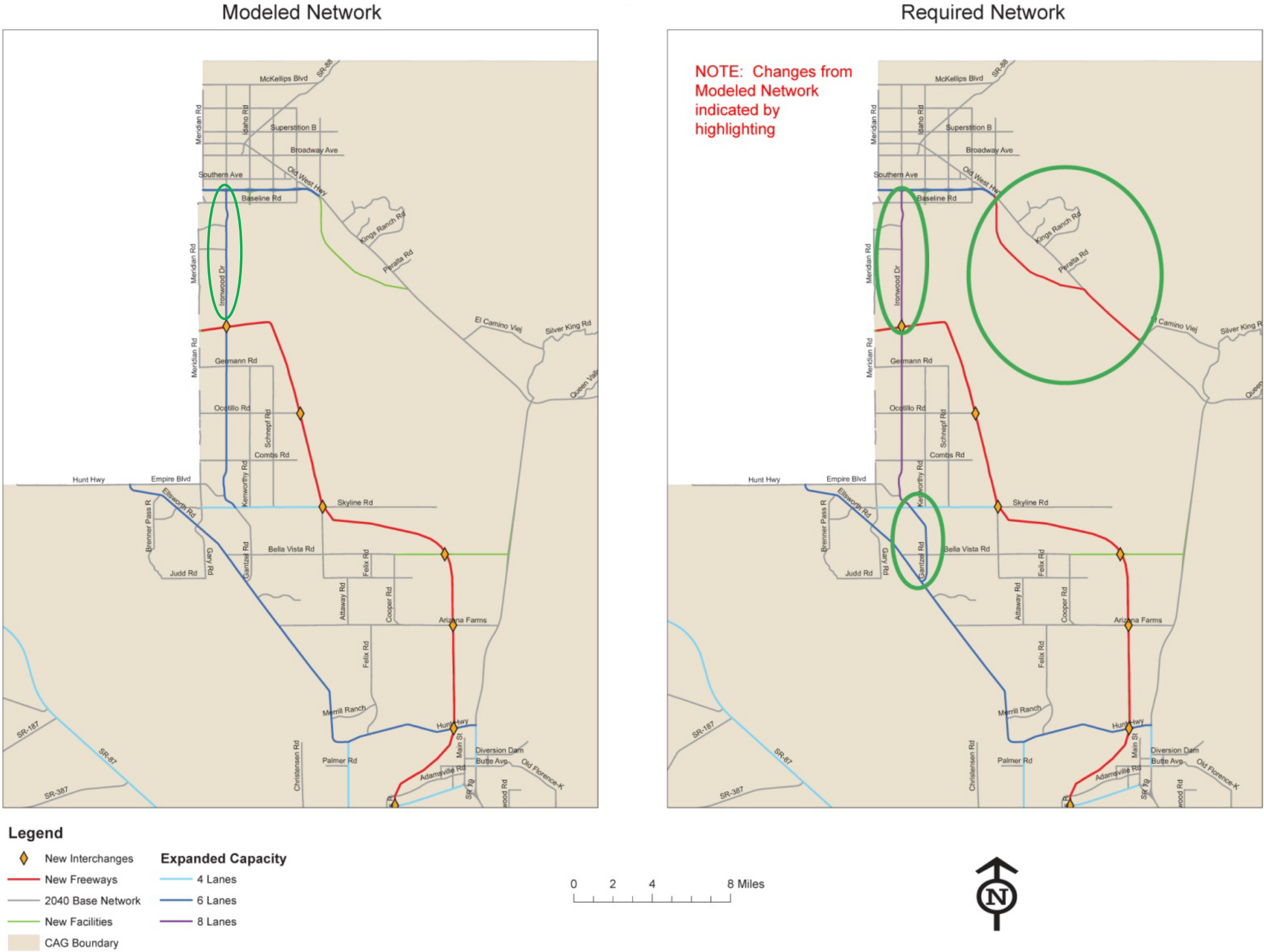
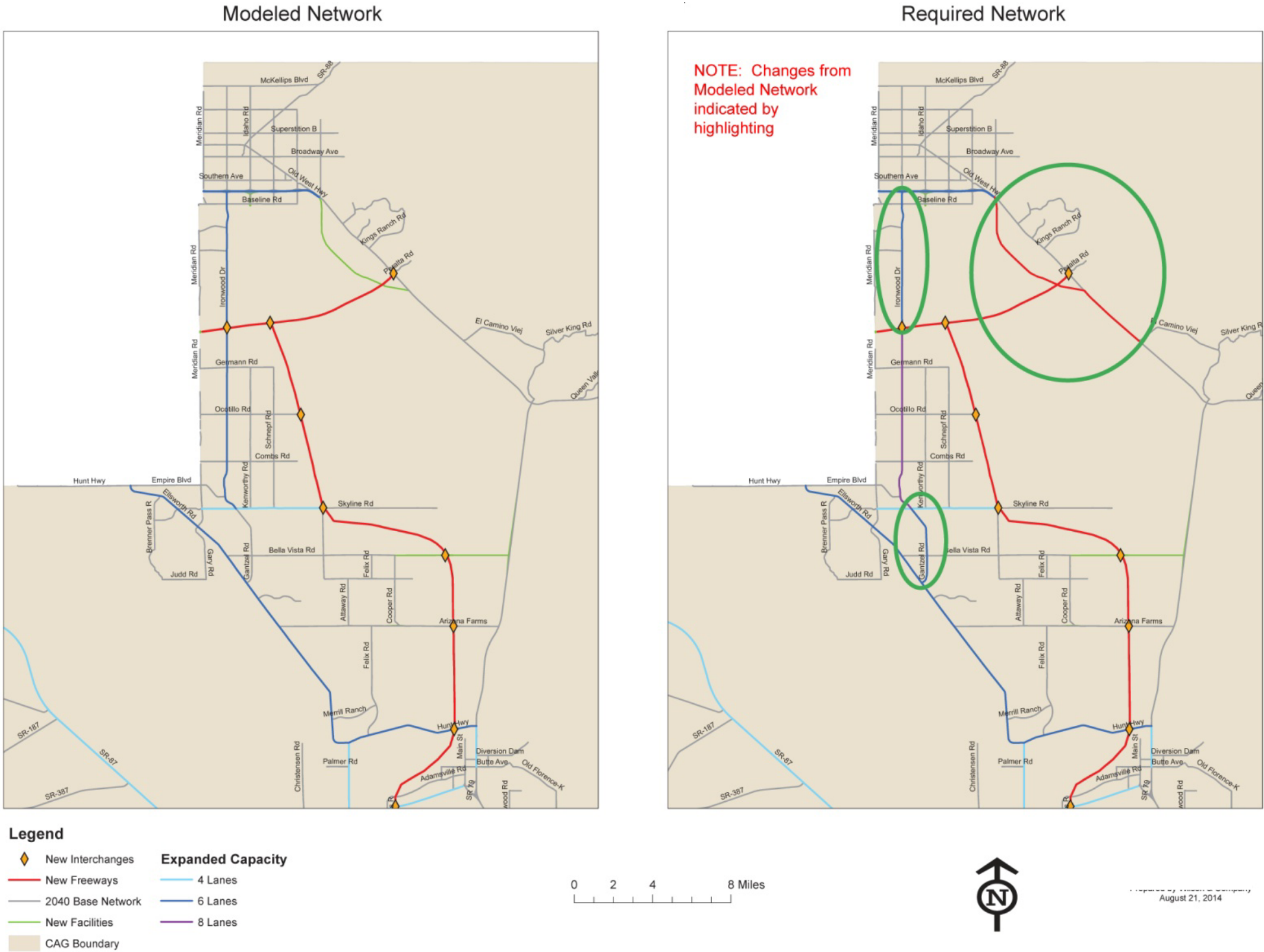


FIGURE 21 – 2040 IMPROVEMENTS: ALTERNATIVE E



alternative roadway networks were required only in the northern portion of Pinal County; therefore, **Figure 18** through **Figure 21** show only the portion of the affected network in northern Pinal County. The graphic on the left in each figure illustrates the initial proposed network assumptions adopted for the purpose of conducting travel demand modeling of the four alternatives and the 2040 Base Condition.

The graphic on the right side in each figure shows the improvements “required” to mitigate capacity deficiencies identified by the estimated traffic volumes forecasted with each model run. The graphics depicting the Required Network reveal there are few commonalities among the build alternatives:

- US-60 should be reconstructed as a six-lane facility between Signal Butte Road and Mountain View Road, joining with a new alternate route around Gold Canyon west of the existing US-60;
- The new US-60 Gold Canyon Alternate Route should be constructed as a controlled access 4-lane freeway facility;
- US-60 between the Gold Canyon Alternate Route and El Camino Viejo should be reconstructed as a controlled access 4-lane freeway facility.

The most significant variation among the build alternatives, aside from the level of connectivity to US-60, is the number of lanes required on Ironwood Road. **Table 16** provides a comparison of the lane requirements for each alternative relative to freeway connectivity with US-60. It is evident from **Table 16** that required investments in local arterial infrastructure in the northern portion of Pinal County decreases as the investment in freeway connectivity increases.

TABLE 16  
LANE REQUIREMENTS ON IRONWOOD DRIVE/GANTZEL ROAD BY ALTERNATIVE

Segment	Alternative B	Alternative C	Alternative D	Alternative E
<b>Freeway Connectivity</b>				
SR 24 to US-60	Yes	No	No	Yes
N-S Corridor to US-60	Yes	Yes	No	No
<b>Number of Lanes on Ironwood Drive/Gantzel Road</b>				
US-60 to SR 24	4	4	8	6
SR 24 to Skyline Drive	6	8	8	8

For example, Alternative B provides the highest level of freeway connectivity with SR 24 extending eastward to US-60 south of the Gold Canyon area and the North-South Corridor extending north to US-60 in Apache Junction. The capacity provided by these freeway links leads to a requirement for fewer lanes on Ironwood Drive/Gantzel Road.

Conversely, Alternative D provides the lowest level of freeway connectivity; SR 24 is terminated at the North-South Corridor, and the North-South Corridor connects westward into SR 24. This results in drivers looking to travel into and out of Apache Junction from the San Tan Valley to use Ironwood Drive. Thus, this redirected travel pattern results in the greatest number of lanes on Ironwood Road.

## 5.4 RECOMMENDED IMPROVEMENTS

The results of the travel demand analysis and modifications of the build alternative roadway networks to mitigate forecasted deficiencies were presented to stakeholders. Stakeholder feedback was solicited regarding (1) the preference for freeway connectivity, (2) the relationship of freeway connectivity to the desired access to future developing areas, and (3) the associated level of





investment in local infrastructure. A matrix was developed to focus assessment on the advantages and disadvantages associated with each build alternative and the No Build Alternative. Alternative actions were evaluated with respect to five goals and associated objectives, including:

- **Consistency with Local Plans**, which encompasses plans for new development (proposed or entitled) and projects identified in studies or plans developed to address future growth;
- **Safety and Mobility**, which addresses issues of travel and congestion as well as subregional connectivity;
- **Compatibility with Environmental Objectives and Aims**, which focuses on flooding and drainage issues, potential impacts on cultural, historic, wildlife, and natural environmental (parks) resources, and minimizing the potential to worsen air quality;
- **Estimated Cost of Project Improvements**, which recognizes capital construction costs, right-of-way acquisition, long-term operations and maintenance (O&M) expenses, and utilization as a measure of infrastructure lifetime; and
- **Ease of Implementing the Recommended Improvements**, which gives attention to the need to have local acceptance of the proposed projects as well as buy-in at the Federal and state level with support from stakeholders and affected communities.

Figure 22 presents the evaluation matrix and indicates that the preferred alternative is Alternative D, which is defined by a foreshortened north-south corridor and elimination of the SR 24/US-60 link. This alternative would provide enhanced connectivity between SR 24 and US-60 along Ironwood Drive. This would provide a high-capacity alternative routing for traffic on the North-South Corridor relative to origins and destinations in Apache Junction. In addition, if improvements to US-60 were made; it would be widened and extended south of the Gold Canyon area. The US-60 widening would improve travel efficiency between the northern portion of Pinal County and Gila County and Maricopa County. At the same time, the new connection between the planned North-South Corridor and Loop 202 to the west would support improved accessibility and mobility between the growth areas of western Pinal County and activity centers in eastern Maricopa County. The connection of the North-South Corridor and SR 24 also would provide a viable alternative route between southeastern Maricopa County and the Tucson metropolitan area to the south, taking pressure off of the heavily traveled segment of I-10 between Maricopa County and Eloy. Alternative D, which is shown as , also includes a number of arterial road improvements.

## 5.4.1 RECOMMENDATIONS FOR GILA COUNTY

Growth projections for Gila County indicate there will be little growth in local traffic movements; however, the level of tourist traffic in the County is anticipated to continue and likely increase. Thus, the only improvement recommended in Gila County is the SR 87/SR 260 alternate route southeast of Payson, which would provide a more expeditious connection between SR 87 and SR 260. This alternate route would significantly reduce congestion at the existing SR 87/SR 260 intersection in the center of Payson, particularly on days when there is a great amount of travel between the Phoenix metropolitan area and the White Mountain communities.

## 5.4.2 RECOMMENDATIONS FOR PINAL COUNTY

Pinal County is located between the two largest metropolitan areas in the state, is served by two Interstate highways, and has the potential to become a nationally significant freight corridor. As such, improvement to the interstate and regional highways will be essential, and improvements to major arterial roadways will be necessary to accommodate increased travel demand both locally and subregionally.





FIGURE 22 – EVALUATION OF ALTERNATIVES

Goals and Objectives	Improvement Options					
	No-Build	Alt A	Alt B	Alt C	Alt D Preferred	Alt E
<b>Local Plan Consistency</b>						
Support existing, expanding, or new development	●	○	○	●	○	⊗
Projects are identified in existing corridor study or comprehensive plan	●	⊗	⊗	⊗	○	⊗
<b>Local Plan Consistency Subtotal</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>9</b>	<b>6</b>	<b>8</b>
<b>Safety &amp; Mobility</b>						
Minimize daily Vehicle Miles Traveled (VMT)	●	●	⊕	⊗	○	●
Minimize the number of lane miles on all facilities operating at LOS E or F	●	⊗	○	⊗	●	●
Minimize the percent of congested (LOS E or F) daily Vehicle Hours Traveled (VHT)	●	⊗	○	⊗	●	●
Provide additional subregional connectivity	●	○	○	●	⊗	●
<b>Safety &amp; Mobility Subtotal</b>	<b>8</b>	<b>8</b>	<b>13</b>	<b>15</b>	<b>17</b>	<b>16</b>
<b>Environmental Compatibility</b>						
Minimize impacts associated with crossing of floodplains or disturbance of drainage features	●	●	●	○	⊗	⊗
Minimize impacts to resources protected under Section 4(f) – Parks – and 6(f) – Historic & Archaeological Site and Known or Likely Sensitive Environmental Habitats and Wildlife Corridors	⊗	●	⊗	●	○	⊗
Minimize daily VHT	●	⊗	○	●	⊗	○
<b>Environmental Compatibility Subtotal</b>	<b>10</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>11</b>	<b>7</b>
<b>Cost</b>						
Minimize capital and right of way costs	●	⊗	○	●	⊗	●
Minimize operating and maintenance cost (Total Lane Miles)	●	⊗	⊗	●	○	●
Minimize VHT per Lane Mile - Maximize roadway network productivity	●	⊗	○	●	⊗	⊗
<b>Cost Subtotal</b>	<b>11</b>	<b>10</b>	<b>8</b>	<b>7</b>	<b>9</b>	<b>6</b>
<b>Ease of Implementation</b>						
Maximize the likelihood of acceptance by local elected officials	●	⊗	○	⊗	⊗	●
Maximize the likelihood of acceptance by outside agencies, stakeholders & the community	●	⊗	○	○	⊗	●
<b>Ease of Implementation Subtotal</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>10</b>
<b>GRAND TOTAL</b>	<b>33</b>	<b>31</b>	<b>38</b>	<b>47</b>	<b>51</b>	<b>47</b>

LEGEND

● Strong Disadvantage = 1

⊗ Disadvantage = 2

○ Neutral = 3

⊗ Advantage = 4

● Strong Advantage = 5

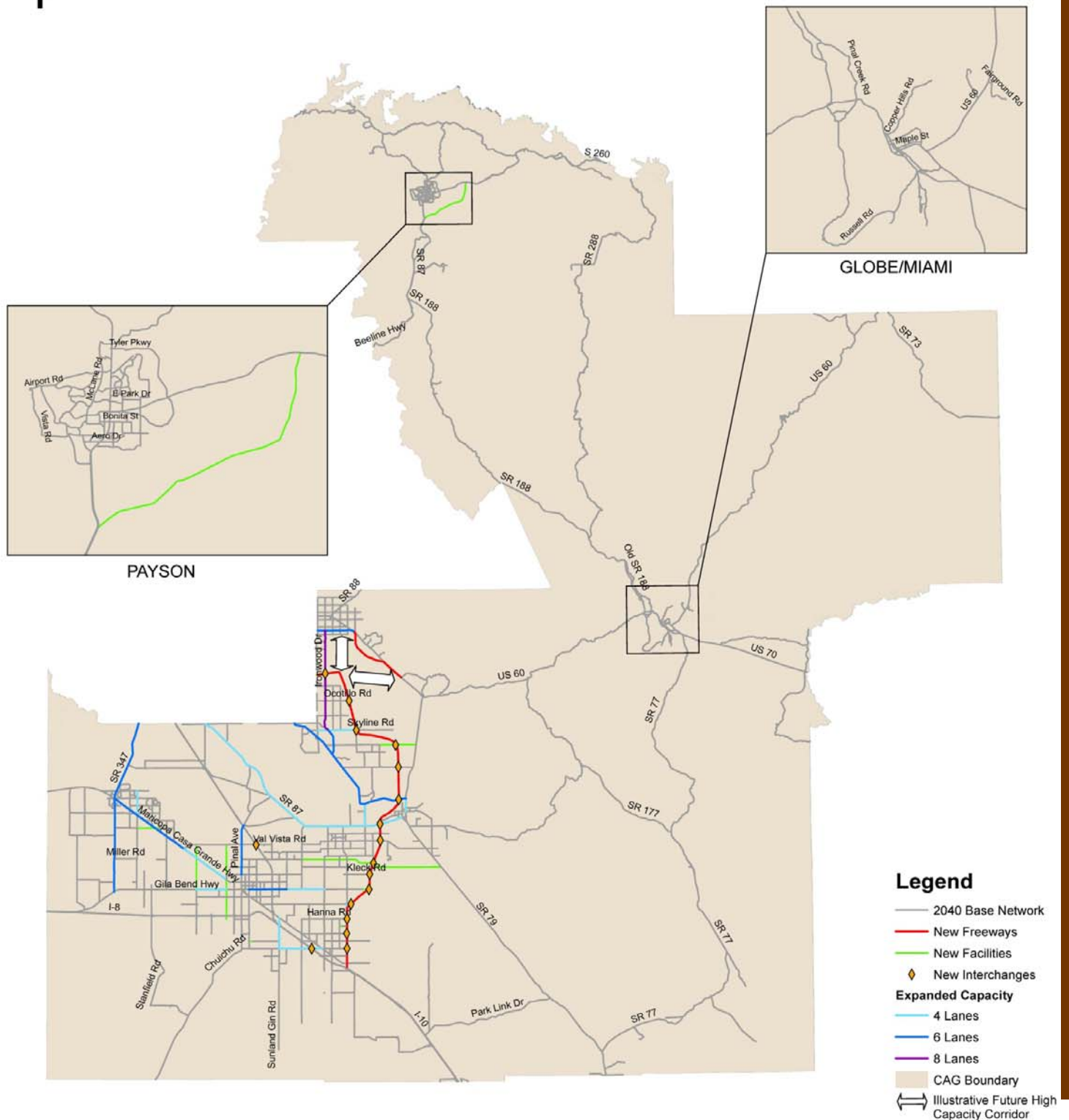


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FIGURE 23 – PREFERRED ALTERNATIVE



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**SR 24/Williams Gateway Freeway** – This new freeway originates at the Loop 202 in southeastern Maricopa County and the preferred alignment follows a southeasterly route to Frye Road, between Williams Field and Pecos roads. An illustrative corridor is presented east of this location to indicate ADOT's intent to continue SR 24 eastward to US-60. An alternate route to the west of the community of Gold Canyon is also planned that would depart from US-60 north of the community in the vicinity of Mountain View Road. The alternate route would reconnect with US-60 south of the Arizona Renaissance Festival entertainment venue. Current thinking regarding the alignment of SR 24 has the roadway connecting with US-60 in the vicinity of the southern end of this Gold Canyon alternate route. Based on travel demand modeling performed in support of this RTP, SR 24 would connect with the North-South Corridor in the vicinity of the Schnepf Road alignment, approximately two miles east of Ironwood Road.

**North-South Corridor** – Alternative alignments for this major regional highway have been identified and plans soon will be adopted for a new freeway facility with the objective of connecting I-10 in the south with northern Pinal County and southeastern Maricopa County. The recommended connection with SR 24 will provide a critical alternative for travel between I-10 and the Phoenix metropolitan area. This freeway facility will also support economic development along its route and provide support for the growing communities of Eloy, Coolidge, and Florence as well as northern Pinal County. An illustrative corridor is presented north of SR 24 to indicate the potential for future extension to US-60.

**New Regional Facilities** – Five new regionally-significant roadways are recommended for Pinal County. The aforementioned Gold Canyon Alternate Route would improve mobility in the northern portion of the County by relieving congestion on US-60 through Gold Canyon and expediting the movement of through traffic. This improvement would benefit communities in northeastern Pinal County and Gila County. Other regional arterials to be developed would include the east-west facilities identified in **Table 17**. (Note: Interchange development will involve ADOT and multiple jurisdictions.)

**Expansion of Existing Capacity** – Twenty existing travel corridors are recommended to be improved by widening the roadways to increase traffic capacity, improve safety, and enhance mobility. In addition, twenty new interchanges with regional freeway facilities are recommended. **Table 18** identifies these recommended improvements.

## 5.5 IMPLEMENTATION OF RECOMMENDED IMPROVEMENTS

Following definition of the recommended long-term (Year 2040) improvements, additional analysis was conducted to determine the appropriate need and timing for the various improvements. Analysis focused on defining deficiencies in the near-term (Year 2020) and mid-term (Year 2030) timeframes based on forecasted travel demands. Improvements to address identified deficiencies were then categorized for near-term, mid-term, or long-term implementation. through **Figure 24** illustrate the recommended phasing of the improvements.



TABLE 17  
NEW ROADWAY NETWORK IMPROVEMENTS SLATED FOR CAG REGION

Facility	Location	Purpose	Jurisdiction
<b>New East-West Roadways</b>			
Arizona Farms Road (San Tan Valley)	Hunt Highway to SR 79	Construct new facility to connect two roadways	ADOT, MAG, Pinal County
McCartney / Randolph	I-10 to SR 79	Establish connection between two roadways	ADOT, SCMPO, Coolidge, Casa Grande, Pinal County
Peters & Nall Road	SR 347 to Maricopa-Casa Grande Highway (MCGH)	Construct new facility to connect two roadways	MAG, Queen Creek, Pinal County, Florence
<b>New North-South Roadways</b>			
Montgomery Road	MCGH to SR 84 (Gila Bend Highway) and I-8	Connect extension of Val Vista Road (Planned) to SR 84 and I-8	ADOT, SCMPO, Casa Grande
Thornton Road	MCGH to SR 84 (Gila Bend Highway) and I-8	Connect extension of Val Vista Road (Planned) to SR 84 and I-8	ADOT, SCMPO, Casa Grande
<b>New Freeway Interchanges</b>			
<b>SR 24/Williams Gateway Freeway</b>			
Ironwood Road	North-South Corridor (Planned)		US-60
<b>North-South Corridor Freeway (Planned)</b>			
SR 24/Williams Gateway Freeway Ocotillo Road Skyline Road Arizona Farms Road Hiller Road SR 287 Kenilworth Road		McCartney/Randolph Road Kleck Road SR 287/Casa Grande-La Palma Highway Selma Highway Battaglia Road Hanna Road Shedd Road I-10	
<b>Interstate 10 Freeway</b>			
Val Vista Road		Battaglia Road	



TABLE 18  
RECOMMENDED CAPACITY INCREASES

Facility	Location	Jurisdiction
<b>Widen Roadway to Four Lanes</b>		
White & Parker Road	Maricopa-Casa Grande Highway (MCGH) to Smith Enke Road	MAG, Maricopa, Maricopa
MCGH	Thornton Road to Extension of Val Vista Road (Planned)	SCMPO, Casa Grande
SR 84 / Gila Bend Highway	Montgomery Road to Thornton Road	ADOT, SCMPO, Casa Grande
Sunland Gin Road	Casa Grande / Picacho Road to Battaglia Road	SCMPO, Eloy, Casa Grande, Pinal County
Battaglia Road	Sunland Gin Road to 11 Mile Corner Road	SCMPO, Eloy, Pinal County
SR 287	Overfield Road to 11 Mile Corner Road	ADOT, SCMPO, Pinal County, Coolidge, Eloy
SR 87	Maricopa / Pinal County Line to SR 287	ADOT, SCMPO, Gila River Indian Community, Coolidge
SR 287	SR 87 to SR 79	ADOT, SCMPO, CAG, Coolidge, Florence
SR 79	Diversion Dam Road and Hunt Highway	ADOT, CAG, Florence
Attaway Road	SR 287 to Hunt Highway	MAG, SCMPO, Florence, Pinal County, Coolidge
Skyline Drive	Gary Road to North-South Corridor (Planned) in the vicinity of Quail Run Lane	ADOT, Pinal County, Florence
<b>Widen Roadway to Six Lanes</b>		
SR 347	SR 84 to Maricopa County (Note: Improvement would include SR 347 in Maricopa County to I-10 at Queen Creek Road)	ADOT, MAG, Maricopa, Gila River Indian Community (Maricopa County, Chandler)
MCGH	SR 347 to Extension of Val Vista Road (Planned)	MAG, SCMPO, Maricopa, Gila River Indian Community, Casa Grande
SR 387 / Pinal Avenue	I-10 and Cottonwood Lane	SCMPO, Casa Grande
SR 287 / Florence Boulevard	Trekell Road and Overfield Road	SCMPO, Casa Grande
US-60	Meridian Road (Maricopa / Pinal County Line) to Mountain View Road	ADOT, MAG, CAG, Pinal County, Apache Junction
Ironwood Drive	US-60 and Ocotillo Road	MAG, Pinal County, Apache Junction, Queen Creek
Gantzel Road	Skyline Road and Hunt Highway	MAG, Pinal County, Queen Creek, Coolidge
Hunt Highway	Empire Boulevard (Maricopa / Pinal County Line) to SR 79	MAG, Pinal County, Queen Creek, Coolidge
<b>Widen Roadway to Eight Lanes</b>		
Ironwood Drive / Gantzel Road	Ocotillo Road and Skyline Road	MAG, PAG, Pinal County, Queen Creek



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**March, 2015**

FIGURE 23 – MID-TERM IMPROVEMENTS (YEAR 2030)

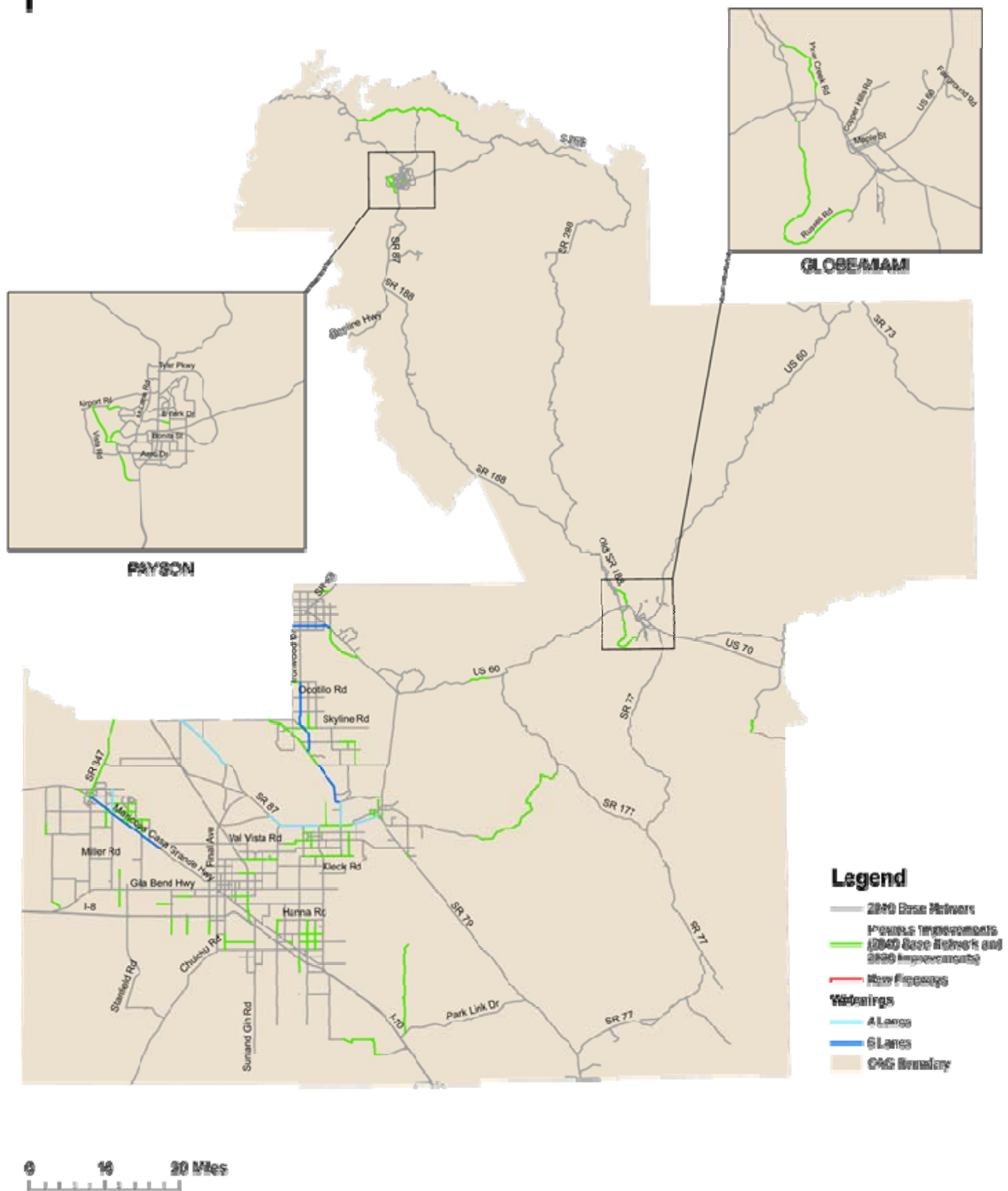
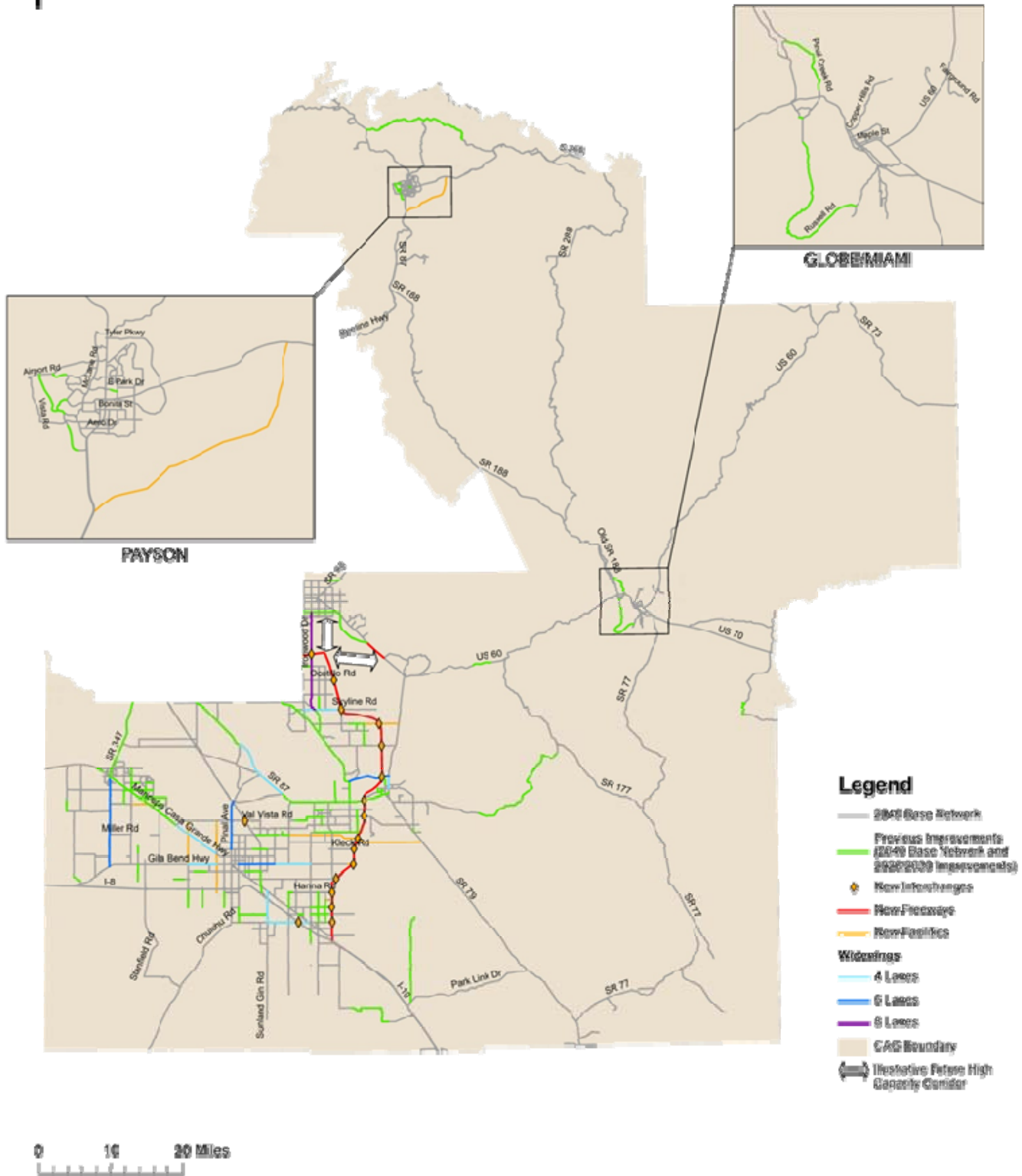
Prepared by: Wilson S. Guebara  
October 1, 2013



FIGURE 24 – LONG-TERM IMPROVEMENTS (YEAR 2040)



Prepared by Wilson & Company  
October 1, 2015



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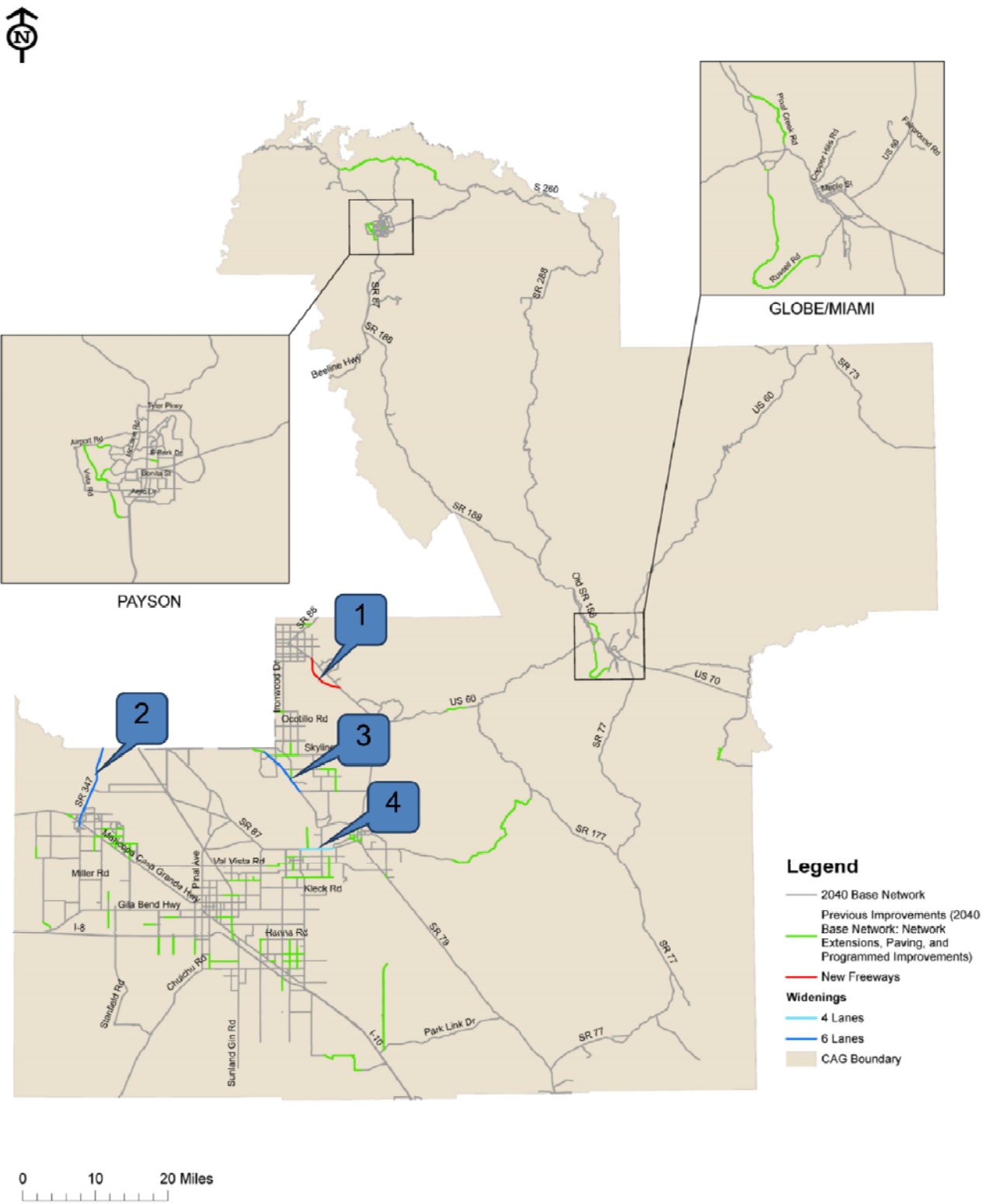


5.5.1 NEAR-TERM PROJECT PRIORITIES

Four key projects were identified for near-term implementation, as identified in Error! Reference source not found. and the map at the right.

TABLE 19  
RECOMMENDED NEAR-TERM PROJECTS

ID #	Facility	Location	Improvement	Jurisdiction
1	US-60 (Gold Canyon) Alternate Route	Meridian Road to Mountain View Road	Construct new 4-lane access controlled facility	ADOT, MAG, Apache Junction
2	SR 347	North of Maricopa Casa Grande Highway (MCGH)	Widen to 6 lanes	ADOT, MAG, Gila River Indian Community, Maricopa
3	Hunt Highway	North of Arizona Farms Road	Widen to 6 lanes	MAG, Queen Creek, Pinal County, Florence
4	SR 287 (Florence- Coolidge Highway)	SR 87 to Adamsville Road	Widen to 6 lanes	ADOT, MAG, SCMPO, Coolidge, Florence

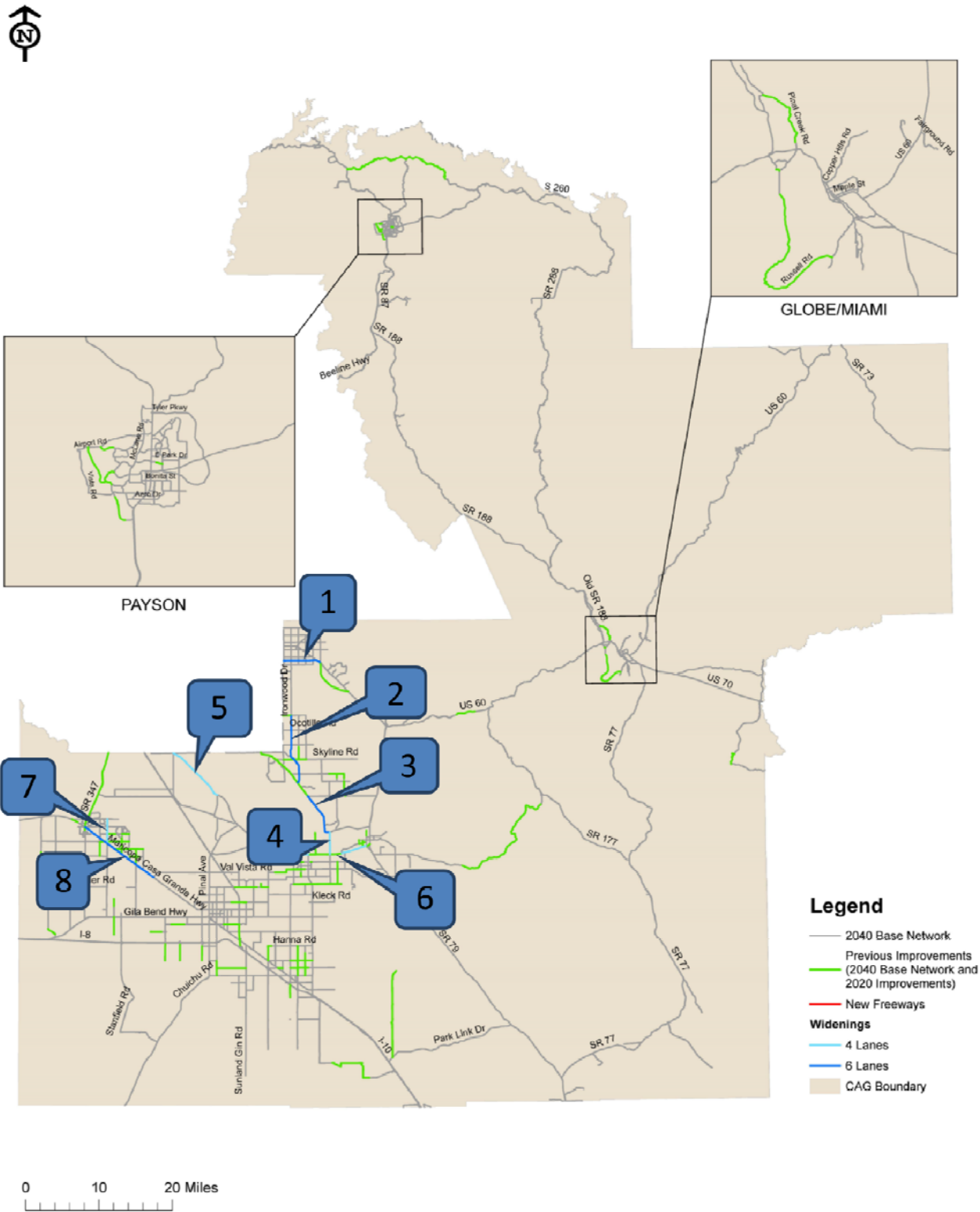


5.5.2 MID-TERM PROJECT PRIORITIES

Eight key projects were identified for mid-term implementation, as identified in **Table 20** and the map at the right.

Table 20  
Recommended Mid-Term Projects

ID #	Facility	Location	Improvement	Jurisdiction
1	US-60	Signal Butte Road to Mountain View Road	Widen to 6 lanes	ADOT, MAG, Apache Junction
2	Ironwood Drive	Germann Road to Bella Vista Road	Widen to 6 lanes	MAG, Queen Creek, Pinal County, Florence
3	Hunt Highway	Arizona Farms Road to Attaway Road	Widen to 6 lanes	MAG, SCMPO, Florence, Pinal County, Coolidge
4	Attaway Road	Hunt Highway to SR 287	Widen to 4 lanes	MAG, SCMPO, Florence, Pinal County, Coolidge
5	SR 87	North of Sacaton Road: SR 387 to SR 287	Widen to 4 lanes	ADOT, MAG, SCMPO, Gila River Indian Community, Coolidge
6	SR 287	Adamsville Road to SR 79	Widen to 4 lanes	ADOT, MAG, Florence
7	White and Parker Road	Smith-Enke Road to Maricopa Casa Grande Highway (MCGH)	Widen to 4 lanes	MAG, Maricopa
8	MCGH	SR 347 to Val Vista Road	Widen to 6 lanes	MAG, SCMPO, CAG, Maricopa, Ak-Chin Indian Community, Casa Grande

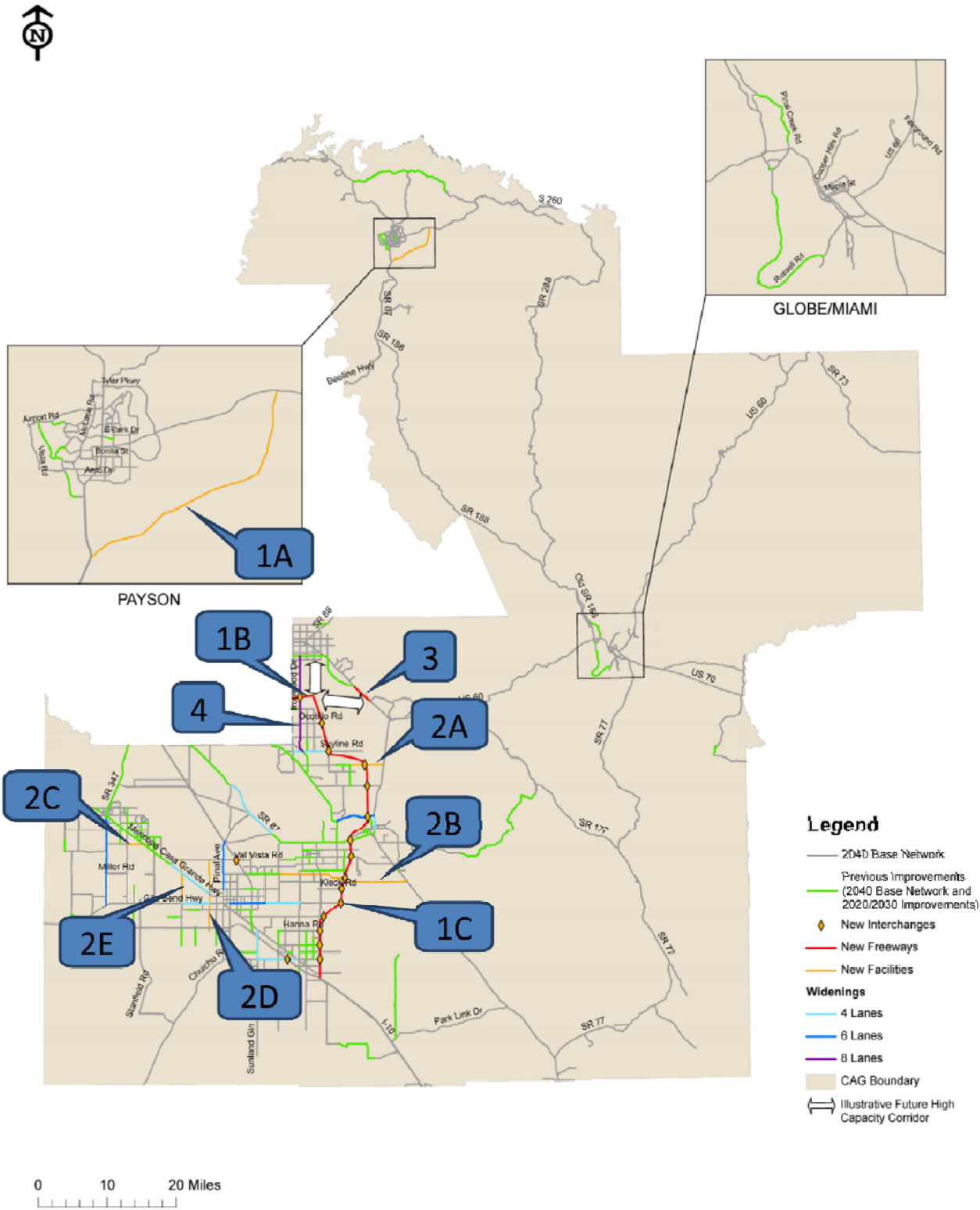


5.5.3 LONG-TERM PROJECT PRIORITIES

Fourteen specific roadway improvement projects were identified for long-term implementation, as identified in Error! Reference source not found., the map at the right, and the two maps on the following page. An additional eight potential projects aimed at the development or improvement of high-capacity corridors also have been identified.

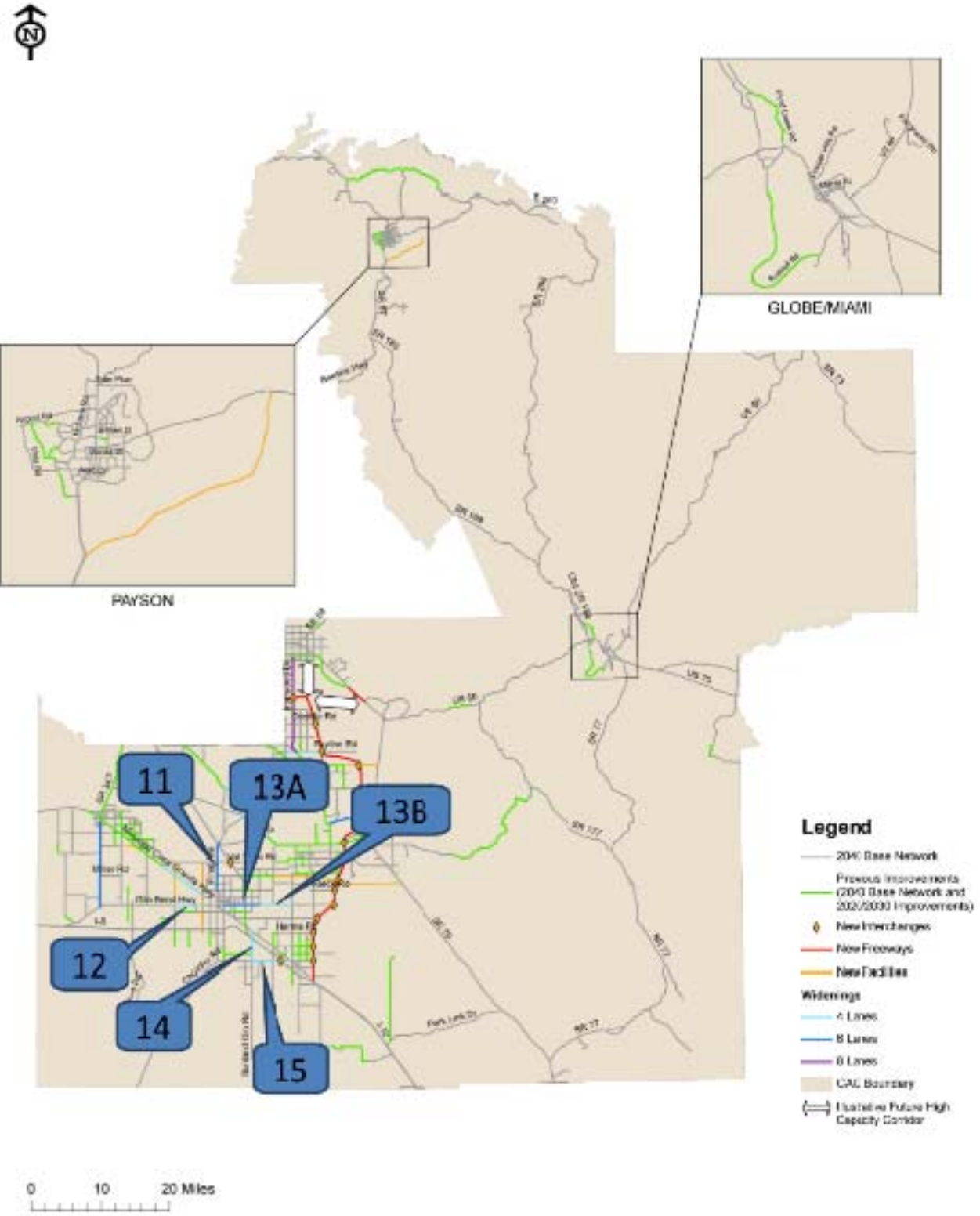
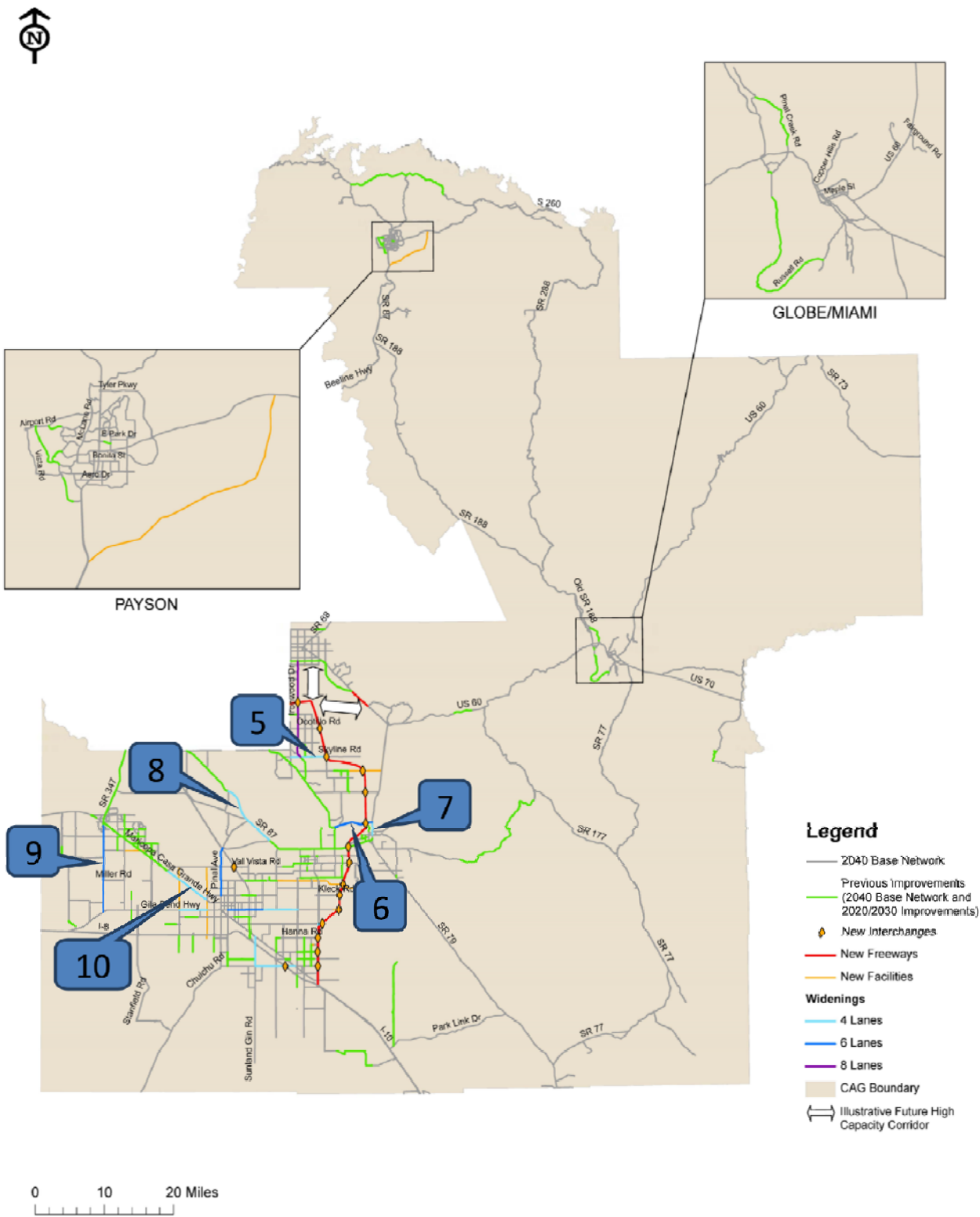
TABLE 21  
RECOMMENDED LONG-TERM PROJECTS

ID #	Facility	Location	Improvement	Jurisdiction
New High-Capacity/Freeway Corridors				
1A	SR 87/SR 260	Alternate Route		ADOT, CAG, Gila County, Payson, Star Valley
1B	SR 24			ADOT, MAG, Apache Junction
1C	North-South Corridor			ADOT, MAG, SCMP, AJ, Pinal County, Florence, Eloy, Coolidge
Provide New Linkages to New High-Capacity/Freeway Corridors				
2A	Bella Vista Road			MAG, Pinal County, Florence
2B	McCartney Road			SCMPO, Pinal County, Coolidge
2C	Peters & Nall Road			MAG, CAG, Ak-Chin Indian Community, Maricopa
2D	Montgomery Road			SCMPO, Casa Grande
2E	Burris Road			SCMPO, Casa Grande
Individual Roadways				
3	US-60	New Gold Canyon Bypass to El Camino Viejo	Reconstruct as controlled access facility	ADOT, MAG, Apache Junction, Pinal County
4	Ironwood Drive / Gantzel Road	US-60 to Skyline Road	Widen to 8 lanes	MAG, Apache Junction, Queen Creek, Pinal County, Florence
5	Skyline Drive	Hunt Highway to proposed North-South Corridor	Widen to 4 lanes	MAG, Pinal County, Florence
6	Hunt Highway	Attaway Road to SR 79	Widen to 6 lanes	MAG, Florence
7	SR 79	SR 287 to Hunt Highway	Widen to 4 lanes	ADOT, MAG, Florence
8	SR 87	Sacaton Road to SR 387	Widen to 4 lanes	ADOT, MAG, Gila River Indian Community
9	SR 347	Maricopa-Casa Grande Highway (MCGH) to Gila Bend Highway (SR 84)	Widen to 6 lanes	ADOT, MAG, CAG, Ak-Chin Indian Community, Maricopa
10	MCGH	Val Vista Road to Florence Boulevard	Widen to 4 lanes	SCMPO, Casa Grande
11	Pinal Avenue (SR 387)	I-10 to Kortsen Road	Widen to 6 lanes	ADOT, MAG, SCMP, Casa Grande, Gila River Indian Community
12	Gila Bend Highway (SR 84)	Montgomery Road to Burris Road	Widen to 4 lanes	ADOT, SCMP, Casa Grande
13A	Florence Boulevard (SR 287)	Trekell Road to Overfield Road	Widen to 6 lanes	ADOT, SCMP, Pinal County
13B	Florence Boulevard	Overfield Road to Eleven Mile Corner Road	Widen to 4 lanes	ADOT, SCMP, Pinal County, Coolidge, Eloy
14	Sunland Gin Road	Casa Grande-Picacho Highway to Battaglia Drive	Widen to 4 lanes	SCMPO, Eloy, Casa Grande, Pinal County
15	Battaglia Drive	Sunland Gin Road to Casa Grande-Picacho Highway	Widen to 4 lanes	SCMPO, Eloy, Pinal County





LONG-TERM PROJECTS (Continued)





## 6.0 ACCESS MANAGEMENT ELEMENT

Access management refers to the planning and design of roadways in a manner that strikes a balance between mobility of through traffic, and access to land uses adjacent to or abutting the roadway. The proper degree of access management depends on the facility type and its functional classification (refer to discussion of Functional Classification in Section 2.2.5). Access management actions generally fall into two major categories: (1) land use and development strategies, and (2) technical traffic engineering and roadway design tools. Although the RTP does not directly identify specific access management actions, it provides a framework for addressing this issue through advanced planning of travel corridors.

### 6.1 ACCESS MANAGEMENT BASICS

Access management practices are used to establish a desired level of access control on roadways in order to help retain the capacity of public highways, while ensuring reasonable access to private land and maintaining public safety. Access management is regulated through legal, administrative, and technical strategies that are available to a political jurisdiction under its police powers and authority to maintain the health, safety, and welfare of the jurisdiction's residents. Guidance presented here is intended for use by the various jurisdictions in the CAG Region, as well as developers, in evaluating access provisions associated with proposed land uses, site planning, and facility design.

Roadway access management provides the framework for balancing the public interest against private property rights.

#### 6.1.1 PROPERTY RIGHT OF ACCESS

Property rights that are protected by the U.S. Constitution, as well as the Arizona State Constitution, include the right of access. According to the Arizona Constitution (Article 2, Section 17), “no property shall be taken or damaged for public or private use without just compensation....” Thus, the owner of property abutting a public highway has a right of easement for the purpose of ingress to and egress from the owned property. This right or easement may not be taken or substantially impaired without due process and reasonable compensation. However, property right of access is not an absolute right and is subject to the public's right of passage.

All private property rights, including right of access, are susceptible to condemnation through a jurisdiction's power of eminent domain. Access rights are also always subject to reasonable regulation through police powers of local governments and the state for the public health, safety, and welfare. Thus, the right of access is a right of “reasonable” access and is not an absolute private right of direct access. However, once direct access has been established with respect to a non-controlled-access highway, the property owner gains an access easement. The property owner has the right to retain reasonable access to the property, which is access suitable for its highest and best use.

#### 6.1.2 AUTHORITY TO REGULATE ACCESS TO PUBLIC ROADS

As noted above, local governments and the State of Arizona have the power to regulate traffic on roads and highways. Such regulation could include any or all of the following roadway design applications:



- Curbing highways and restricting driveway location, spacing, size, and design;
- Regulating traffic flow;
- Determining the types of vehicles that may use a highway;
- Restricting traffic movement to one direction of travel; and
- Striping a highway or constructing a median divider that permanently limits property ingress and egress to one direction of travel.

Local governments and the state, acting in the general public interest, may close direct access to a property and provide alternative indirect access via a frontage road or another public road abutting the property. If the indirect access provides reasonable access for the highest and best use of the property, the owner is not entitled to damages. Also, the property owner is not necessarily due compensation even if the access is more circuitous, unless the property owner suffers a unique injury.

### **AUTHORITY TO CONTROL ACCESS ON STATE ROUTES**

ADOT is granted authority to manage access through police powers granted in Title 28 of the Arizona Revised Statutes (ARS). The Director of ADOT is given the authority to exercise powers and duties as are necessary to fully carry out the policies, activities, and duties of the transportation department. The Director exercises complete and exclusive operational control and jurisdiction over the use of state highways and routes and prescribes rules as are necessary for public safety and convenience. The Director has authority to coordinate the design, right-of-way purchase, and construction of controlled-access highways and related grade separations of controlled-access highways, and the extension and widening of arterial streets and highways. Access control can be categorized as full, partial, or uncontrolled.

### **MUNICIPAL LEGAL AUTHORITY**

The powers of municipal or local governments (cities, towns, and counties) to control land development within adopted municipal limits and the state-recognized Municipal Planning Area (MPA) include planning, zoning, and land division (subdivision and minor subdivision). Cities and towns derive specific authority for land division through ARS 9-463.01, Subdivision Regulation. The Arizona Growing Smarter Act (ARS 9-461 to 9-463) sets forth state laws relating to the authority and requirements associated with these local powers. Most General Plans, required under the Growing Smarter Act, provide guidance concerning an array of matters relating to potential land uses and the transportation system infrastructure intended to serve those land uses, including access to public streets. Zoning Ordinances, which must be consistent with the General Plan, establish areas referred to as Zoning Districts that specify permitted land uses and minimum lot sizes. The authority for local governments to engage in zoning is contained in ARS 9-462.01.

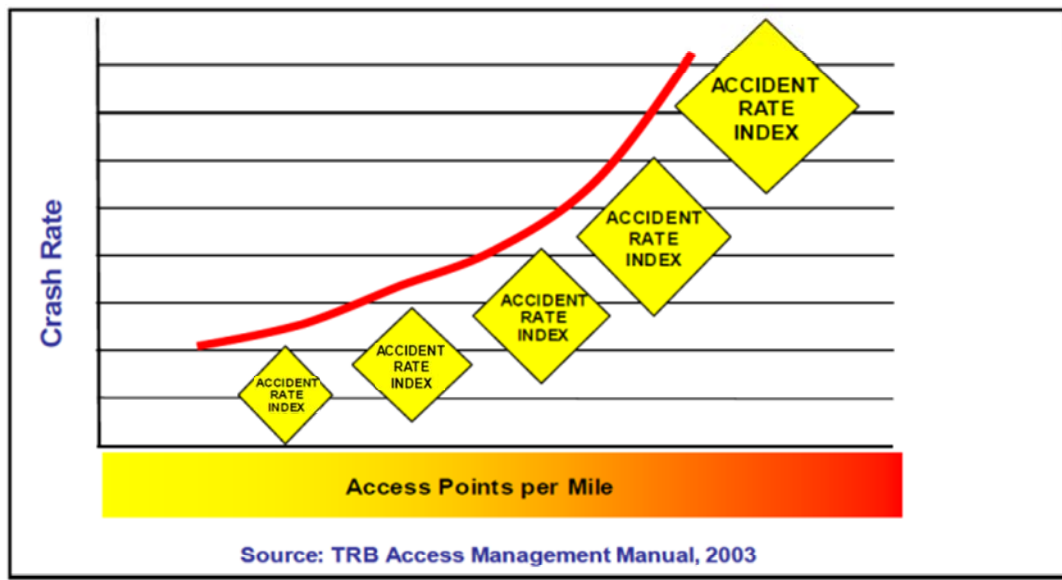
## **6.2 WHY IS ACCESS MANAGEMENT IMPORTANT?**

Access management planning focuses on the development of corridor- or roadway-specific transportation and land use strategies to improve safety and functionality. Engineering and day-to-day experience indicates that the operational safety, capacity, and functional integrity of a roadway is directly affected by the number and design of access points. Each access point represents a potential location for conflicts and crashes involving motorists, bicyclists, and pedestrians. If development along a roadway and the amount of access afforded that development does not fit with



the volume and type of traffic, the roadway may become congested and unsafe. As shown in the in **Figure 25**, as the number (or frequency) of access points per mile increases, the Crash Rate (measured by the Accident Rate Index) increases.

FIGURE 25 – CRASH RATE RELATIVE TO NUMBER OF ACCESS POINTS PER MILE



Adding more lanes to an existing highway to gain necessary capacity or reduce congestion for safety's sake is expensive and oftentimes not possible. In contrast, controlling and limiting access to highways, major roads, and even certain city streets is a cost-effective way to help maintain the capacity of the facility and improve the safety of traffic operations. Proactive solutions can include the control of entrances and exits to abutting properties, installation of medians to restrict left-turns to abutting properties, addition of left-turn lanes at prescribed locations, and establishment of connections between adjoining developments. By coordinating access locations with surrounding land uses based on traffic data, forecasted volumes, and expected roadway function (e.g., collector v. arterial), it is possible to improve safety and functionality without adding lanes. Coordination of the local street network with the SHS also adds to opportunities for implementing pro-active and cost-effective solutions to capacity and safety issues.

Other benefits of access management include:

- Improved community quality of life through reduced congestion and more efficient access to goods and services;
- Greater sustainability of community design through effective integration of transportation and land uses;
- Improved safety for bicyclists and pedestrians, due to the reduction in conflict points at the side of the roadway and, in some cases, center islands that provide refuge;

- Improved transportation corridor aesthetics through practical landscaping and streetscaping; and
- More efficient use of limited, available funding through the implementation of more affordable, less disruptive roadway improvements versus major reconstruction and widening.

## 6.3 CURRENT ACCESS MANAGEMENT PRACTICES

### Access Management Manual, Pinal County Regionally Significant Routes for Safety and Mobility (RSRSM)

This separate document prepared in support of the RSRSM sets forth guidance for implementing access management practices relative to Pinal County RSRSM, local jurisdictions, Native American Communities, and private developers. This manual was prepared to establish a consistent access management framework to guide application of access criteria on RSRs across all entities in the County. It discussed the need for access management and outlines the benefits of applying access management principles. The manual also establishes the authority under which access management may be asserted and provides an outline of roadway classifications to be used in making access management decisions. It also provides a “toolkit” for assessing land use and technical design strategies to support access management.



**PINAL COUNTY**  
Wide open opportunity

### Access Management Guidelines, City of Maricopa Regional Transportation Plan Update, September, 2008



This separate Technical Memorandum prepared during the RTP Update provides an overview of access management issues confronting the City of Maricopa and recommends practices for the management of vehicular access to all City-owned roadways and state highways. The guidelines and recommended practices presented include basic design criteria for the location, spacing, and geometry associated with permitting driveway access to City roadways. The City of Maricopa guidelines address seven areas of interest relative to six roadway categories.

### Payson Transportation Study, March, 2011

This study notes that Payson does not currently have an access management policy in place, and authority to access state highways (SR 87 and SR 260) is asserted by ADOT in accordance with Arizona Administrative Rule R17-3-712, Encroachments in Highway Rights-of-Way. It indicates access management is an improvement option identified for alleviating congested conditions along SR 87 and SR 260. Under the evaluation of transportation improvement issues, the study identifies the need for access management guidelines as a regional issue for the Payson area. Development of access management standards and guidelines is listed under short-term (2011-2015) recommendations.



### Cobre Valley Comprehensive Transportation Study, April, 2013



One of the stated objectives of this study for the Globe-Miami area was preparation of access management guidelines. The document (like the Payson Transportation Study) notes that access to the SHS by ADOT occurs under Arizona Administrative Rule R17-3-502, Highway Encroachment and Permits, an administrative procedure





managed by the ADOT Engineering Districts. (Note: R17-3-502 superseded R17-3-712, as cited in the Payson Transportation Study). The document provides a short discussion of access management, identifies benefits associated with the practice of access management, and recommends development of an access management guidebook and ordinance to provide specific guidance for access to various land uses. Under long-term (Year 2030) capacity-related roadway improvements, the study recommends evaluation of access management methods to improve the southwestern entrance to the Town of Miami along US-60.

## **Gila County Small Area Transportation Study, October, 2006**

This study documents Gila County access management practices, which are contained in the *Gila County Roadway Design Standards Manual*. Standards are provided for median types and driveway spacing according to functional classification, driveway types and driveway design. Recommended access management guidelines are included that identify suggested minimum access spacing based on roadway speed and functional classification with specific standards for Rural Very Low Volume Roads to accommodate future increase in traffic volume and reclassification of the roadway.



## **City of Eloy Small Area Transportation Study, August, 2007**



pedestrian).

The Recommended Transportation Plan discusses the principles of access management and includes recommended roadway design and access criteria. This document outlines access management techniques and provides standards for six roadway functional classifications relative to expected traffic volume, roadway design/geometry, access needs, and alternative travel modes (transit, bicycle,

## **City of Casa Grande Small Area Transportation Study, July, 2007**

This study includes information regarding access management as a commonly used method for enhancing roadway safety and corridor mobility, based on planning, regulatory, and design strategies. The adopted access management practice in Casa Grande is documented in Appendix C of the Final Report, which presents a discussion from the 2001 Casa Grande Multimodal Transportation Study that addresses Access Management and incorporates applicable sections from Chapter 17.56, Off-Street Parking, codified in the Casa Grande Municipal Code.



## **Coolidge-Florence Regional Transportation Plan, April, 2008**



Access management is included within the Recommended Transportation Plan – Roadway Element established during this study. The need for access management is addressed along with a discussion of what it is intended to accomplish and the benefits of implementing available techniques. Specific techniques of access management are identified with extended descriptions provided in an appendix. Roadway design and access criteria are highlighted in a table showing standards for six roadway functional classifications relative to expected traffic volume, roadway design/geometry, access needs, and alternative travel modes (transit, bicycle, pedestrian).

## **City of Coolidge Comprehensive Transportation Feasibility Study, June, 2012**

While this study recommends the application of access management practices, it does not duplicate the comprehensive guidance already adopted through the



Final Report

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Coolidge-Florence Regional Transportation Plan (see above). However, this study introduced a new set of roadway functional classifications, based on five classifications rather than six, and it includes a revised table of criteria.

### Apache Junction Comprehensive Transportation Study, May, 2012



This study includes access management in the Implementation Plan, providing a description of access management practices and discussing benefits. Recommended actions include developing a comprehensive access management standards guidebook and creating/adopting an access management ordinance to provide specific guidance relative to various land uses.

### Superior Small Area Transportation Study, October, 2008

Policies and guidelines developed during this study include Access Management Guidelines. The section outlines the purpose of access management and discusses legal issues as well as implementing authority, such as subdivision regulations, zoning ordinance, and the General Plan. The Policies and Guidelines chapter also presents general principles of access planning and design and addresses permitting considerations.



### Ak-Chin Community Transportation Plan, July, 2010



This plan proposes the inclusion of access management evaluation associated with Public Use and Commercial Master Plans and the preparation of access management guidelines as part of an overall Road and Safety Standards document. The plan presents an outline of the key aspects of access management, including a listing of the benefits. The plan recommends development and adoption of access management guidelines, providing those from the neighboring City of Maricopa as a point of reference (see above).

## 6.4 METHODS TO CONTROL ACCESS

Access to state highways and public streets can be controlled through the use of planning, engineering, and regulatory tools. Access control generally is exercised through powers granted to the state or local governments to assure the safe and efficient operation of roadways, while not limiting access below a point deemed necessary and reasonable for the use of the abutting property. Access management includes systemwide programs, such as those that may be formulated and exercised through regional policies or local governments, as well as corridor-based improvement programs. The former focuses on development of a comprehensive framework for all roadways in a given area under the specific jurisdiction of the state or local government. The latter focuses on immediate needs of a particular roadway/corridor, often a high-priority roadway/corridor identified as having adverse operational and safety conditions. Methods to control access can be categorized as technical, as defined by reasonable and best design practices for roadways relative to functional classification, and planning and regulatory, as may be exercised through land development controls.

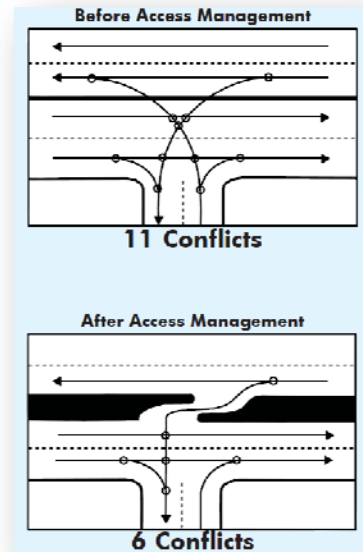
### 6.4.1 TECHNICAL METHODS OF ACCESS MANAGEMENT

Access to facilities on the Arizona SHS is generally developed and controlled through the application of technical methods, as planning and zoning is not a function of state government. Technical methods that are employed to control access on the SHS include driveway consolidation, joint driveway or cross-access agreements, provision of adequate corner clearance, implementation



of two-way continuous left-turn lanes, construction of frontage roads, and construction of raised medians.

1. **Raised Medians.** Raised medians on the approaches to intersections provide a center barrier preventing left turns into driveways near the intersection. Eliminating left-turn movements in the vicinity of intersections reduces potential conflicts where there is concentrated traffic activity. Raised medians also can be used to establish a barrier the full length of a high-traffic arterial street, preventing both left turns and cross-traffic movements. Raised medians effectively eliminate left-turn access to properties abutting a roadway and eliminate conflict points which have the potential to result in crashes. Eliminating left-turns assures free flow of traffic, and reducing the number of crashes aids in maintaining traffic flow.
2. **Continuous, Two-Way, Center Left-Turn Lanes.** This technical method of access management involves adding a dedicated left-turn lane in the center of the street to separate left-turning traffic from through traffic. Access is continuous along the roadway, but traffic flow remains unimpeded by left-turning motorists. Generally, center left-turn lanes are used only where a moderate level of turns occurs.
3. **Driveway Consolidation.** Consolidating driveways and ensuring adequate spacing between driveways limits the number of driveways per mile and reduces the number of potential conflicts with the flow of traffic on the roadway. Necessarily, roadways with higher functional classifications require fewer access points due to the greater volume of traffic.
4. **Joint Driveway/Cross-Access.** Joint driveway or cross-access agreements facilitate connections to adjacent parcels and permit drivers to circulate between multiple parcels and multiple destinations without using the arterial street system. In cases where the frontage of the abutting property is inadequate, joint access or cross-access agreements can help to achieve adequate driveway spacing.
5. **Alternative Avenues of Access (Frontage and Backage Roads).** Reasonable alternative access can be provided to sites adjoining the main road by providing dedicated access frontage or backage roads. Dedicated access roads can be used to separate numerous turning movements, such as those associated with an intense commercial strip development or a power center, from through traffic movements on a main arterial street.
6. **Corner Clearance.** This technical method involves assuring that there is an adequate clear area prior to an intersecting street by keeping or moving driveway entrances away from intersection. Improving corner clearance is especially helpful in reducing the occurrence of rear-end crashes. In some cases driveways may be moved from the main streets to side streets to achieve corner clearance standards.



## 6.4.2 PLANNING AND REGULATORY TOOLS

Planning and regulatory tools are available to local governments to control access to properties along streets and highways within identified jurisdictions. A summary of key tools for controlling access follows.

1. **Land Division.** Controlling lot dimensions has an impact on driveway spacing, the ability to establish on-site circulation, and driveway lengths. Lot dimensions can be controlled through minimum lot size, minimum lot footage, and setback requirements, as well as other methods.
2. **Subdivision Regulation.** The following procedures and regulations are effective tools for assuring reasonable and appropriate access to/from subdivisions – residential or commercial:
  - A. **Site Review Process.** The local government unit establishes a requirement stipulating that all proposed access points to a development must be evaluated during the subdivision site plan review process. Traffic signals, medians, and on-site circulation controls can be required to ensure established access standards are incorporated in plans, installed, and maintained.
  - B. **Regulating Lot Splits and Further Subdivisions.** Various types of lot configurations encourage inadequate spacing between access points. The regulation of lot splits by jurisdictions could help to ensure increased spacing between access points.
  - C. **Subdivision Regulation.** Subdivision regulations at the local level can be used to ensure that access points for proposed developments are oriented away from arterials with high traffic volumes.
3. **Access Controls.** The controls cited below may be used to regulate the manner of access to abutting properties:
  - A. **Location and Design.** The number of access points in relation to lanes used for deceleration and acceleration relative to abutting properties can be controlled to avoid potential conflicts, as motorists enter and exit the properties. Adequate design of driveway throat length can avoid conflict with the flow of off-site roadway traffic. Access management design criteria can be used to ensure adherence to standards for adequate driveway spacing, corner clearance, and joint- and cross-access configurations.
  - B. **Retrofitting Non-Conforming Access.** Permit requests for new driveways, land use intensity changes, and site improvements can require conformance with adopted access control guidelines.
4. **Zoning Regulations.** There are two zoning techniques local governments can use to enforce access management/control guidelines.
  - A. **Overlay Zoning.** Overlay zoning can be used to address areas with access control problems. Zoning stipulations can address priorities for access relative to the intensity of access, safety, and congestion problems.
  - B. **Flexible Zoning.** Flexible zoning can allow, even encourage, alternative site designs, buffering, and screening between incompatible uses.

## 6.5 REGIONAL ACCESS MANAGEMENT

The ultimate goal of the CAG Region would be to develop a comprehensive access management guidance manual to guide the uniform application of access management throughout the region. Therefore, it is imperative that CAG engage in and maintain an ongoing process of cooperation, collaboration, and coordination with ADOT and the region's local governments to ensure that zoning and subdivision approvals are consistent with the general principles of access management. A joint partnership in this matter will ensure that access management and access control are asserted through an appropriate and timely application of state and local powers throughout the region. The CAG Region can foster sound access management by:





- Drafting a unified Regional Access Management Policy with the goal of adoption by local governments in the CAG Region and acceptance by ADOT;
- Supporting development and adoption of local access management strategies, plans, and ordinances through ongoing regional planning activities and transportation studies;
- Providing resources for local governments and guidance with respect to access management and access control;
- Requiring an Access Management Plan for funded roadway capacity and improvement projects; and
- Supporting access management principles through the CAG regional review process.

Fundamental guidance regarding access management with respect to the regional roadway network is presented in the following paragraphs.

- Access control on interregional, inter-city, and intra-city roadways with the capacity for high speed and high volume traffic movements (e.g., arterials) should be a high priority for access management initiatives.
- Local governments within the CAG Region should review available information on access management and seek to employ the principles and techniques of access management during site plan review processes, particularly those that involve change of access.
- Local initiatives should focus on obvious access control situations that represent or have demonstrated qualities of unsafe traffic operations, such as strip commercial areas where ingress/egress driveways are frequent.
- Local governments should review major roadways with high traffic volumes to identify conflict points that affect vehicles, bicycles, and pedestrians to determine the potential for reducing conflicts through access control improvements.
- Establish a formal coordination process with ADOT to assure that improvements to the local roadway network are fully compatible with the functionality of the SHS, and review current connections to determine whether access management methods would aid in reducing congestion and/or improving operational safety.
- Create a unified regional approach to classifying the roadway system to promote consistent application of access management principles throughout the CAG Region, defining areas where access can be permitted and where it should be discouraged. This activity would include:
  - Defining access management categories, considering –
    - Level of importance of roadways within the overall regional network (i.e., function classification);
    - Roadway characteristics associated with geometric design and traffic operations;
    - Degree of urbanization, or lack thereof, and available land use controls;
  - Establishing permitted access and related access spacing and design for each category; and
  - Assigning an access management category to each roadway or roadway segment, as may be appropriate.

## 6.6 RECOMMENDED REGIONAL ACCESS MANAGEMENT GUIDELINES

Based on the framework laid out in the previous section, a set of roadway design and access criteria has been developed to provide general guidance for the development of major roadway projects identified in this RTP. The guidance focuses on the roadway classifications (refer to Chapter 5,



Roadway Element), recognizing that individual jurisdictions may require or desire variations based on local conditions.

Roadways are classified with regard to the role or function they perform in support of community accessibility and mobility, as discussed in Chapter 5. The “functional classification” of a roadway largely dictates the specific design, i.e., cross-section, and its ultimate carrying capacity. The design and desired capacity, in turn, influences the degree to which access is afforded to adjacent or abutting properties. Design and access decisions are coordinated during an assessment of the traffic characteristics (current or future) associated with the roadway.

It is recommended that the CAG Region’s roadway network be developed in accordance with four access management categories, as shown in **Table 22**. These four categories recognize the role and jurisdiction of the Federal, state, and county roadway systems. The recommended categories will provide the basis for developing and maintaining a sound transportation system for the CAG Region that will accommodate regional transportation demands and support the dynamics of regional growth.

**Ultimate Goal:  
Develop a  
comprehensive Access  
Management  
Guidance Manual for  
the CAG Region**



TABLE 22  
RECOMMENDED ACCESS MANAGEMENT GUIDELINES

Access Criteria	Roadway Classification		
	Principal/Major Arterial	Minor Arterial	Major/Minor Collector
Public Access	1/2 mile Minimum; 1 mile Preferred; 1/4 mile, if warranted	1/8 – 1/4 mile Preferred	1/8 – 1/4 mile
Property Access	Right in/Right out preferred; Full access, where approved, but limited – 600 feet Minimum 1,200 feet Preferred	Right in/Right out; Full access, where approved, otherwise limited; 1/4 mile spacing minimum for major driveways	Full access, where approved, otherwise limited; 150' Minimum 300' Preferred
Typical Traffic Control	Signalized and two-way stop (interim – roundabout allowed)	Signalized and two-way stop (interim – roundabout allowed)	Signalized, roundabout stop, and two-way stop
Traffic Signal Spacing	½ mile and 1 mile locations, where warranted, fully coordinated and progressed; 1 mile Minimum for Highways in rural areas and 1/2 mile Minimum in urban areas	1/2 mile locations, 1/4 mile locations where warranted, fully coordinated and progressed; 1 mile Minimum for State Highways in rural areas and 1/2 mile Minimum in urban areas	1/2 mile locations, 1/4 mile locations, where warranted
Grade-Separated Interchange Spacing	One mile locations, where warranted	--	--
Grade-Separated Interchange Type	May include SPUI or Tight Diamond, if warranted and feasible	--	--
Frontage Roads	Possible	--	--
Parking	Prohibited	Prohibited	Restricted



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## 7.0 SAFETY ELEMENT

The Moving Ahead for Progress in the 21st Century Act (Pub. L. 112-141), referred to as MAP-21, establishes a streamlined and performance-based surface transportation program at the federal level that builds on the programs and policies adopted since 1991. MAP-21 created a new structure for core federal highway formula funding assistance programs by combining several existing programs. The federal formula program framework now incorporates the following components:

- National Highway Performance Program (NHPP);
- Surface Transportation Program (STP);
- Congestion Mitigation and Air Quality (CMAQ) Improvement Program;
- Highway Safety Improvement Program (HSIP);
- Railway-Highway Crossings (set-aside from HSIP); and
- Metropolitan Planning.

Map-21 addresses many challenges facing the U.S. transportation system, including improving safety. Provisions for addressing transportation system safety directly affect the manner in which ADOT maintains and improves the SHS. State highway planning must meet the requirements of the HISP which call for development of a collaborative Strategic Highway Safety Plan (SHSP). MAP-21 requires the coordination of the SHSP with other safety stakeholders, including local and regional agencies, prior to obligating federal funds. Strategies and countermeasures identified and adopted within the SHSP must be reflected in the state's HSIP and be consistent with planned actions contained in the State Transportation Improvement Program (STIP) and Long-Range Transportation Plan (LRTP). **Figure 26** shows the character and extent of the coordination process that must occur in support of transportation improvement projects.

### 7.1 ARIZONA 2014 SHSP

Development and adoption of the SHSP, which is updated on a periodic basis, provides a dynamic framework for advancing transportation safety activities throughout the state. As a strategic planning document, the SHSP identifies goals and objectives that the state will pursue to improve the safety of the transportation system in a manner consistent with the statewide LRTP. Because the SHSP creates a statewide framework for achieving improvements in transportation system safety, the CAG RTP must be in alignment with established safety goals.

The *Transportation Planners Safety Desk Reference* published by the American Association of State Highway and Transportation Officials (AASHTO) indicates that the SHSP provides guidance for identifying regional highway safety problems, developing appropriate goals and objectives for resolving problems, and engages partners in creating safer highways. This CAG RTP recognizes the

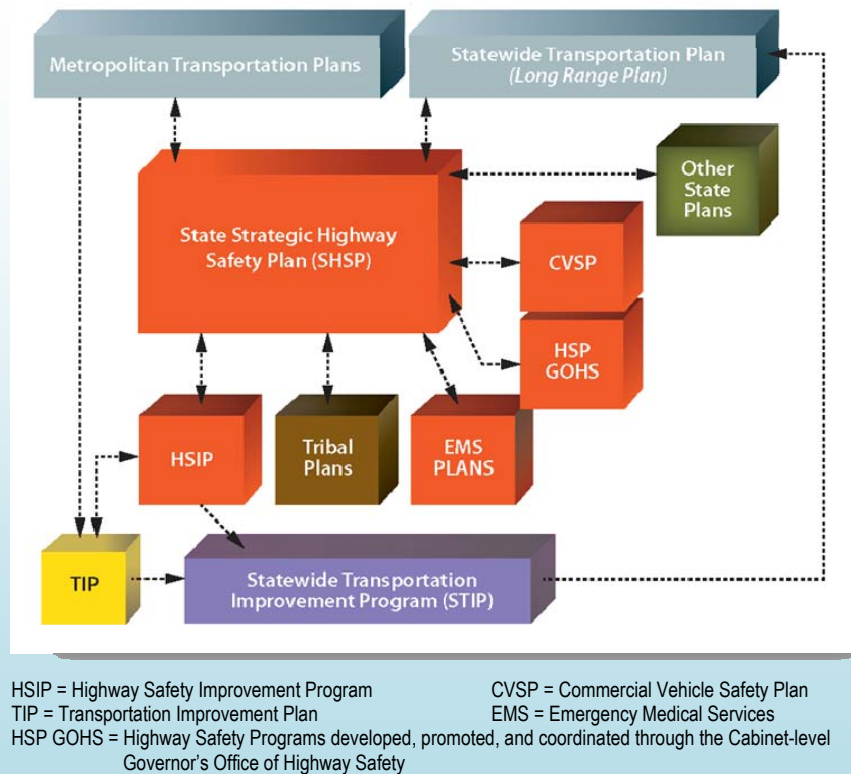
#### 2014 SHSP EMPHASIS AREAS

1. AGE RELATED
2. DISTRACTED DRIVING
3. HEAVY VEHICLES/BUSES/TRANSIT
4. IMPAIRED DRIVING
5. INTER-JURISDICTIONAL
6. MOTORCYCLES
7. NATURAL RISKS
8. NON-MOTORIZED USFRS
9. OCCUPANT PROTECTION
10. ROADWAY INFRASTRUCTURE & OPERATIONS
11. SPEEDING & AGGRESSIVE DRIVING
12. TRAFFIC INCIDENT MANAGEMENT



emphasis areas and strategies outlined in the Arizona SHSP as the best way to collectively reduce

FIGURE 26 – CONCEPT FOR SAFETY COORDINATION OF TRANSPORTATION IMPROVEMENT PROJECTS



Source: *Strategic Highway Safety Plans – A Champion's Guidebook to Saving Lives*, Second Edition, U.S. Department of Transportation (USDOT), Federal Highway Administration (FTA), Figure 2, *Coordinated Transportation Safety Planning*, Pg. 27, March, 2013. The FHWA figure was modified by Wilson & Company to support development of the Arizona 2014 SHSP Update process.

fatalities and serious injuries associated with the region's roadway network. Coordination with the SHSP will occur as projects are selected for implementation through formulation of the region's Transportation Improvement Program (TIP), which sets the stage for approval of federal, state, and local funding of improvements.

## 7.2 REGIONAL APPLICATION

As CAG evaluates potential transportation improvements, they must work closely with state and local member governments to include safety analyses in corridor studies, improvements for problem locations, and other capital projects directed toward the transportation infrastructure. The process of planning and collaboration is very important, because the need for certain strategies and the probable effectiveness of those strategies must be clearly demonstrated to improve the likelihood that safety partners will pursue implementation. TIP development, although usually an advisory or coordinating role, should embrace safety when prioritizing projects and developing implementation strategies.

## 7.2.1 STRATEGIC TRANSPORTATION SAFETY PLAN

According to the *2006 Conditions and Performance Report* published by FHWA, 77 percent of all roads are controlled and maintained at the local level. Consequently, incorporating safety planning at the region and MPO level in long-range transportation plans and TIPs is a necessary first step toward funding the projects. Development of a Strategic Transportation Safety Plan (STSP) aids in identifying regional priorities, strategies for improving safety on regional roadways, needed resources, and appropriate performance indicators. Through cooperative planning and collaboration among agencies, the STSP will establish a unified approach to resolving apparent safety issues. Coordination of this planning activity with the Arizona SHSP will assure that priority projects are consistent with the state plan and, therefore, eligible for funding.

Development of an STSP by CAG will involve an assessment of the type and character of crashes in the CAG Region. Because physical and operational conditions vary throughout the regions, analysis of crash data (largely available from ADOT) will help CAG staff to:

- Identify locations with a high incidence of crashes;
- Determine the principal types of crashes (e.g., rear-end collisions, lane departures) and their frequency;
- Identify contributing factors (e.g., excessive speed, sight distances, animals in the roadway, failure to yield); and
- Determine the degree to which behavior and other key human factors influence the incidence of crashes (e.g., driving while impaired, failure to use safety belts or, in the case of motorcycles, the use of helmets).

With greater understanding of the major highway safety issues, CAG staff can assist members in identifying appropriate strategies or countermeasures to address specific safety problems.

Two examples of potentially effective countermeasures are identified below because many two-lane rural roads exist in the CAG Region.

- Two-lane, rural roads could be outfitted with rumble strips, which can be created in the center of a roadway and at the edge of the roadway within the shoulder. This countermeasure would aid in combating the potentially disastrous effects of head-on crashes or drivers being forced off the roadway due to vehicle lane departures that result from distraction or fatigue.
- Two-lane roads without shoulders could be reconstructed to provide adequate, stable shoulders for drivers to access during emergencies. This countermeasure would aid in reducing the incidence of crashes, as drivers would be able to clear the roadway under dangerous circumstances (e.g., tire failure, avoid an oncoming vehicle, and head-on collision).



Guidance provided by an STSP will enable local governments to integrate safety planning into project development at the earliest point in the planning process and address high priority locations associated with minor improvement projects, roadway retrofit actions, or major corridor development programs.

## 7.2.2 ROLE OF CAG

The COGs and MPOs are responsible for developing an RTP and TIP for the designated region. As part of this responsibility, these agencies engage in various planning studies, develop programs to address needs, and formulate and adopt policies to guide the improvement of regional transportation infrastructure and system performance. Like ADOT, Arizona's COGs and MPOs collect and analyze large amounts of data relating to the condition of the transportation infrastructure and operational characteristics. These organizations also most often are responsible for developing and applying regional travel demand models that incorporate assessments of transportation system performance across the region by including roadway networks of all member governmental units. The data collection and analysis roles of the COGs and MPOs are important and provide the region and local governments a valuable foundation for considering safety in a comprehensive manner during the transportation-planning process. Thus, CAG is the logical organization to foster active interest in participating in safety initiatives, starting with development and adoption of a regional STSP.

## 7.2.3 VISIONING

The COGs and MPOs are the source for a regional vision regarding highway safety following the guidance of the state DOT. Vision statements supported by goals and objectives addressing the state's Emphasis Areas are directed toward expressing safety as a transportation system characteristic desired by regional members. The Arizona 2014 SHSP vision statement – “Toward Zero Deaths by Reducing Crashes for a Safer Arizona” – is consistent with the National vision statement. A typical regional vision statement, developed after extensive community outreach and community input, might look like this: *Create an integrated, multimodal regional transportation system to move people and goods in a safe and efficient manner throughout the CAG Region.* The visioning process initiates safety initiatives of the region and sets the tone for the consideration of various needs to be evaluated as different transportation improvement options are reviewed.

## 7.2.4 GOALS AND OBJECTIVES

Goals and objectives are formulated to support and guide those seeking to satisfy the vision. Also based on extensive community input, goals and objectives more specifically convey the community's sense of what the transportation planning process and improvement projects are striving to achieve. They provide guidance with respect to the development of criteria to be used in analyzing and evaluating various projects and strategies. Safety goals generally establish what the region/community desires to achieve, based on the overall vision. Safety objectives generally set forth specific accomplishments or targets to achieve in furtherance of the goals and may include specific criteria or measures to determine the effectiveness of efforts associated with the objectives. Typical regional transportation safety goals might seek to ensure that facilities offer a safe operational environment or assure secure conditions during emergency situations. Typical objectives might strive to achieve specific ends, such as reducing the results or conditions of crashes by a certain percentage over the period of the plan (e.g., reduce fatalities by 10% or reduce incidents of red-light running by 30%).

## 7.3 FUTURE ACTIONS

As a complement to this RTP, CAG should establish a Transportation Safety Committee that would help to guide the development of safety resolutions, a vision for the region, appropriate goals and objectives, and an STSP that reflects key elements of the SHSP. Coordinated elements of the





transportation planning process, i.e., RTP, TIP, and STSP, will provide a firm foundation for safety planning and the Unified Planning Work Programs. In this manner, the expenditures of federal HSIP funding for transportation improvements will support and sustain the SHSP and ADOT's LRTP.

CAG, in particular, should move forward with additional investigations relating to High Risk Rural Roads (HRRRs). A HRRR is defined under 23 U.S.C. §148(a)(1) as "...any roadway functionally classified as a rural major or minor collector or a rural local road –

- A. on which the accident rate for fatalities and incapacitating injuries exceeds the statewide average for those functional classes of roadway; or
- B. that will likely have increases in traffic volume that area likely to create an accident rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classes of roadway."



Typical Rural Arizona Roadway

HRRRs are a particular concern, because, according to the FHWA Web site *Local and Rural Road Safety Program*, "...the majority of highway fatalities take place on rural roads. Rural roads account for approximately 40 percent of the vehicle miles traveled in the U.S., but almost 57 percent of fatalities." The site indicates that the fatality rate for rural crashes was more than twice the fatality rate for urban crashes in 2009. There are several reasons for this relationship, including vehicles traveling at higher rates of speed, lane departure (as noted above), distance from emergency medical services, and lack of timely awareness of the crash.

**Example Goal:** *Improve Transportation Safety and Security*  
**Example Objective:** *Support Traffic Safety Education Programs and Traffic Enforcement Efforts/Initiatives*

The discussion of goals and objectives for the CAG Region will need to directly address this issue, as the region has an extensive network of HRRRs. An example of a goal and objectives associated with transportation safety is shown at the left. MAP-21 changed the definition of a HRRR to allow more flexibility in the determination by states of

significant safety risks relative to rural roads. ADOT cites in the Arizona SHSP the creation of a Local Public Agency section of the Department. This section will manage HSIP and other Federal funding available to regional and local agencies for identifying and delivering transportation safety projects under the HRRR Program.



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## 8.0 TRANSIT ELEMENT

### 8.1 BACKGROUND

A variety of public transit services will be needed in the future to address the mobility needs of persons who cannot drive, and those who desire an alternative to the private motor vehicle. Due to the population and employment expansion expected in the CAG Region, particularly in Pinal



County, transit services will need to support more extensive travel within intraregional corridors and because of commuting patterns associated with employment in Pima and Maricopa counties. Greater capacity for transit service will be necessary in the urbanized areas, and service frequency will need to improve dramatically to accommodate travel demand. More moderate service will need to be provided in the suburban and rural areas of the region to ensure that full mobility and accessibility opportunities are available to the region's populace.

Expectations for the future include potential Bus Rapid Transit (BRT) service with connections to Pima and Maricopa counties and high-speed passenger rail, which potentially would include one or more stations in Pinal County. The Transit Element, which is coordinated with the Roadway Element, presents opportunities and recommendations for developing an integrated transit system that will serve a larger, more diverse community.

### 8.2 COMPONENTS OF THE TRANSIT ELEMENT

A total of 27 transportation services are available to CAG's resident population. Four different operating modes are offered: demand-responsive (DR), cab ride coupons, fixed route and volunteer drivers. Although current public transportation services are very limited, little public funding for expanded or new service is expected in the near future. The CAG Region and Pinal County, in particular, will require a major expansion of local, regional, and special needs transit service over the next 20 years. Pinal County may need to coordinate transit improvements with inexpensive avenues for enhancing mobility. Also, Transportation Demand Management (TDM) strategies can be relatively cost-effective measures for reducing congestion and achieving air quality conformity. Gila County is expected to grow at a slower rate than Pinal County and is expected remain predominantly rural, which is not conducive to sophisticated transit services. Although "Copper Country" in southern Gila County will see a greater need, future regional transportation links will likely focus on links to the Phoenix area, and Payson will likely maintain their a focus on seasonal transportation to "Rim Country" destinations.

#### 8.2.1 GENERAL FIXED-ROUTE PUBLIC TRANSPORTATION SERVICES

Fixed-route public transit service provides transportation mobility through regular operations of buses on specifically defined roadways during designated times and days. Fixed-route service means that the buses do not deviate from the roadways identified for service, which differs from a DR system that responds to direct requests for service and provides door-to-door transportation.



## LOCAL SERVICE

- **Apache Junction and Vicinity:** The City of Apache Junction does not operate or support any transit service for the general public. However, Valley Metro transit services are accessible in neighboring Mesa. The Superstition Springs Park-and-Ride is located six miles west of Apache Junction. It is served by five Valley Metro local routes, four Express routes, and a LINK BRT route that provides a direct connection to the METRO Light Rail line.
- **Coolidge:** The City of Coolidge operates the Cotton Express within its boundaries. The Cotton Express is a transit system with two bus routes or loops (Red and Blue), as illustrated in **Figure 27**. The operating headway (or frequency of buses) ranges from 30 to 60 minutes. There are 160 bus stops located throughout the city.
- **Casa Grande:** Casa Grande does not currently provide transit services for the general public. According to the Pinal County Transit Feasibility Study, Casa Grande is examining the feasibility of a local circulator service.
- **Globe/Miami:** The Town of Miami operates the only available service for the general public in Gila County. The Cobre Valley Community Transit (CVCT) is a DR Service, providing curb-to-curb travel support for low-income, elderly, disabled persons as well as students. The CVCT service area covers over 40 square miles, including the Town of Miami, City of Globe, and nearby portions of unincorporated Gila County. The service operates Monday through Friday.
- **Maricopa Xpress (MAX):** The City of Maricopa formerly operated the Maricopa Xpress that provided commuter service between Maricopa, Tempe, and Phoenix, with connections to METRO Light Rail in both Phoenix and Tempe. The service offered two round trips per weekday, operating from the Maricopa park-and-ride (P&R) lot located at the junction of SR 347 and the Maricopa-Casa Grande Highway (MCGH). The Maricopa Xpress service was terminated September 30, 2011, due to a reduction in funding support from State Lottery proceeds being diverted from transit assistance to the General Fund. Should adequate funding become available, the City likely would reinstate this service.
- **San Carlos Indian Community:** San Carlos Apache Nnee Bich'oo Nii Services operates three scheduled routes: The Apache Gold Casino Route, the Globe Route, and the Safford Route. The Apache Gold Casino route is a shuttle service connection to the Communities of Bylas, Peridot and San Carlos, and the Casino for the benefit of Casino employees. The other two routes are oriented to students traveling to and from the Gila Community College Globe Campus and Eastern Arizona College in Thatcher. These two routes also provide travel to commercial activity centers (e.g., Walmart in Globe) and recreational venues (e.g., Discovery Park in Safford).

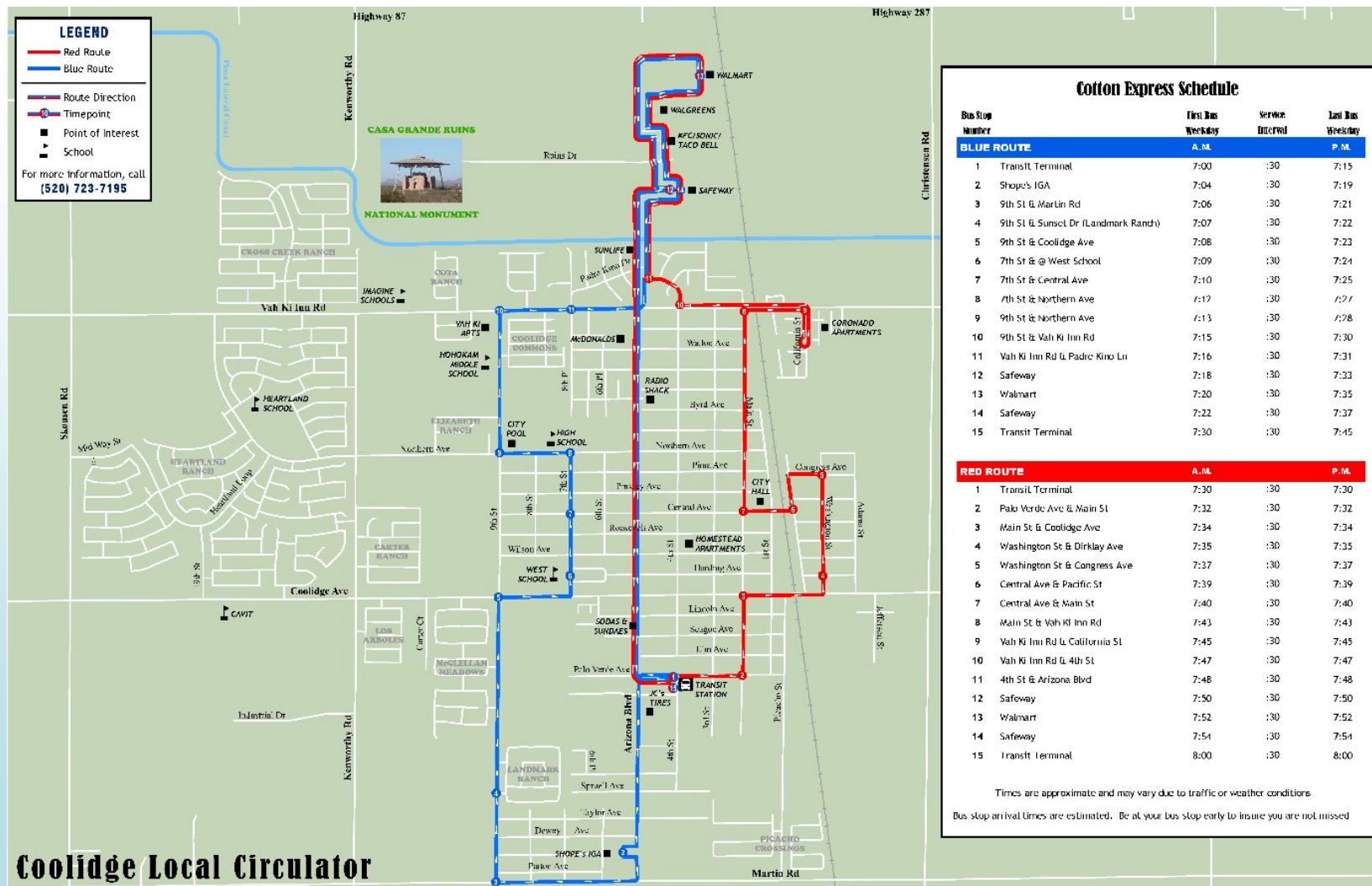
## REGIONAL SERVICE

- **Central Arizona Regional Transit (CART):** This service, operated by the Coolidge Cotton Express, runs between Florence and Casa Grande via Coolidge. It provides direct service to Central Arizona College (CAC) and serves shopping and medical trips to and from Casa Grande. Bus service is open to the general public and operates weekdays from 5:00 AM to 8:00 PM, with service approximately every two hours (**Figure 28**).





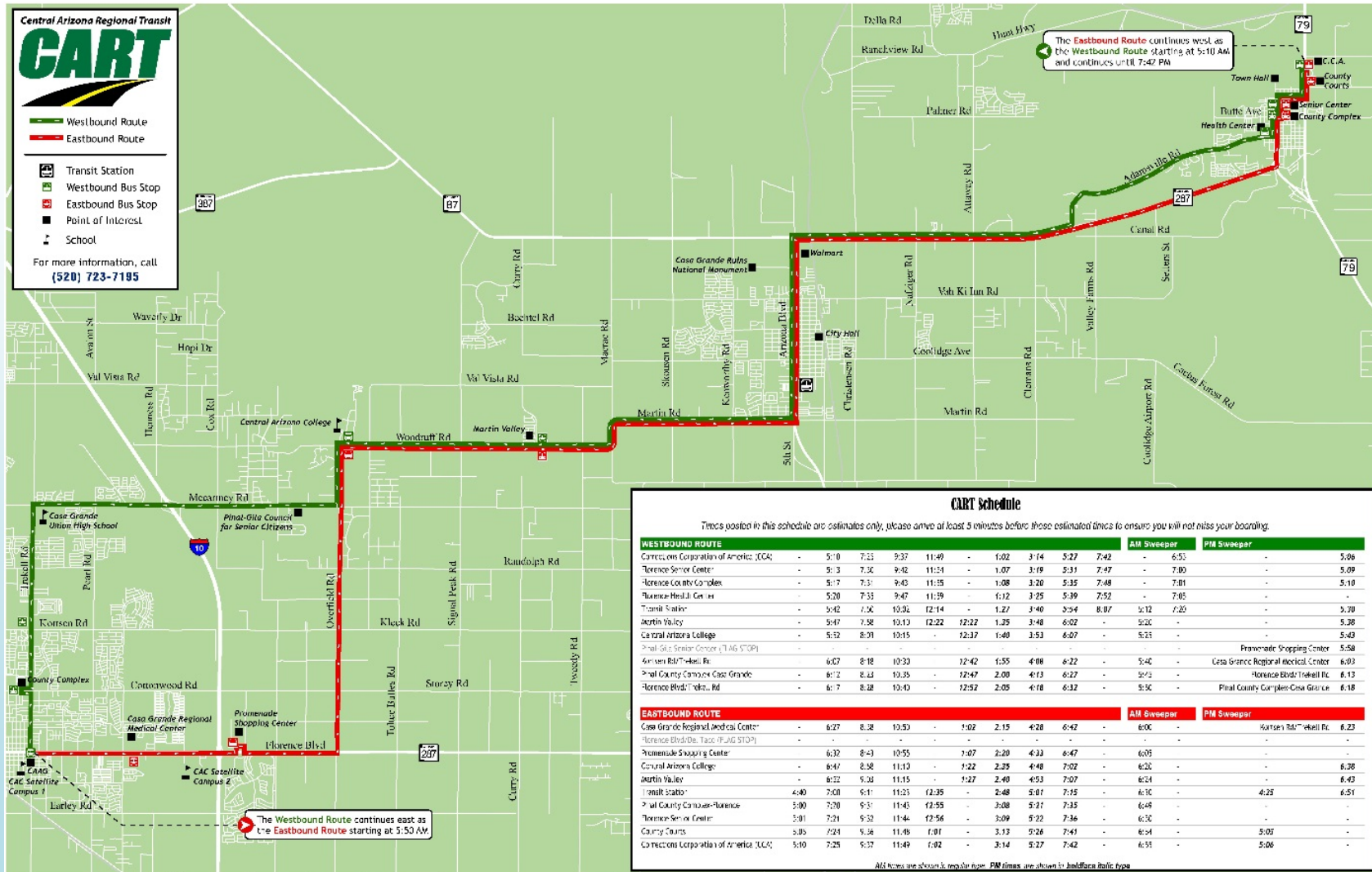
FIGURE 27 – COTTON EXPRESS LOCAL CIRCULATOR ROUTES



Source: City of Coolidge Web Site, Cotton Express/Transit, Route Map & Information, Coolidge Routes Guide, retrieved October, 2014.



FIGURE 28 – CENTRAL ARIZONA REGIONAL TRANSIT (CART) ROUTE



Source: City of Coolidge Web Site, Cotton Express/Transit, Central Arizona Regional Transit Route, Central Arizona Regional Transit Brochure, retrieved October, 2014.



- **Pinal Rides:** This service, operated by the Pinal-Gila Council for Senior Citizens (PGCSC), is a pilot program that provides service one day a week on two regional routes, designed primarily to transport residents of nearby communities to medical appointments in Casa Grande. The service operates between Florence, Coolidge, and Casa Grande on Tuesday and between Arizona City, Eloy, Toltec, and Casa Grande on Wednesday. The service is primarily designed for senior residents. Although the service is dedicated to accommodating medical trips and seniors, non-senior riders and non-medical trips may be served, if space is available. Trips need to be booked at least 24 hours in advance, due to limited availability of system capacity. In effect, Pinal Rides is a hybrid service operating on a fixed route, but available through appointment only, as with DR Service.

## 8.2.2 DEMAND-RESPONSIVE SERVICE

As noted above, DR Service is oriented to the provision of door-to-door transportation, literally “on-demand.” Persons needing transportation within the defined service area can call and make an appointment with the dispatcher. Buses operate through the service area (usually only during weekdays) picking up and dropping off clients according to the routing established by the dispatcher for each particular day. This differs from the fixed-route service, which maintains specific routes from one day to the next to serve designated stops along the route.

- **On-the-Go Express:** This service is operated by the Pinal County Department of Public Health. On-the-Go Express is a DR Service that transports adults aged 60 and over and persons with disabilities in the eastern half of Pinal County to medical appointments and shopping. The service also picks up and drops off prescriptions. The service operates during the weekdays from 8:00 AM to 5:00 PM.
- **Senior Van Service:** This DR Service, operated by the Pinal-Gila Council for Senior Citizens (PGCSC), provides rides to and from senior centers in Apache Junction, Casa Grande, Coolidge, Hayden and Superior. Limited transportation is also provided for medical and shopping trips.
- **Maricopa:** The City of Maricopa operates a DR transit program called the City of Maricopa Express Transit or “COMET.” These buses circulate along two routes throughout Maricopa on Monday, Wednesday and Friday in accordance with appointments established through a dispatcher (**Figure 29**). Trips are available to regional medical facilities in Chandler and Casa Grande on Tuesday and Thursday, respectively. The most recent information regarding this service indicates it remains operational today, although the City still faces challenges with respect to offering transit services.
- **San Carlos Indian Community:** San Carlos Apache Nnee Bich’o Nii Services operates on-call DR Service for all community members, recreational transportation services for Tribal elders, and other special event transportation.

## 8.2.3 OTHER PUBLIC TRANSPORTATION SERVICES

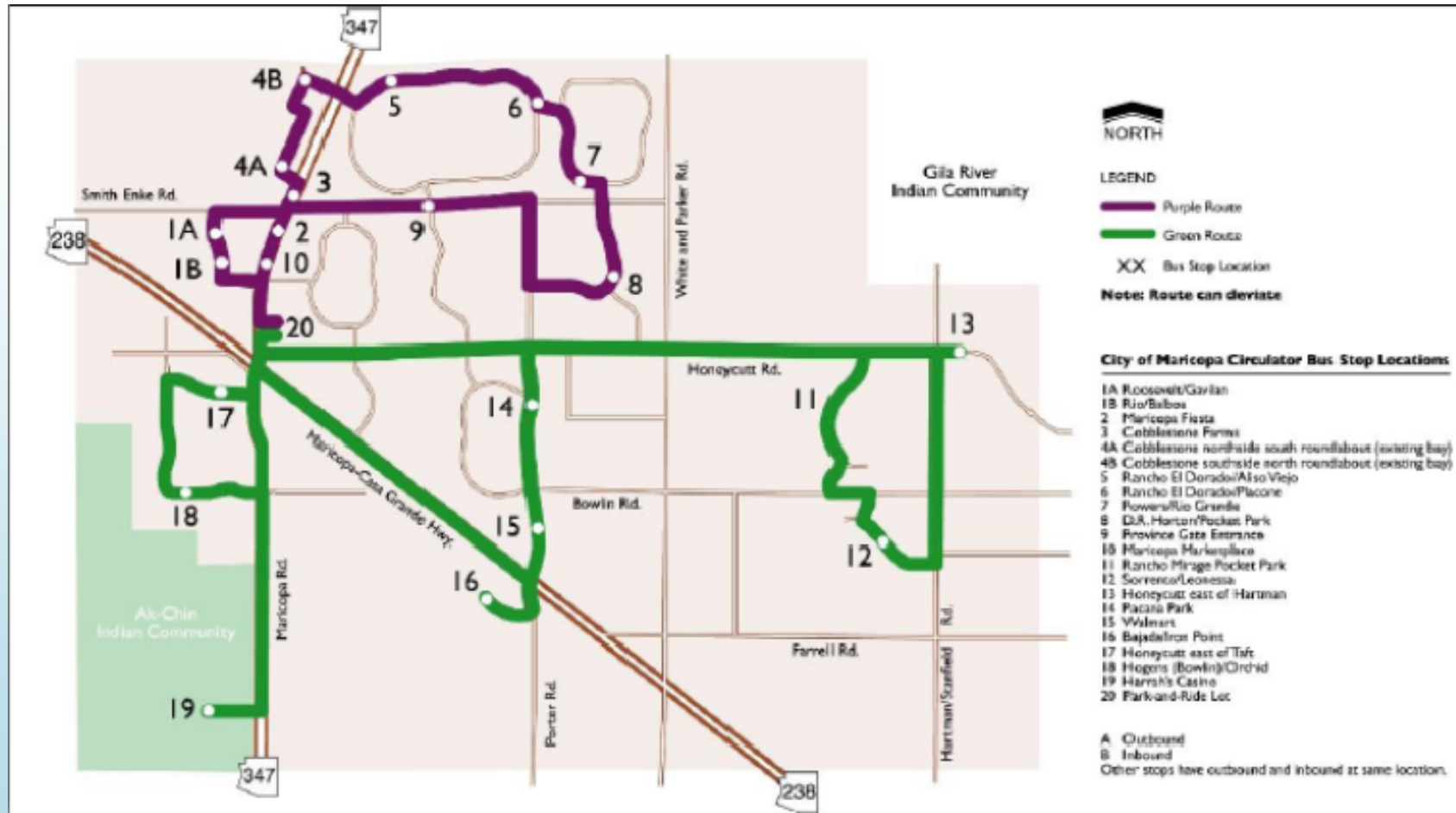
### INTERCITY AND AIRPORT TRANSPORTATION

The ability to move throughout the CAG Region and to destinations outside of the region by way of public transportation is limited to a few intercity bus services and Amtrak rail passenger service, as described below.





FIGURE 29 – COMET CIRCULATOR ROUTES, CITY OF MARICOPA, ARIZONA



Source: City of Maricopa.



- **Intercity Bus:** Greyhound Lines, Inc., operates a route between Phoenix and Tucson, stopping in Casa Grande. Route operations include four trips per day (two in each direction).
- **Douglas Super Shuttle:** This service operates three round trips per day between Douglas, Arizona, and Phoenix Sky Harbor International Airport with a stop in Casa Grande.
- **White Mountain Passenger Lines:** This service offers passenger transportation from the Arizona White Mountain communities of Show Low, Snowflake, and Payson to the Phoenix metropolitan area. Stops include the Mesa Greyhound Bus Station, the Phoenix Sky Harbor International Airport and central Phoenix. The service operates one round trip daily Monday through Saturday.
- **Amtrak:** Amtrak's combined Sunset Limited/Texas Eagle Route provides intercity rail passenger service through Amtrak's station in the City of Maricopa. Both routes provide service westbound to Los Angeles. Eastbound service to New Orleans, Louisiana, is provided by the Sunset Limited Route. The Texas Eagle Route runs east to San Antonio, Texas, where it turns north through Dallas, Texas, to Chicago, Illinois. The service operates three times weekly in each direction. Extended service between New Orleans and Jacksonville, Florida, was suspended indefinitely in 2005.

## SERVICES FOR THE ELDERLY, PERSONS WITH DISABILITIES AND SPECIAL NEEDS POPULATION (BY COMMUNITY)

Funding for services operated for the convenience and mobility needs of special needs population groups comes through the Federal Transit Administration (FTA) under programs authorized under Sections 5310 and 5311, the Arizona Department of Social Services, other state agencies, and local sources.

## 8.3 CURRENT TRANSIT DEMAND AND SYSTEM PERFORMANCE

### 8.3.1 TRANSIT TRAVEL DEMAND FACTORS

The *Arizona Rural Transit Needs Study* published in May, 2008, was prepared to provide an objective, analytical basis for guiding long-term strategic decisions regarding the provision of rural transit services in the state. The study investigated future potential demographic changes in each of the state's 13 rural counties. The demographic analysis focused on projected changes in three population groups between 2005 and 2015:

- Elderly – Persons aged 60 and over;
- Disabled – Persons with disabilities under age 60; and
- Low-Income – Persons below the poverty level under age 60.

Based on population projections developed for each of these groups for the 13 Arizona counties, an estimate of transit demand was constructed assuming the following trip rates for each group:

- Elderly – 6.79 one-way trips per year;
- Disabled – 4.49 one-way trips per year; and
- Low-Income – 20.5 one-way trips per year.

**Table 23** shows the results of this transit demand analysis, as reported in the study.



TABLE 23  
ESTIMATED RURAL TRANSIT DEMAND (ANNUAL TRIPS)

County	Elderly (60 Years of Age and Older)		Disabled Population (Less than 60 Years of Age)		Low-Income Population (Under the Age of 60)		Annual Total	
	2007	2016	2007	2016	2007	2016	2007	2016
Gila	111,365	144,412	24,923	27,614	157,161	174,127	293,450	346,153
Pinal - Rural Only	419,194	952,786	99,351	182,489	687,134	1,331,301	1,205,678	2,476,576

Source: Table 3.2, Estimated Annual Rural Transit Demand from APTNA Method by County, 2007 and 2016, *Arizona Rural Transit Needs Study*, May, 2008.

There are a number of findings from the statewide study that are relevant to the formulation of this RTP and the future transportation infrastructure of the CAG Region, including:

- The most significant “rural transit needs growth” in the state will be in Pinal County, where transit demand is expected to double. The 2.48 million annual passenger trips estimated for the County represent 23.6 percent of the total statewide rural transit demand in 2016.
- Transit demand associated with the elderly population is expected to increase from 30.8 percent of statewide rural transit demand in 2007 to 35.1 percent in 2016. This growth estimate reflects an expected increase in the percentage of elderly persons living in rural areas of Arizona.
- Transit demand associated with the disabled population is expected to decrease from 8.6 percent of statewide transit demand in 2007 to 8.0 percent in 2016.
- Transit demand associated with the low-income population also is expected to decrease from 60.7 percent of statewide transit demand in 2007 to 57.0 percent in 2016.
- At the time the *Arizona Rural Transit Needs Study* was published in 2008, rural transit ridership statewide was estimated at 1.37 million passenger trips per year. The estimated transit demand of 7.81 million passenger trips per year statewide prepared for this study indicates that only about 18 percent of total rural transit needs are being met. If no additional rural transit services are added, rural transit needs will remain unsatisfied.

## 8.3.2 TRANSIT DEFICIENCIES AND OPPORTUNITIES

Based on anticipated future travel demand, the following transit deficiencies and opportunities have been identified relative to public transportation in the CAG Region.

### GENERAL CONSIDERATIONS

Except for services provided by the Cotton Express and CART systems operated by the City of Coolidge and CVCT services in the Globe/Miami area, public transportation for the general public is notably lacking throughout the CAG Region. Relatively large urban communities, such as Apache Junction, Casa Grande and Maricopa have grown rapidly and now are significantly larger than many other Arizona communities that benefit from local transit service. There are also few public transportation services/connections between communities within the CAG Region that may be accessed by persons lacking their own means of transportation. Although several important and useful studies have been completed, transportation improvements in both counties have focused mostly on roadways. Specialized services accommodating seniors, persons with disabilities, and others with special needs are numerous and provide coverage over a large portion of CAG’s many communities. But, even these services are hampered by funding constraints that narrow service areas



and limit the ability to meet the transportation needs of all recognized potential clients. Neither county has a dedicated funding source for public transit; therefore, providers must rely on a changing patchwork of federal, local, and private resources to continue operating.

## LOCAL AREA SERVICES

There are a number of communities where the potential for initiating public transportation improvements is notable. The areas for immediate future consideration are discussed below.

- **Apache Junction:** Potential transit improvements relating to the community of Apache Junction principally include extension of Valley Metro fixed-route bus services across the Maricopa/Pinal County Line into Apache Junction. Valley Metro service would provide connections to/from the City of Mesa, City of Tempe, and the core employment areas of the Phoenix metropolitan area. Conversely, transit demand in Apache Junction, with connections into the Phoenix metropolitan area, might justify Pinal County developing its own regional transit system that would extend to the Town of Florence and City of Coolidge.
- **Casa Grande:** With the expected rapid growth of the Casa Grande area, there may be sufficient demand to support local transit service, as well as regional connections to the cities of Maricopa and Eloy. There may also be sufficient demand to support connections with the City of Coolidge and Town of Florence. Opportunities may also manifest to increase the feasibility of developing express commuter service to and from the various destinations in the Phoenix metropolitan area in Maricopa County.
- **Coolidge:** Although the City of Coolidge will continue to grow, it is expected to remain relatively small through 2025. As Coolidge grows, it may be feasible to reinvigorate local Cotton Express service to include route service recently terminated as well as new areas.
- **Eloy:** The City of Eloy is projected to be Pinal County's fastest growing community, and, by 2025, it is expected to be nearly as populous as the City of Casa Grande 15 miles to the northwest. There may be sufficient demand in the future to support local transit service as well as regional connections to the City of Casa Grande and the Town of Florence, when the expected growth is coupled with the City's strategic location relative to I-10 and I-8, the planned North-South Freeway, and location on the UPRR Sunset Route and its freight line, the Phoenix Subdivision.
- **Florence/San Tan Valley:** High traffic volumes associated with commuting into the Phoenix metropolitan area likely will support a stronger vanpool program from this part of Pinal County, southeast of Maricopa County. By 2025, development of commuter-oriented bus services to government and prison sites in Pinal County may be justified. Travel volumes between the San Tan Valley and Maricopa County will continue to grow, and potential transit improvement might include the extension of Valley Metro fixed-route and Express Bus services across the Maricopa/Pinal County Line to San Tan Valley.
- **Globe-Miami:** At some future date, there could be demand for a fixed-route public transit service in this area, although the topography and land use patterns of the area make conventional bus service challenging.
- **Maricopa:** As growth occurs and funding becomes more available, there is the potential for reinstating the Maricopa Xpress (MAX) service to the Phoenix metropolitan area and expanding service provided by the COMET circulators within the City. The City also has considered establishing regional transit service with connections to Casa Grande.



- **Payson:** Payson currently does not have any local public transit service. In the future, however, sufficient demand may exist for local transit service, at least on a seasonal basis.
- **Saddlebrook/Oracle:** Expected growth in the Saddlebrooke/Oracle area will increase travel volumes to Pima County. As a result, development of new commuter services to Tucson may become feasible.

## 8.4 PROGRAMMED OR PLANNED SHORT-TERM IMPROVEMENTS

Public transit improvement recommendations have been included in studies conducted for Gila and Pinal counties. A summary of these recommendations is provided in the following sections.

### 8.4.1 PINAL COUNTY TRANSIT FEASIBILITY STUDY

The *Pinal County Transit Feasibility Study* (referenced earlier) identified short- and long-term improvements for addressing future public transit needs in the county.

#### SHORT-TERM IMPROVEMENTS

The following short-term transit service improvements are recommended (**Figure 30**):

- Transit centers developed at key locations around which services could be focused (specifically, Apache Junction, Casa Grande, and Coolidge);
- P&R lots located on key bus routes could be used as staging areas for vanpools and carpools (Apache Junction, Casa Grande, SR 387, Maricopa, San Tan Valley, and Queen Creek);
- Express service from Apache Junction, Casa Grande, Maricopa, and San Tan Valley to downtown Phoenix, with connections to METRO Light Rail and Sky Harbor Airport;
- Arterial BRT service between Apache Junction and the end of the METRO Light Rail line, connecting via Apache Trail with the existing LINK BRT corridor developed along E. Main Street in Mesa, Arizona;
- Recommended regional routes –
  - Between Casa Grande and Florence via Coolidge and CAC
  - Between Casa Grande and Maricopa
  - Part-time service between Arizona City and Casa Grande via Eloy and Toltec;
- Local service in Apache Junction, Casa Grande, and Coolidge;
- A countywide volunteer driver program to provide service in areas that would not otherwise be served; and
- An expanded countywide vanpool program.

#### LONG-TERM IMPROVEMENTS

The following long-term transit service improvements are recommended (**Figure 31**):

- Transit centers at key locations (Florence, Maricopa, and Eloy);
- P&R lots on key bus routes (North-South Freeway, Florence Junction, Magma, Eloy, I-10 east of Eloy, SR 77, Stanfield, and Peters Corner);
- Commuter Rail –
  - UPRR Phoenix Division to Coolidge from Queen Creek;
  - Hassayampa/Hidden Valley Area;





FIGURE 30 – POTENTIAL SHORT-TERM PUBLIC TRANSIT IMPROVEMENTS

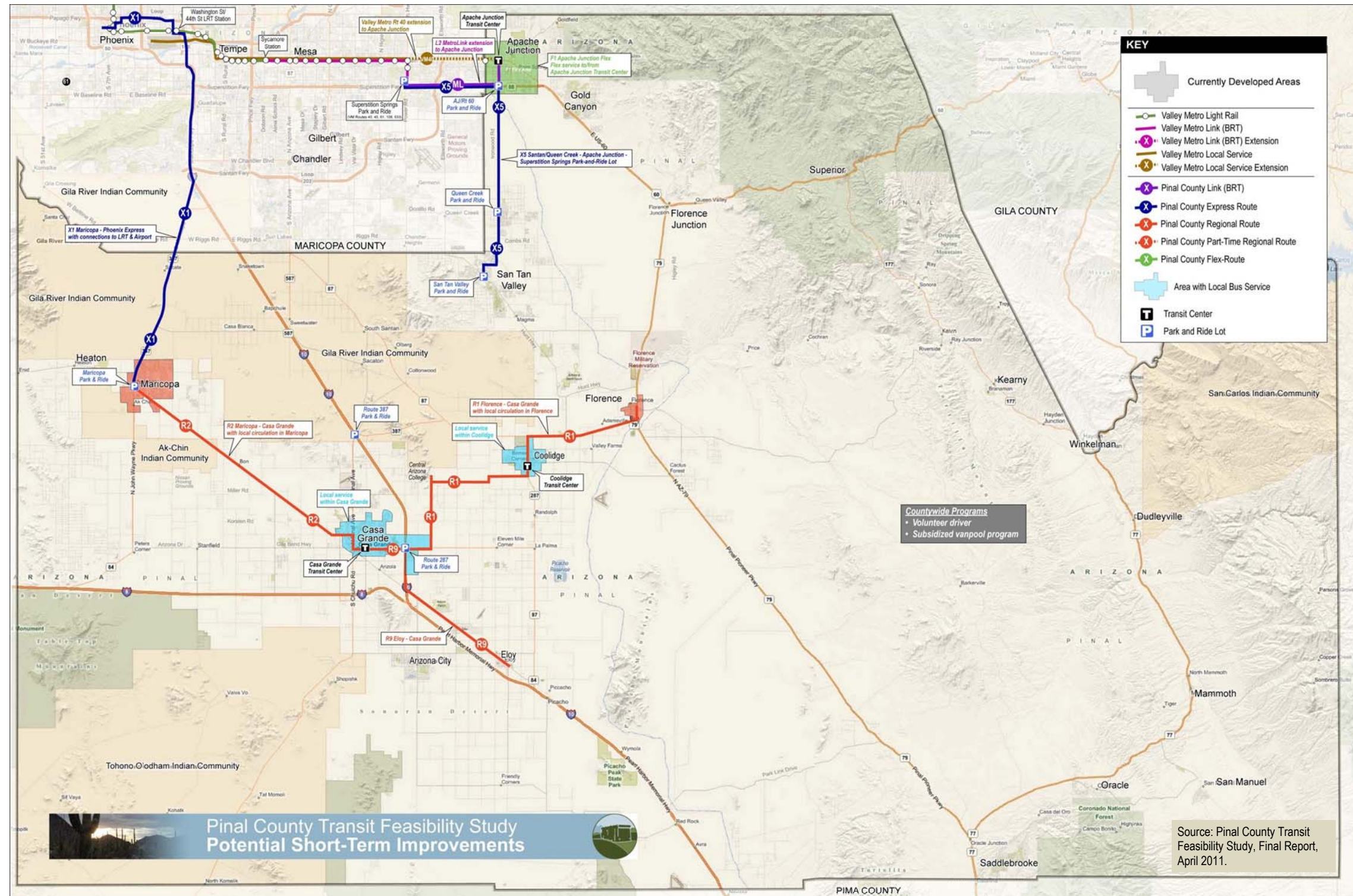
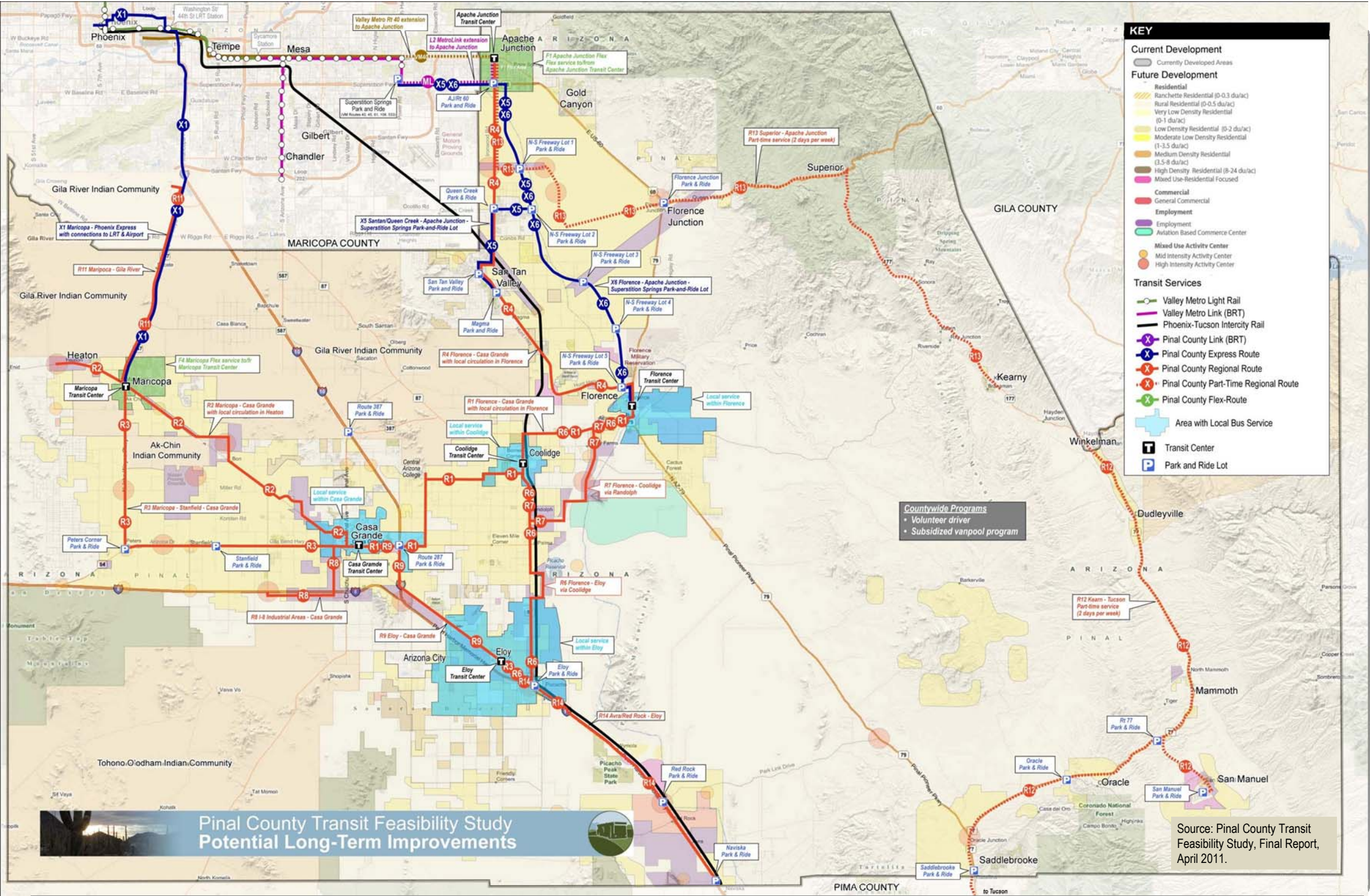




FIGURE 31 – POTENTIAL LONG-TERM TRANSPORTATION IMPROVEMENTS





- Intercity High-Speed Rail (Phoenix – Tucson) with service in Pinal County;
- Express Bus and arterial BRT routes, such as the San Tan Valley – Superstition Springs Express and the Apache Junction – Superstition Springs Express between Florence and the Superstition Springs P&R lot;
- New regional transit routes –
  - Heaton (west of Maricopa) – Maricopa-Casa Grande
  - Maricopa-Casa Grande via Peters Corner
  - Florence-Apache Junction
  - Florence-Eloy via Coolidge
  - Florence-Coolidge
  - I-8 industrial areas – Casa Grande
  - Eloy-Casa Grande
  - Maricopa-Gila River Indian Community (GRIC)
  - Winkelman-Tucson
  - Kearny-Apache Junction
  - Avra Valley/Red Rock-Eloy; and
- New local bus services in Apache Junction, Maricopa, Coolidge, Florence, Casa Grande, and Eloy.

## 8.4.2 GILA COUNTY SMALL AREA TRANSPORTATION STUDY (SATS)

The *Gila County Small Area Transportation Study* contains the following recommendations for advancing transit services in the county:

### PROJECTS

- Construct P&R facilities for use by carpools and vanpools; and
- Update the Payson Public Transit Study.

### STUDIES

- Study expansion of the CVCT Dial-a-Ride (DAR) service from Miami-Globe to Superior;
- Study the feasibility of future transit service between the Globe and Payson areas;
- Study implementation of permanent rail excursion service between Miami, Globe, and Apache Gold Casino; and
- Study the feasibility of replacing former Greyhound service through Globe and Miami along the US 60/US 70 corridor.

## 8.4.3 CITY OF COOLIDGE

Operating improvements contained in the City of Coolidge *Five-Year Transit Plan* include the following:

- Relocation of Administrative Office to a New Facility;
- Support Recommendation of Coolidge-Florence Regional Transportation Study;
- Set aside space for community transit center;
- Improve coordination of service between Florence, Coolidge, and Casa Grande;
- Investigate establishment of a Mobility Management Program to support carpooling;
- Service Improvements, Specifically for West Central Loop - Green Route;



- Evaluate incorporation of “bi-directional” routing for all Cotton Express routes;
- Evaluate adjustments to fare structure;
- Clarify services for the disabled to be consistent with terms and requirements of the American with Disabilities Act (ADA);
- Review marketing of transit service to the general public;
- Obtain more information about the requirements and process for development of regional coordination plans and FTA minimum requirements for coordination; and
- Seek out sources of funding for the new Administrative Offices, Transfer Station, and Maintenance Facility.

## 8.4.4 GLOBE/MIAMI

As noted earlier, the Town of Miami operates the only available service for the general public in Gila County. The CVCT is a DR Service that operates Monday through Friday throughout a 40-square-mile service area that includes the Town of Miami, City of Globe, and nearby portions of unincorporated Gila County. The Cobre Valley Community Transit Study, conducted concurrently with the Cobre Valley Comprehensive Transportation Study, presents specific transit recommendations for improving system capability and efficiency. The principal recommendation is the establishment of a deviated, fixed route system with the ability to provide DR support. The revised transit system also would interface with the San Carlos Apache Transit Services (SCATS) at designated transfer points. **Table 24** outlines the recommended short-term improvements from the Cobre Valley Community Transit Study.

TABLE 24  
RECOMMENDED IMPROVEMENTS TO THE COBRE VALLEY COMMUNITY TRANSIT SYSTEM

Recommended Action	Description	Cost
Deviated fixed route system	Establish two new fixed routes with demand response support.	TBD
Enhance partnerships	Strengthen existing partnerships and seek to establish new support of the system.	TBD
Design and establish marketing strategy	A marketing strategy should be designed and started prior to the implementation of the new fixed route system.	\$3,000
Policy, procedure, and management systems update	Establish management practices, record keeping protocols and filing systems for program compliance.	TBD

Source: Table 4: Recommended CVCT Improvements, *Cobre Valley Comprehensive Transportation Study*, Executive Summary, CAG et al, April, 2013 (from *Cobre Valley Community Transit Study*).

## 8.4.5 CITY OF MARICOPA

The City of Maricopa operated as a pilot transit service, the MAX – maricopaXPRESS, for a two-year period. The service consisted of a commuter-hour express transit service to Downtown Phoenix and local excursion service to Tempe. Express services originated at and returned to a joint-use, park-and-ride facility in the north central part of the City. This service could not be sustained subsequent to the loss of state transportation funding, and it has been cancelled. The City continues to provide assistance to those who desire to participate in Valley Metro vanpooling to the Phoenix metropolitan area.





As part of the City of Maricopa 2010-2013 Strategic Plan, five objectives were outlined. Two of these objectives related to the maricopaXPRESS, which is no longer in service, although it remains likely this service will be reinstated as funds become available. The other three, cited below, can be assumed to be active:

- Establish a Transit Center or P&R facility to facilitate passenger rail, regional, bus, and local circulator services. The *City of Maricopa Redevelopment Area Plan* focuses on the core area of historic Maricopa and includes the proposal to develop a multimodal transportation center including accommodations for local and regional bus service, structured parking to support special events and P&R and carpool/vanpool uses, a relocated Amtrak station, and connectivity with bicycle trails. This project is underway with relocation of the Amtrak station associated with grade separating SR 347 at the UPRR tracks.
- Begin development of a local circulator bus system under the Federal Section 5311 program and Dial-a-Ride service for the elderly and persons with disabilities under the Federal Section 5310 program. This service was initiated with the COMET system discussed earlier.
- Support a regional passenger rail connection to Maricopa and continue to coordinate with our regional partners to support feasibility study efforts.

Other objectives oriented to future transit services are:

- Implement a Transit-Oriented Design (TOD) overlay district to support transit services; and
- Continue to participate in regional planning efforts aimed at identifying, reserving, and funding necessary rights-of-way for future multi-modal travel corridors.

### **SHORT-TERM PROPOSALS FOR IMPROVEMENT**

Short-term objectives for improving transit services identified in a presentation to the MAG Transit Committee (February 13, 2014) include:

- Submitting a request through the Federal 5311 – Rural Transit program in the FY 2014-15 budget for three minivans;
- Requesting funding for two additional part-time drivers;
- Introducing fixed-route service with 1/4-mile deviations five days per week for two hours in the AM period and two hours in the PM period;
- Establishing a marketing initiative to target the college student and job commuter markets;
- Introducing local COMET service on Tuesdays and Thursdays; and
- Introducing shuttle service to and from the new Maricopa MultiGenerational Center.

### **LONG-TERM PROPOSALS FOR IMPROVEMENT**

- Establish connectivity with CART, providing access to most of west and central Pinal County; and
- Examine the potential feasibility of connecting Maricopa with the Valley Metro Transit System in Maricopa County.

## **8.4.6 SAN CARLOS INDIAN COMMUNITY**

The *Long-Range Transportation Plan* (LRTP) developed for the San Carlos Apache Indian Community (October 2009) included the recommendation to conduct an extensive transit feasibility study to



evaluate existing services and identify improvement opportunities. The *San Carlos Apache Tribe Transit Study* was initiated in September, 2010.

## **SHORT-TERM PLAN**

The short-term plan for San Carlos Apache Nnee Bich’o Nii Services includes the following:

- Proposed transit services for the 2011-2012 through 2014-2015 time horizons;
- Operate existing Casino, Globe, and Safford Routes in 2012;
- Add Phoenix Route in 2013, including –
  - Connection of Peridot, San Carlos, and Bylas to Phoenix metropolitan area
  - Service two days per week
  - Connection with METRO Light Rail
  - Service to Indian Health Service and VA Medical Center;
- Add Tucson Route in 2014 –
  - Service two days per week
  - Coordination with CVCT system
  - Potential connection with future passenger rail service to Arizona Eastern Railroad (AZER).

## **MID-TERM SERVICE ENHANCEMENTS (2020)**

- Increase both Phoenix and Tucson service to Monday through Friday;
- Add Whiteriver service (two days per week); and
- Add Saturday service on Safford Route.

## **LONG-TERM SERVICE ENHANCEMENTS (2030)**

- Add Saturday service to Phoenix and Tucson routes; and
- Construct new office, vehicle maintenance, and vehicle fueling facilities (Cost: \$4 million).

## **8.5 TRANSIT FUNDING AND SUPPORT ALTERNATIVES**

There are several federal programs that provide funding to support local transit systems and services in urban and rural areas. When the *Arizona Rural Transit Needs Study* was being prepared, all cities, towns, and communities in the CAG Region were classified as rural areas. Completion of the 2010 Census resulted in Casa Grande and its contributing environs (i.e., developed areas) being identified as an urbanized area with a population of 50,000 or more. The transit future for Casa Grande, which now is part of the Sun Corridor Metropolitan Planning Organization (SCMPO) that also includes Coolidge, Eloy, and unincorporated parts of Pinal County, will be addressed in the next section.

### **SECTION 5307 – URBANIZED AREA FORMULA PROGRAM**

The Urbanized Area Formula Funding Program, authorized under Title 49 U.S.C., Section 5307, makes federal resources available to urbanized areas and state Governors for transit capital and operating assistance and related planning. An urbanized area is an incorporated area with a population of 50,000 or more designated as such by the U.S. Department of Commerce, Bureau of the Census. With completion of the 2010 Census, Casa Grande and its contributing environs achieved designation as an “urbanized area” and, therefore, has become eligible for funding assistance under Section 5307. The Governor or Governor’s designee is the designated recipient of



federal funds for urbanized areas between 50,000 and 200,000. The FTA Web site indicates the following stipulations regarding the Section 5307 program:

**Funding Eligibility:** Funds may be used for planning, engineering design, and evaluation of transit projects and other technical transportation-related studies; capital investments in buses and bus-related items, such as the replacement of buses, overhaul of buses, rebuilding of buses, crime prevention, security equipment, and construction of maintenance and passenger facilities; and capital investments in new and existing fixed guideway systems, including rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software. All preventive maintenance and some ADA complementary paratransit service costs are considered capital costs. The federal share is not to exceed 80 percent of the net project cost.



**Local/State Match:** The federal share cannot exceed 80 percent of the net project cost. However, the federal share may be 90 percent for the cost of

vehicle-related equipment attributable to compliance with the ADA and the Clean Air Act, as well as projects or portions of projects related to bicycles. The federal operating assistance share may not exceed 50 percent of the net cost of the system.

## **SECTION 5311 – NON-URBANIZED AREA FORMULA PROGRAM**

This program, authorized under Title 49 U.S.C., Section 5311 – Formula Grants for Rural Areas (Pub. L. 113-185), provides funding for public transportation services in non-urbanized areas with a population under 50,000 persons. The FTA apportions funds that are appropriated under this program to states according to a statutory formula that is based on each state's population in non-urbanized areas. Funds are available to the state for obligation for the year of apportionment plus two additional years, and they are administered in accordance with State Management Plans. Eligible rural and small urban areas include public bodies, private non-profit organizations, and private for-profit enterprises under contract to an eligible recipient. Financial assistance under this program covers 80 percent of capital project costs (e.g., equipment purchase and facility construction) and administrative expenses. Operating expenses, however, only are eligible for a 50 percent federal contribution.

## **POTENTIAL NEW TRANSIT SERVICES**

The *Arizona Rural Transit Needs Study* identified several communities in the CAG Region that would be eligible for Section 5311 funding support for local transit service based on estimated need. In Gila County, the Town of Payson ranked 13<sup>th</sup> among 48 rural cities, towns, unincorporated places, and Native American Indian Communities in Arizona relative to the projected need for this funding in 2016. The Study identified eight communities in Pinal County that would be candidates for Section 5311 funding in 2016 ([ ] indicate ranking among the 48): Arizona City [21], Casa Grande [1] (no longer eligible with 2010 Census results), Eloy [6], Florence [11], Maricopa [9], Oracle [27], San Manuel [18], and Superior [19]. In addition, four Indian Communities have been identified as candidates for funding of transit services under the Section 5311 program: the Gila



River Indian Community [3], the White Mountain Apache Indian Community [5], the San Carlos Apache Indian Community [10] and the Tohono O’odham Nation [8].

The ranking of seven communities in the top 10 clearly substantiates the need for a comprehensive integrated multimodal transportation system plan, such as this RTP, in the CAG Region. The Study highlights the fact that six of the communities with unmet transit needs are located in Pinal County and suggests that a regional Section 5311 operator be established (possibly the already-operational Cotton Express in Coolidge) to improve service coordination and increase cost effectiveness.

## POTENTIAL EXPANSION OF TRANSIT SERVICES

Three operating transit systems in the CAG Region were identified as having unmet need that could be the target of federal assistance through the Section 5311 program. The CVCT system that services the Miami-Globe area is not considered a top candidate for expansion, but the area has a projected unmet transit need in 2016 of 29,400 passenger trips per year according to the *Arizona Rural Transit Needs Study*. The Cotton Express system operating in Coolidge carries 4.25 passenger trips per vehicle hour compared to the statewide average of 4.94 passenger trips per vehicle hour for rural transit systems. With an unmet demand of 87,700 passenger trips per year projected for the Coolidge area, expansion of the Cotton Express service ranks sixth in the state among the 20 operating systems. The Study states that expansion of this system should be considered in the broader regional context (as noted above) of the core for a regional Section 5311 program operation.

## SECTION 5311(F) – INTERCITY PUBLIC TRANSPORTATION SERVICE

Section 5311(f), Intercity Bus Program, requires each state to spend 15 percent of its annual Section 5311 apportionment to develop and support a program of projects for intercity bus transportation. The goal of this program is to connect isolated rural areas throughout the country to larger communities. The *Arizona Rural Transit Needs Study* includes a demand analysis for this type of service in the state. The result of this analysis identifies 11 top candidate travel corridors considered to best warrant new or expanded intercity, commuter-oriented general public transportation service. Five of the 11 candidates are located in the CAG Region. **Table 25** identifies the five corridors.

TABLE 25  
CANDIDATE CORRIDORS FOR SECTION 5311(f) INTERCITY PUBLIC TRANSPORTATION SERVICE

County	Corridor	Route Length (Approximate)
Gila	Miami-Superior-East Mesa	66 miles
	Payson-East Mesa	76 miles
Pinal	Casa Grande-Arizona City-Eloy-Coolidge	34 mile
	Coolidge/Florence-Phoenix	62 miles
	Maricopa-Tempe	31 miles

\* NOTE: The MaricopaXPRESS (MAX) was a pilot program through September 30, 2011, when operations ceased due to elimination of federal funding support.

Source: Table 4.7, List of Top Candidates for New or Expanded Intercity Section 5311 Program Services, *Arizona Rural Transit Needs Study*, May, 2008

The *Arizona Rural Transit Needs Study* indicates that the three candidates in Pinal County reflect “...by far the most significant need going forward due to the rapid population growth in Pinal County and the high level of trip-making to and from the Phoenix urbanized area.” It adds that intercity bus service should be oriented to, and coordinated with, future commuter or intercity rail services when such services are implemented. Meanwhile, any intercity bus service implemented under Section 5311 should be designed to complement existing intercity services through Pinal County offered by Greyhound and Tufesa. Both provide passenger bus transportation and shipping





services. Greyhound's service area includes 3,800 destinations in the United States and Canada. The company has interconnecting service with Amtrak, linking communities without Amtrak service to Amtrak stations in conjunction with the purchase of a rail ticket. Tufesa, primarily a West Coast passenger bus service, has destinations as far north as Sacramento, California, and Las Vegas, Nevada, to Guadalajara, Mexico.

## **SECTION 5310, 5316, AND 5317 TRANSIT SERVICE**

### **SECTION 5310 – TRANSPORTATION FOR ELDERLY PERSONS AND PERSONS WITH DISABILITIES**

Section 5310 provides assistance for transit operators, both urban and rural, to serve elderly and disabled persons. The federal share of eligible capital costs may not exceed 80 percent of the net cost of the activity. The 10 percent that is eligible to fund program administrative costs, including administration, planning, and technical assistance, may be funded at a 100 percent federal share. The local share of eligible capital costs shall be no less than 20 percent of the net cost of the activity. Currently, seven communities in the CAG Region operate services under Section 5310: Casa Grande, Eloy, Coolidge, Florence, Hayden, Globe and Miami. The *Arizona Rural Transit Needs Study* recommends that the communities of Arizona City, Maricopa (also recommended for Section 5311), San Manuel, and Superior in Pinal County consider implementing Section 5310 service.

### **SECTION 5316 – JOB ACCESS REVERSE COMMUTE PROGRAM**

The Job Access Reverse Commute (JARC) program is an FTA program directed toward "...states and localities to develop new or expanded transportation services that connect welfare recipients and other low-income persons to jobs and other employment-related services." According to the *Arizona Rural Transit Needs Study*, "Section 5316 funding can support rural Arizona in a number of applications. Capital funding through the JARC program can support trips between rural areas and urban or suburban employment centers. JARC funds also may offset existing public transit route operation costs to serve commuter needs within rural parts of the state, as well as between rural portions and urban employment centers." Eligible applicants include: private, nonprofit organizations; state or local governmental authority; and operators of public transportation services, including private operators of public transportation services. A number of different services are eligible, including: operating costs, capital costs, and other costs associated with reverse commute by bus, train, carpool, vans, or other transit service. With the passage of MAP-21, funding under this formula program is still available through Section 5310, and transit agencies may continue JARC programs through the General Authority established in the revised Section 5307 (Urban) and Section 5311 (Rural) formula programs (see above).

### **SECTION 5317 – NEW FREEDOM**

The New Freedom Grant Program was created to encourage service and facility improvements that would address the transportation needs of persons with disabilities, and go beyond the stipulated requirements of the ADA. Federal funds are available to support both capital and operating costs of new public transportation services that are targeted for the benefit of persons with disabilities, or providing new or innovative public transportation alternatives that go beyond those required by the ADA. Eligible recipients include: private, nonprofit organizations; state or local governmental authority; and operators of public transportation services, including private operators of public transportation services. This program has considerable flexibility with regard to eligibility, as the purpose is to encourage new and innovative methods and means for assisting in the mobility requirements of persons with disabilities. With the passage of MAP-21, this funding program was



rolled into Section 5310. The General Authority established under Section 5310 allows the Secretary of the USDOT to make grants for public transportation projects that exceed the requirements of the ADA.



## 9.0 RAIL ELEMENT

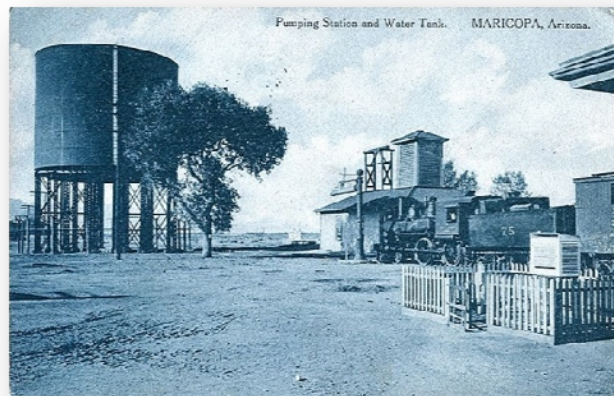
The Rail Element addresses the operational features of both passenger and freight rail and how and where the rail system serves the CAG Region. The freight hauling function of railroad operations in the CAG Region are discussed in Chapter 10 – Freight Element.

### 9.1 RAIL FREIGHT SERVICE

There are five railroad lines in the CAG Region (**Figure 32**). Four support active railroad operations; the fifth is out of service.

#### 9.1.1 UNION PACIFIC RAILROAD

The UPRR, acquired the Southern Pacific Railway (SP) in 1996. The SP was the first railroad to reach Arizona, crossing the Colorado River at Yuma in May, 1877. The railroad had reached Maricopa, a water stop for the early steam engines, by about 1910, and it owned most of the trackage in southern Arizona by 1955. The SP tracks are now part of a 760-mile railroad corridor between Los Angeles, California, and El Paso, Texas. This corridor accounts for approximately 20 percent of the UPRR's rail traffic today. Since acquisition of the SP routes, the UPRR has double-tracked approximately two-thirds of the Sunset Route, which is the main line between Los Angeles and El Paso. The UPRR operates the Sunset Route and Phoenix Subdivision within the CAG Region.



- **UPRR Sunset Route** – The Sunset Route is the UPRR's east-west transcontinental mainline rail route that traverses the southern portion of Arizona. This route carries large amounts of freight between cities on the Pacific coast and major rail hubs in the Midwest and Texas, with links to the nation's Midwest and East coast. The UPRR is in the process of major upgrading of this line; the company is creating a high-capacity route by double-tracking the line between Los Angeles, California, and El Paso, Texas. Currently, traffic on the Sunset Route averages 44 to 49 trains per day. The improvements will result in a substantial increase in rail traffic, potentially doubling rail freight traffic through Arizona in the future.
- **UPRR Phoenix Subdivision** – The UPRR Phoenix Subdivision branches from the Sunset Route at Picacho and runs north to Phoenix and points west of Phoenix. This line carries on average six trains per day. There are no major siting or classification facilities on this line.

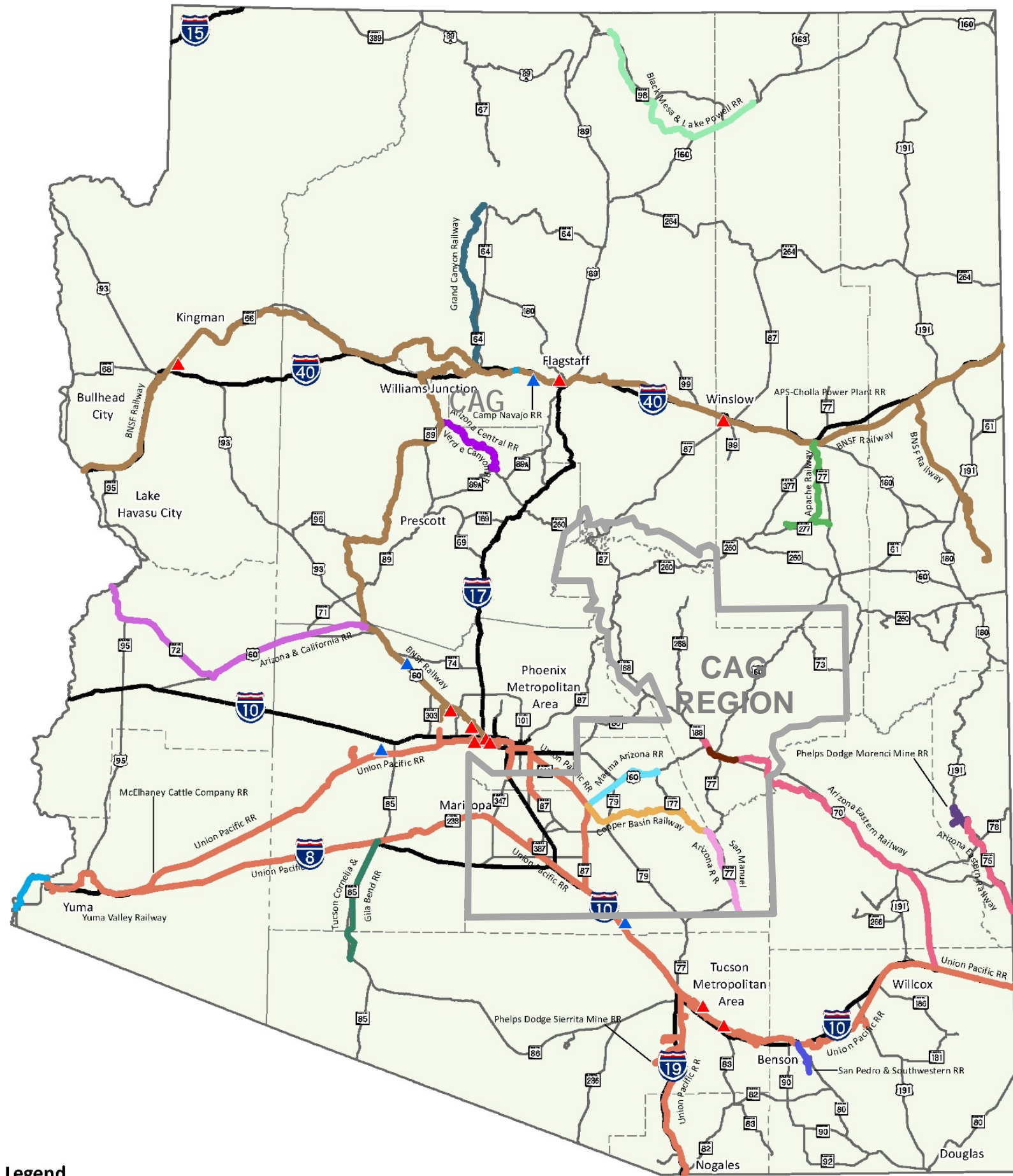
Major shipments along the UPRR Sunset Route and Phoenix Subdivision include: intermodal (truck trailer or container on train car) transport, automobiles, cement, coal, coke, chemicals, kerosene, fertilizer, lumber products and building materials, copper products, general merchandise, and military vehicles. Both rail lines are critical to the transport of metallic ores (copper, silver, gold, and zinc) mined in the CAG Region, largely in northeastern Pinal County and southern Gila County. The rail lines are also critical for the distribution of coal to power plants in the region.

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FIGURE 32 – ARIZONA'S ACTIVE RAIL SYSTEM



Legend

Railroads

- |                             |                                |
|-----------------------------|--------------------------------|
| Apache Railway              | Copper Spike RR                |
| Arizona & California RR     | Grand Canyon Railway           |
| Arizona Central RR          | Magma Arizona RR               |
| Arizona Eastern Railway     | Phelps Dodge Morenci RR        |
| Black Mesa & Lake Powell RR | San Manuel Arizona RR          |
| BNSF Railway                | San Pedro & Southwestern RR    |
| Copper Basin Railway        | Tucson Cornelia & Gila Bend RR |

- |   |
|---|
| Union Pacific RR  |
| Yuma Valley Railway   |
| <b>Freight Railroad Facilities (Classification Yards, etc.)</b> |
| ▲ Existing Railroad Facilities                                  |
| ▲ Proposed Railroad Facilities                                  |

Source: Figure 1 - Existing Railroads, Executive Summary, 2010 Statewide Rail Framework Study, Arizona Department of Transportation (ADOT), February 2010, Pg. 4.





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## 9.1.2 COPPER BASIN RAILWAY

The Copper Basin Railway (CBRY) operates from a connection with the UPRR at Magma, Arizona. This shortline railroad runs approximately 54 miles to Hayden and Winkelman in eastern Pinal County. The line includes a short, 7-mile branch or spur to Ray. The CBRY interconnects with the San Manuel Arizona Railroad (see below) in Hayden. The railroad operation is classified as a “common carrier” rail line and it accommodates a variety of goods and commodities, including copper concentrates, ore, finished and unfinished copper, sulfuric acid, lumber, Gatorade, plastics and military equipment. Nevertheless, the CBRY’s primary customer is the ASARCO Inc. Ray Mine. The railroad hauls copper ore from the ASARCO Ray Mine to the Hayden Smelter.

## 9.1.3 SAN MANUEL ARIZONA RAILROAD COMPANY

The San Manuel Arizona Railroad Company (SMARRCO), which connects the Hayden-Winkelman area to San Manuel approximately 30 miles to the south, has been out of service for several years. Recently, Capstone Mining Corporation acquired the operating Pinto Valley Mine in the Globe-Miami mining district, an acquisition that included the purchase of the SMARRCO. This railroad is again operational, serving to move copper concentrate from the Pinto Valley Mine to Mexico via the Copper Basin Railway

## 9.1.4 MAGMA-ARIZONA RAILROAD

The Magma-Arizona Railroad Company once operated between Magma, Arizona and the UPRR Phoenix Subdivision to Superior in northeastern Pinal County. This railroad has been out of service since the late 1960s. The trackage has not been maintained, although crossings at major highways are in good condition. It was constructed along a very circuitous routing and terminates in the midst of mining operations in Superior. Given the need for rehabilitation and the circuitous routing, it is unlikely that this railroad line will again be used for freight services in the future, although renovation of the SMARRCO also was unexpected.



## 9.1.5 ARIZONA EASTERN RAILWAY

The Arizona Eastern Railway (AZER) operates over 265 miles of track in Arizona and New Mexico, which includes trackage rights on the UPRR Sunset Route between Bowie, Arizona, and Lordsburg, New Mexico. In the CAG Region, the AZER terminates at the Miami Copper Mine and Smelter currently operated by Freeport-McMoRan north of Globe. This route connects with the UPRR Sunset Route in Bowie, Arizona, 135 route-miles to the south. A 10-mile spur was added in 2006-2007 to shuttle copper ore from Safford mining operations to the smelter at Miami-Claypool. This railroad was recently purchased by Genesee & Wyoming Inc. (G&W) from Iowa Pacific Railroad. G&W expects to continue providing freight services in the area, particularly in support of the copper mining activity.



## 9.2 RAIL PASSENGER SERVICE

### 9.2.1 CURRENT SERVICE

Currently, there is no active rail passenger service in the CAG Region beyond that provided by Sunset Limited and Texas Eagle operated by Amtrak. The story of the Sunset Limited gives perspective to rail passenger and freight rail service in Arizona:

*The Sunset Limited is the descendent of the former Southern Pacific Railway's (SP) service dating to 1894. The "Limited" part of its name once differentiated trains that stopped at a "limited" number of stations along their routes from "local" trains that make every stop. Today, it is the oldest "named" train in continuous operation. The modern-day "western lifestyle" magazine Sunset began in 1898 as a promotional magazine for the SP. That name traces its origins to a predecessor railroad, the Galveston, Harrisburg and San Antonio Railway, known as the Sunset Route as early as 1874. At its SP inauguration and during several periods in its history, it was an all-Pullman train consisting of only sleeping cars (no coaches) and extending to San Francisco. Through the years, it went from steam power and wooden cars to steel heavyweight cars to dieselization and streamlining in the 1950s. Amtrak took over the [passenger service provided by the Sunset Limited] in 1971.<sup>3</sup>*

As noted earlier Amtrak provides passengers service in the CAG Region at the Maricopa Station. This station is being relocated and upgraded to eliminate delays at the intersection of SR 347 and the UPRR tracks. The Maricopa Station is served by both the Sunset Limited and the Texas Eagle routes of Amtrak.

In the past, Amtrak passenger rail service was provided to Union Station in downtown Phoenix along the UPRR Phoenix Subdivision and the earlier SP line. The passenger train then traveled westward along the Wellton Branch back to the UPRR mainline west of Yuma. In 1996, UPRR suspended operations on the Wellton Branch, which effectively ended its use by Amtrak. In addition to damage to one of the bridges, the line needed significant maintenance and upgrades for passenger service to continue. UPRR could not justify the expense and Amtrak was not willing to finance this activity. Therefore, Amtrak established the Maricopa Station electing to use the UPRR Sunset Route.



According to the *Arizona State Rail Plan*, a near-term objective would be to reestablish Amtrak service directly to Phoenix with rehabilitation and reactivation of the Wellton Branch or routing along the Arizona and California Railroad west out of Wickenburg. Although this would bypass the Maricopa Station, which has been in use as a gateway to Phoenix since 1997, growth of the Casa Grande metropolitan area and creation of the Sun Corridor MPO offers opportunities for a new Amtrak station serving central Pinal County. In addition, the *Arizona State Rail Plan* identified the following opportunities for enhancing the existing Amtrak passenger rail service:

<sup>3</sup> Sunset Limited™ Route Guide, Amtrak, National Railroad Passenger Corporation, November, 2009.





- Upgrade current Sunset Limited service from tri-weekly to daily;
- Implement regularly scheduled “thruway” bus service between Maricopa and Phoenix coordinated with the schedule of the Sunset Limited service;
- Work with UPRR and Amtrak to improve the scheduled travel speed on the Sunset Limited in Arizona (UPRR double-tracking may aid in realizing this opportunity);
- Improve passenger facilities to include checked baggage service (the new Maricopa Station will significantly enhance the passenger experience for travelers on the Sunset Limited); and
- Install self-serve Amtrak ticket machines.

## 9.2.2 POTENTIAL FUTURE SERVICE

The *Arizona State Rail Plan* addresses the issues and challenges facing the state with regard to passenger and freight rail service. An entire section is devoted to the future of passenger rail service and identifies opportunities for high-speed and intercity rail, regional commuter rail, and tourist railroad enhancements. The *Arizona State Rail Plan* stresses that the state could benefit from a comprehensive rail system that would provide an efficient alternative mode of travel, reduce congestion, and support more efficient land use patterns. Long-term passenger rail development is contemplated in several corridors, two of which pass through the CAG Region (**Figure 33**).

### INTERCITY RAIL PASSENGER SERVICE

ADOT is proceeding with studies to implement high-speed, intercity rail service in association with the I-10 travel corridor between Phoenix and Tucson. **Figure 33** reveals that this service would pass directly through Pinal County. The *Arizona State Rail Plan* envisions this service supporting activity and travel in the Arizona Sun Corridor, “where more than 85 percent of the population of Arizona will reside in 2050.” Potential future intercity rail stations are viewed as important nodes that would provide focus for living and travel activities alike.



As the Arizona Sun Corridor grows, travel through Phoenix and Tucson will expand proportionately. Although a new regional airport in Pinal County is a possibility, the *State Aviation System Plan* does not currently support such a facility. Therefore, high-speed, intercity rail passenger service offers a viable alternative. Ultimately, high-speed, intercity rail has the potential to be competitive with short-haul flights. In the interim, high-speed service between Phoenix and Tucson with a station in central Pinal County offers the opportunity for a

faster, more efficient, and safer means of air travel for those in the southern portion of the CAG Region.

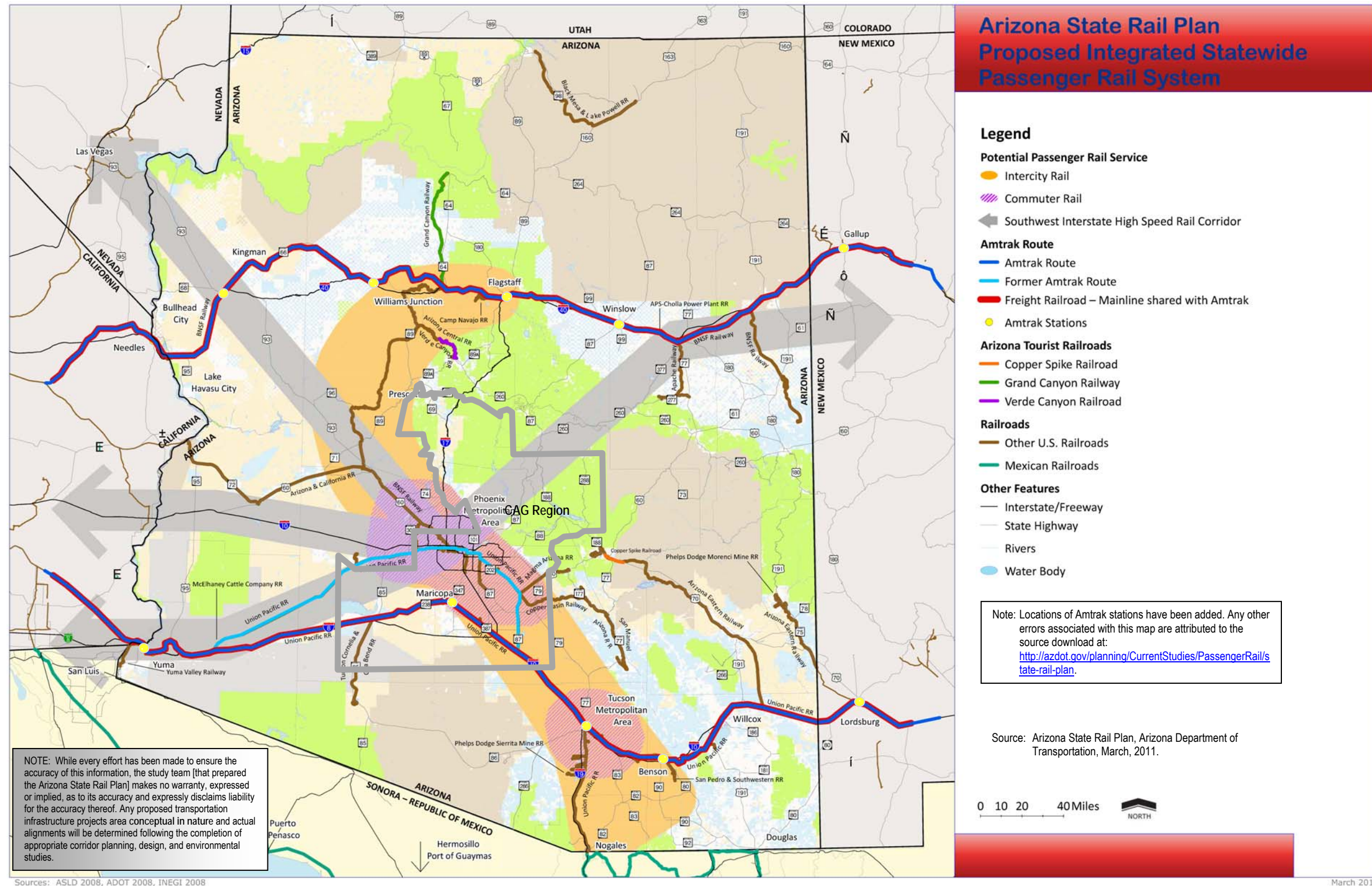
Direct access to the two major regional airports in the two metropolitan areas would significantly enhance the travel experience of those persons traveling by air. High-speed, intercity service into Phoenix by way of the Phoenix Subdivision would permit development of a station with direct access to the METRO Light Rail and Phoenix Sky Harbor International Airport via the Sky Train. Similarly, the potential exists on the Sunset Route to connect with the UPRR’s southbound Nogales Subdivision in Tucson, which passes directly west of the Tucson International Airport.

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FIGURE 33 – PROPOSED PASSENGER RAIL CORRIDORS THROUGH THE CAG REGION





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## COMMUTER RAIL SERVICE

As the Arizona Sun Corridor communities in the CAG Region grow and become more integrated and interdependent with the larger metropolitan areas to the north and south, commuter rail service would complement the existing highway connections and offer a safer, faster means of travel. According to the *Arizona State Rail Plan*:

*Commuter rail trains typically provide service between suburban developments and urban centers for the purpose of reaching activity centers, such as employment, special events, and intermodal connections. Designed primarily to meet the needs of regional commuters in the AM and PM peak travel periods, commuter rail service typically operates at greater frequencies during the weekday peak travel times. The length of a typical commuter rail corridor ranges from 30 to 50 miles, with passenger stations generally spaced 3 to 10 miles apart. This type of system has been recommended for both the Phoenix and Tucson metro areas, as approved by both the MAG and PAG regional councils.*

The objective of this service would be to create integrated connectivity with local public transportation systems. Specifically, connections would be desirable with the fixed-route bus systems (Valley Metro in Phoenix and Sun Tran in Tucson) at key stations with commercial amenities and the METRO Light Rail system in Phoenix. Interconnectivity would provide the foundation for an emerging transit system in the Arizona Sun Corridor with southern Pinal County in the center. The Rail Runner, operated by the Rio Metro Regional Transit District between Albuquerque and Santa Fe, New Mexico, is a prime example of establishing interconnectivity between a large metropolitan area – Albuquerque – and a smaller, but significant urban area – Santa Fe.



As commuter rail is still in the early planning stages in both the Phoenix and Tucson metropolitan areas, there are opportunities to coordinate local system planning in the CAG Region communities with the future high-speed, intercity rail passenger service traversing Pinal County. Coordinated planning would reduce development costs and improve system efficiency by allowing shared rights-of-way, compatible infrastructure elements, and shared station locations.

## TOURIST RAIL SERVICE

Excursion or tourist railroads have contributed to the economy of some areas of Arizona. As recently as 2011, the Copper Spike excursion train operated between Globe and the Apache Gold Hotel Casino on the San Carlos Indian Community. The Copper Spike excursion train service consisted of four daily round-trips during the winter and spring, Thursday through Sunday. Acquisition of the AZER in 2011 by G&W resulted in the cessation of this excursion train's operation, as the new owner opted to devote the track to serving the copper mining activity of the area. Nevertheless, there a number of reasons to be optimistic that this rail passenger service may be reestablished in the future:

- The *City of Globe General Plan 2035*, published in February, 2014, includes reevaluation of the AZER passenger service opportunities as an implementation strategy under Goal CE-2, Public Transportation Alternatives in coordination with the General Plan's Tourism Element.

- The *City of Globe General Plan 2035* also includes a policy statement to encourage working with G&W, operators of the AZER, to reestablish excursion service, which also served as a form of commuter rail service for employees and visitors of the Apache Gold Hotel Casino.
- The excursion train service was an integral element of the Copper Spike Excursion Trail being established in Globe.
- In support of the train service, the CVCT system, serving Globe, Miami, and adjacent Gila County areas, includes a transfer center at the historic Globe Railroad Depot to accommodate a connection to the San Carlos Apache Nnee Bich'oo Nii Transit service and the Copper Spike train.
- Improving public transportation services is an interest of the San Carlos Apache Indian Community.
- The *Arizona State Rail Plan* notes that tourist railroad service contributes to local economies and suggests financial assistance programs could stimulate new rail passenger service, such as extension of the Copper Spike trail to Safford.

Therefore, it is reasonable to expect that this rail passenger excursion service, which carried 27,000 passengers in 2010, may someday be reestablished.



## 10.0 FREIGHT ELEMENT

Goods, produce, and other commodities transported from one place to another, generally for commercial gain, are considered to be freight. Freight movements can be accomplished by truck, rail, air, ship, pipeline or any other reasonable form of conveyance. Goods reach markets and the consumer through a complex network of freight services and operations. Raw materials, such as coal and oil, are transported to processors, who turn the raw materials into a usable product, such as steel or aluminum. These products are then transported to manufacturers, who transform them into a product for the consumer market. Marketable products often go through warehouses that are used to store goods until the timing is right for their sale to consumers. Some products are shipped directly to commercial outlets, such as department stores, where they are sold directly to consumers. Thus, the process of freight movement is critical to the social and economic fabric of our communities, states, and the nation as a whole.

Freight movements also impact daily life and mobility through the need for transportation facilities capable of supporting numerous and, often, heavy loads. Roads must be constructed to carry large trucks as well as automobiles and other smaller modes of travel. Long-range movements of bulk materials, such as coal, require the special facilities developed by railroads. Overall, the movement of freight is driven largely by a simple rule of thumb: high-value-added products, such as electronics, can bear the cost of more expensive freight services offered by trucks and airplanes, while low-value-added raw materials must be transported by rail, which is slower, but capable of hauling greater quantities. Trucking activity generally is easily accommodated by the highway and roadway network. Freight trains, on the other hand, tend to impact traffic on the highway and roadway network, because roads crossing railroad tracks must be controlled to avoid interruption of train movements.

Given the importance of freight movements and the flow of commodities to daily life, it is necessary for goods movements to be accommodated in the long-range transportation planning process. In the CAG Region, freight is transported mostly by truck and rail, with a small amount of high value added items delivered through air services. Therefore, the effectiveness of the region's transportation system to move both people and goods must be addressed to ensure a high level of traveling safety, minimum congestion, and quality of life. This requires careful consideration of the regional freight infrastructure and an assessment of opportunities and constraints associated with the freight industry and freight operations. **Figure 34** shows the current freight infrastructure that accommodates the movement of goods to, from, and within the CAG Region, as well as potential locations for future freight activity centers.

Pipelines and electrical transmission lines, although not explicitly a component of the freight structure of the region, are equally critical to the transportation of power and energy resources necessary for all spheres of social and economic activity. Therefore, a section in this Freight Element has been devoted to summarizing these important regional assets.

### 10.1 CURRENT FREIGHT INFRASTRUCTURE

The current freight infrastructure of the CAG Region is comprised of the regional highway and arterial roadway network, railroad lines, and general aviation airports. Supporting these avenues for the movement of goods is a collection of freight terminals, which facilitate the transfer of goods between producers and buyers, and warehouses, which permit the temporary storage of goods until ready for

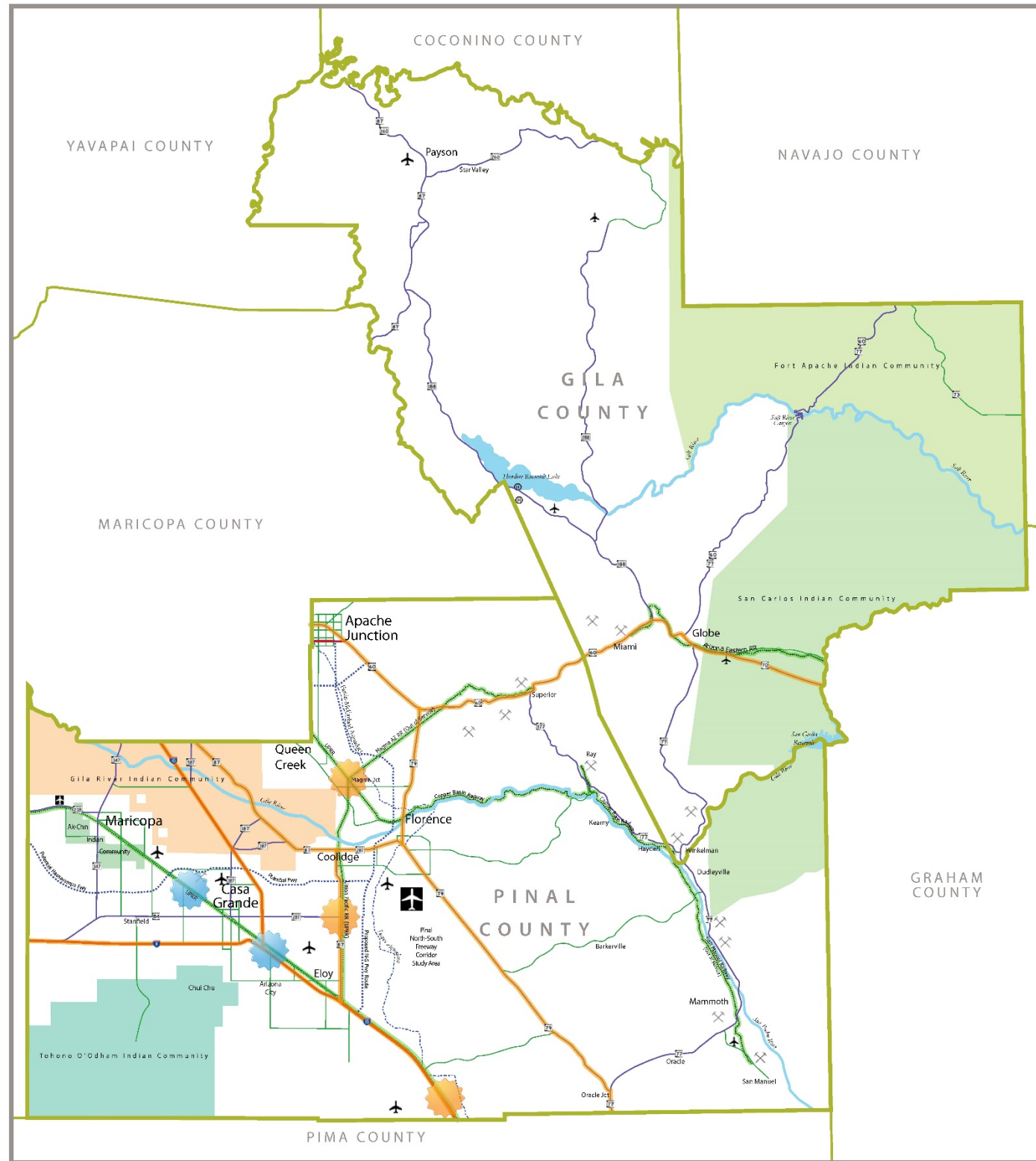


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FIGURE 34 – CAG REGION FREIGHT INFRASTRUCTURE



## Existing and Potential Future Surface Freight Infrastructure

### LEGEND

#### Freight Center Type

- Mixing Center
- Manufacturing & Local Distribution Facilities
- Active Rail Freight Corridor
- Road on National Network for Conventional Combination Trucks\*

#### Map Features

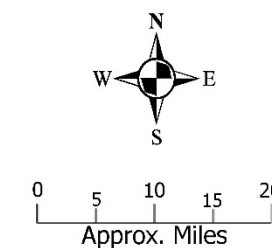
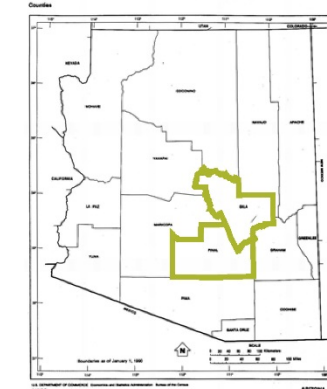
- County Boundary
- Freeway
- State Highway
- Major Highway
- Railroad
- Aquaduct
- Open Pit Mine
- Lake/Reservoir
- Major River
- Existing Airport
- Potential Future Airport
- Heliport

\* Source: Figure 5.2, Study Area Majority Facility Types, Final Report, Technical Memorandum II - Sun Corridor Supply Chain Opportunities, Freight Transportation Framework Study, Joint Planning Advisory Council (JPAC), BQAZ Web site date: 2013-05-13.

\*\* Note: Roads identified should not be interpreted as the official National Network. Conventional combination trucks are tractors with one semitrailer up to 48 feet in length or with one 28-foot semitrailer and one 28-foot trailer. Conventional combination trucks can be up to 102 inches wide.

Source: National Network for Conventional Combination Trucks; 2009, U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Office of Freight Management and Operations, Freight Analysis Framework, version 2.2, 2009.

#### Vicinity Map





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use or sale. **Figure 34** does not show large internal networks associated with the numerous mining operations in the region, as these are privately maintained for the vital interests of the mining operation.

There are four primary freight modes operational in the CAG Region. Trucking is the most ubiquitous and most easily discernible mode of goods movement, as trucks are used mostly for moving goods to stores and shops in the region that have direct contact with consumers. Rail freight is perhaps the next most noticeable form of freight movement, because railroad traffic interrupts roadway traffic and trains operate in exclusive corridors. As noted above, some products could justifiably be shipped as air cargo, but air freight services are relatively limited in the region. In addition to direct transportation modes noted, the freight infrastructure includes warehouses, terminals, and intermodal facilities (the latter supporting freight movements via truck and rail operations). Transportation of consumable goods and commodities also is accomplished through pipelines and electrical transmission facilities.

## 10.1.1 TRUCKING

Virtually every business and household in the region depends to some extent on the mobility of trucks for shipping and receiving of consumer goods and materials for the manufacture and assembly of products. Trucking companies, freight terminals, distribution centers, and warehouses, as well as the local postal and express delivery systems, represent the primary components of the region's truck freight infrastructure. Each component represents either a destination or generator of freight movements relative to the supply line of regional, state, and national commerce. The trucking industry is heavily reliant on the region's roadway network of Interstate routes, US routes, and State Highways, as well as County Roads, over which trucks of all types and purpose travel. **Table 26** lists the major routes on the SHS serving the CAG Region.

### PINAL COUNTY

I-10 is a NHS High-Priority Corridor, which is supported by federal funding. I-10 is also considered a "Corridor of the Future" under an FHWA program intending to improve freight movements along six key national Interstate corridors by funding new general purpose lanes, bypasses, and truck-only lanes. The program is geared to alleviating congestion associated with truck movements in the designated corridors. In addition, portions of I-10 and I-8 currently form a segment of the CANAMEX corridor – a high-priority route through the western U.S. linking Canada with Mexico. Development of the CANAMEX corridor is a strategic endeavor of the U.S. to invest in infrastructure and technology to increase competitiveness in global trade, create jobs, and maximize economic potential.

The Joint Planning Advisory Council (JPAC), a collaborative endeavor of MAG, PAG, SCMPO and CAG, has undertaken efforts to identify, evaluate, and promote the geographic and resource advantages of Maricopa, Pinal, and Pima counties. The collaborative *Freight Transportation Framework Study* focused on highlighting the opportunities and resources of the Arizona Sun Corridor relative to freight processing and movement for regional, national, and international markets. The group's study efforts have identified feasible freight hubs, services the hubs can provide, and action items for developing the potential of the hubs to capture freight-based activities and ancillary economic development.



TABLE 26  
TRUCK TRAFFIC IN MAJOR HIGHWAY CORRIDORS IN THE CAG REGION

Route	Segment	Annual Average Daily Traffic (AADT)	Average Percent Share of Trucks
<b>Interstate Route</b>			
I-10	Riggs Road (Maricopa County) to Pinal Airpark Road (Pima County)	40,705	17.1%
I-8	Avenue 75E (Maricopa County) to I-10	8,311	24.1%
<b>US Route</b>			
US-60	Signal Butte Road (Maricopa County) to US-70 (Globe)	21,860	9.4%
	US-70 (Globe) to SR 73 (Navajo County)	2,525	10.3%
US-70	US-60 (Globe) to SR 170 (Retired) (Peridot)	7,949	8.5%
<b>Arizona State Routes</b>			
SR 73	US-260/Navajo County Line to BIA Route 44 / Fatco Rd (Navajo County)	2,247	9.0%
SR 77	SR 79/Oracle Junction to US-70 (Globe)	3,930	11.3%
SR 79	SR 77/Oracle Junction to US-60/Florence Junction	5,316	8.9%
SR 84	I-8 to SR 84/SR 287 (Casa Grande)	4,027	21.4%
SR 87	I-10 (Picacho) to Riggs Road (Chandler)	8,445	14.3%
	Sunflower Road (approx. Maricopa County) to SR 260 (north of Strawberry)	9,594	10.4%
SR 88	US-60 (Apache Junction) to Mountain View Road (Maricopa County)	5,915	7.9%
SR 177	Velasco Avenue to Heiner Drive	2,368	10.7%
SR 187	I-10 to SR 87	1,409	15.0%
SR 188	US-60 (Claypool/Miami) to SR 87	1,619	10.4%
SR 238	Hidden Valley Road to SR 347	4,183	17.3%
SR 260	Coconino/Gila County Line to SR 87	1,063	11.0%
	SR 87 to Rim Road/Coconino County Line	11,994	8.1%
SR 287	SR 84/SR 287 (Casa Grande) to SR 79 (Florence)	15,053	11.4%
SR 288	SR 188 to Chamberlain Trail (Young)	422	9.5%
SR 347	SR 84 to I-10/Queen Creek Road	15,789	16.9%
SR 387	SR 84/SR 287 (Casa Grande) to I-10	15,663	16.5%
SR 387	SR 187 to SR 87	2,869	14.2%

Source: AADT AZ SHS\_2013 at Transportation Planning, Data and Analysis, Average Annual Daily Traffic (AADT), Arizona Department of Transportation (ADOT).

Within the CAG Region, two focus areas have been identified through the *Freight Transportation Framework Study* that merit consideration for initial efforts to achieve enhancement of freight processing opportunities. In all, five locations have been determined to be potentially notable as contributors to the broader objectives of developing a viable supply chain infrastructure in Pinal County and the Arizona Sun Corridor. All five would include trucking and truck-related transportation facilities and services. Each would also be associated with railroad freight services, thereby offering opportunities for integrated, multimodal freight operations.

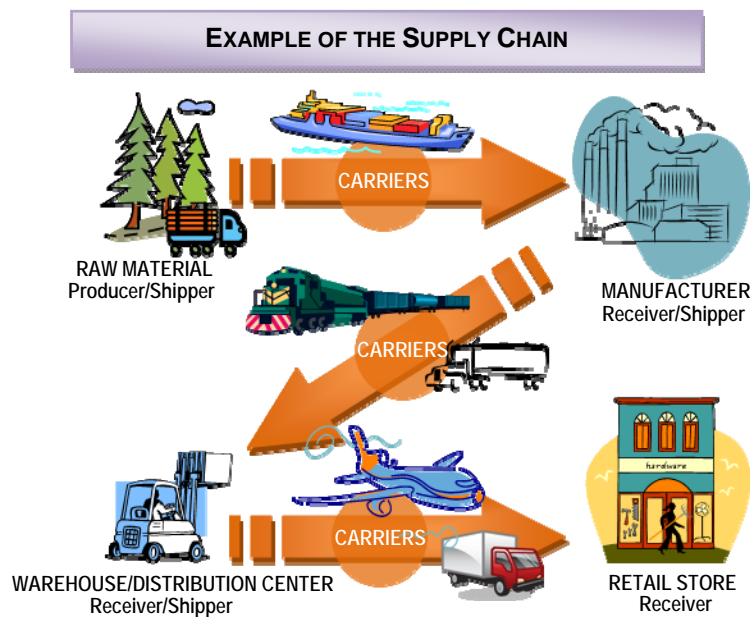
## MIXING CENTERS

Products being transported from various locations in the region or all over the country, even the world, are often staged for different market destinations at a mixing center. The mixing center combines the characteristics of an import center with processing, storage/warehousing (often temporary), and forward distribution to the ultimate destination. The essential functions of a mixing center are:





- redirection, which often is associated with rail yard switching, but also occurs when trailers are redirected at truck terminals;
- modal change (i.e., “multimodal”), which often involves what is referred to as transloading – a process by which products are transported by rail to an intermediate facility (terminal or warehouse), then transported to the ultimate destination by truck or vice versa; and
- consolidation and deconsolidation, which involves combining a number of smaller shipments together (consolidation) or breaking down a single shipment for distribution to multiple destinations.

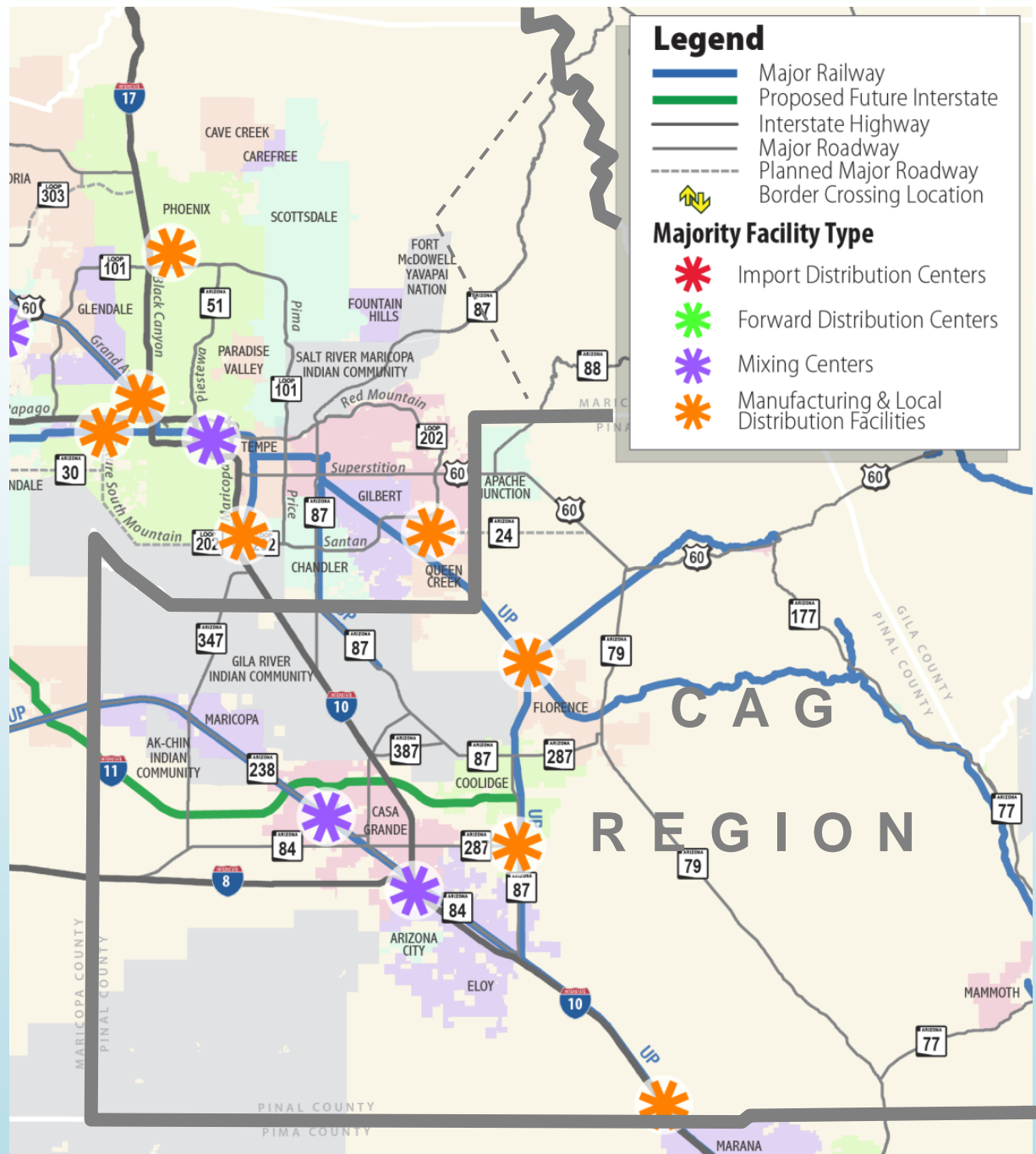


Pinal County is strategically positioned to take advantage of the emphasis on the Arizona Sun Corridor, and two locations within the CAG Region have been determined potentially viable as mixing centers (**Figure 35**). The area directly associated with the junction of I-10 and I-8 southeast of Casa Grande has been identified as a “Mixing Center” and “Focus Area,” reflecting a strong affirmative assessment of opportunities to be a major focus for the national supply chain process. Access to the two interstates, the UPRR Sunset Route, and markets outside the region are critical

factors, as well as geographic proximity to Mexico.

Although not documented in depth, the Eloy area has the potential to become a prime location for a complementary freight logistics hub. Eloy is located near the I-10/I-8 junction and is situated on the UPRR Sunset Route, where a foreign trade zone has been established. A proposed North-South Freeway Corridor, envisioned to connect to I-10 with US-60 and Apache Junction to the north, is expected to have a southern terminus at or near Eloy. Existing and potential economic conditions appear to make this area a significant long-term prospect for enhancing and increasing truck freight activities.

FIGURE 35 – MAJORITY FACILITIES FOR FREIGHT TRANSPORTATION FOCUS AREAS



Source: Technical Memorandum II – Sun Corridor Supply Chain Opportunities, Final Report, Freight Transportation Framework Study, Joint Planning Advisory Committee – A Planning Partnership for the Arizona Sun Corridor, including Maricopa Association of Governments (MAG), Central Arizona Association of Governments (CAAG, now Central Arizona Governments), and Pima Association of Governments (PAG), May 13, 2013.

## MANUFACTURING AND LOCAL DISTRIBUTION FACILITIES

These types of facilities or centers of commerce support economic activity through production, storage, and direct distribution. The *Freight Transportation Framework Study* identifies three locations within the CAG Region that would be favorable for developing this type of freight-oriented center (refer to **Figure 35**). Future opportunities are related to favorable natural environment conditions offering the potential for solar energy development; a diversified commercial and industrial economy that includes aerospace, automotive, agricultural, and biomedical sectors; and proximity to the international border with Mexico and transportation enhancements associated with the North American Free Trade Agreement (NAFTA).

### GILA COUNTY

Gila County is remote from the dynamic axis of the Arizona Sun Corridor. Nevertheless, access to the southwestern area of the county via US-60 will aid in enhancing its attractiveness for activity that relies on truck freight. Improved access to US-60 from Apache Junction and new connectivity with the planned SR 24 and North-South Corridor will enhance the attractiveness of markets in the County. Population growth in the Miami-Globe and Payson areas ultimately could draw warehousing and processing activity that will be able to more efficiently serve the wider regional needs of the county and White Mountain communities to the east. This means that the critical highways for Gila County, namely US-60, US-70, SR 87, SR 188, and SR 260, must be maintained at a high level to assure the safe operation of truck traffic and, consequently, security for other road users.

### 10.1.2 RAILROADS

Rail freight provides shippers with a cost-effective transportation solution, particularly shippers of heavy and bulky commodities (e.g., coals, oar, automobiles, etc.). Timely and efficient rail freight service can be a critical factor in attracting and retaining industry and commerce often central to regional economies. If all rail shipments were shifted to trucks (which, clearly is not practical), there would be significant changes in the cost of goods at market. Efficient and effective integration of rail and truck modes, therefore, is an important transportation concern. The five freight infrastructure centers noted above in the Trucking section (refer to **Figure 34**) would include railroad freight services. Four of the five lines support current operations within the CAG Region, serving three separate market areas: West Coast, Central US, East Coast and Mexico. All rail lines are critical to the transport of metallic ores (copper, silver, gold, and zinc) mined in the CAG Region, largely in northeastern Pinal County and southern Gila County. The rail lines also are critical for the distribution of coal to power plants in the region.

**Union Pacific Railroad** – As discussed previously, UPRR operates two routes through the CAG Region: Sunset Route and Phoenix Subdivision.

- **UPRR Sunset Route** – This route carries large amounts of freight between cities on the Pacific coast and major rail hubs in the Midwest and Texas, with links to the nation's Midwest and East coast. It also is directly connected to the Ferromex rail service in Mexico through the Nogales Land Port of Entry (LPOE).



The closest intermodal freight facility and classification yard on this UPRR route is located in Tucson at the former Pacific Fruit Express yards. This yard has a capacity of less than 100,000 lifts per year. A new classification facility is proposed to be constructed in the Red Rock area, which is approximately five miles north of the Pinal Airpark and the Pinal/Pima County Line. This location is within the potential development area identified in the Freight Transportation Framework Study in southern Pinal County as suitable for Manufacturing and Local Distribution Facilities (refer to **Figure 34**). The classification yard would facilitate breaking down and reclassifying trains carrying goods destined for the Phoenix metropolitan area via the Phoenix Subdivision and points east and west along the Sunset Route.



This new UPRR yard will supplement classification activities occurring at the Tucson yard, increase switching volumes (thereby enhancing the efficiency of the Sunset Route), and enhance connectivity to Mexico via the UPRR Nogales Subdivision. The Red Rock facility has been incorporated in a new Foreign Trade Zone (FTZ) No. 174, and the potential exists for this site to evolve into an inland port attracting adjacent manufacturing and distribution activities that desire multimodal and intermodal transportation options. Construction of the Red Rock facility would result in more efficient rail freight movements on the mainline and its subdivisions, as well as ancillary economic development in the Arizona Sun Corridor. Additional complementary facilities adjacent to the switching yard could accommodate multimodal shipments and transloading functions.

- **UPRR Phoenix Subdivision** – Major shipments along the UPRR Sunset Route and Phoenix Subdivisions include intermodal (truck trailer or container on train car) transport, automobiles, cement, coal, coke, chemicals, kerosene, fertilizer, lumber products and building materials, copper products, general merchandise, and military vehicles.

**Copper Basin Railway** - The CBRY is a “common carrier” rail line hauling various types of loads, including: copper concentrates, copper ore, finished and unfinished copper products, sulfuric acid, lumber, Gatorade, plastics, and military equipment. However, primary operations are focused on hauling copper ore from ASARCO’s Ray Mine to the Hayden Smelter.

**San Manuel Arizona Railroad Company** – According to a January, 2014 report on mining operations, the majority of copper concentrate produced at the Pinto Valley Mine is trucked to a SMARRCO train load-out or trans-shipment facility in San Manuel. Railcars are loaded and hauled to a 250-car switching and storage yard in Hayden. Shipments of ore products move from Hayden to the UPRR at Magma Junction via the Copper Canyon Railway line for transport via Ferromex (Mexico’s largest railroad operator) to Ciudad de Guaymas, Sonora, Mexico.



**Arizona Eastern Railway (AZER)** – This rail line primarily carries commodities such as copper products, chemicals, and agricultural and forest products. The railroad operates a transload facility in Globe for lumber, building materials, and other consumer commodities. A small switching yard is located in Miami. The railroad’s yard and transload facility in Globe handles lumber, building materials and other consumer commodities.

## 10.1.3 AIR CARGO

There are no air cargo services or facilities in the CAG Region. However, there are numerous airports and airstrips that potentially could accommodate small air freight service operations in the future, as demand may stimulate (refer to **Figure 34**). Nine, in particular, are publically owned and fully open to the public. Currently, regular air cargo service can only be obtained through ground shipment to major regional airports in the Phoenix and Tucson metropolitan areas.



The Pinal County Airport Economic Development Department is responsible for two airports: Pinal Airpark (originally Marana Army Air Field) and San Manuel Airport. The Department is actively pursuing studies to determine how best to enhance or upgrade facilities of Pinal Airpark, a GA facility located just north of the Pinal/Pima County Line and west of I-10. The predominant use of this airport today is an operation maintained by Marana Aerospace Solutions (MAS), which took over the Evergreen Maintenance Center. MAS is an international corporation engaged in the maintenance, repair, and overhaul (MRO) of commercial aircraft. Although this airport has the capacity to accommodate commercial air cargo services, the location

is too remote for any potential large-scale users at this time. In addition, significant improvements are necessary to bring the airport into compliance with FAA regulations and guidelines.

The San Manuel Airport is a small GA facility located in the southeastern corner of the CAG Region. The Master Plan calls for the accommodation of commercial general aviation services, which could include air cargo. However, the emphasis is more directly associated with MRO activities, aircraft sales and air charter services. The Master Plan forecast of aviation demand fails to mention air cargo or air freight as a potential growth area of the airport. Like Pinal Airpark, this airport is located in a remote location, and unlikely to attract or sustain air cargo services.

There is a proposal to continue planning for a new regional passenger-cargo airport south of Coolidge. Pinal County’s central location in the Arizona Sun Corridor, development of a new North-South Transportation Corridor connecting I-10 to US-60 near Apache Junction, and the potential for a high-speed passenger rail connection between Phoenix and Tucson may increase the potential for developing this airport in the future. Originally, this airport was conceived as a large regional airport for hub operations, like Denver’s, that would replace the two major airports in Phoenix and Tucson. The more recent, scaled-down version recognizes the need for a regional facility to serve a large population base projected to be in the millions. Should such growth occur, the likelihood of commercial air cargo services developing would be substantial.

## 10.2 ENERGY AND POWER ELEMENTS

### 10.2.1 PIPELINES

There are numerous pipelines in Pinal County associated with active distribution of natural gas for residential and commercial use. The vast majority of the main distribution pipeline facilities are operated by El Paso Natural Gas Company, which is owned by El Paso Pipeline Partners, L.P., an organization controlled by Kinder/Morgan Energy Partners, L.P. (KMP). El Paso Natural Gas pipelines extend in all directions, transferring natural gas through Pinal County between Pima and Maricopa counties and serving the county's many communities. One line terminates in Superior and two others extend east to serve the communities of Winkelman, Dudleyville, and Mammoth. Transwestern Pipeline Company, LLC, operates approximately 15 miles of natural gas pipelines primarily in the area from the UPRR line east of SR 87 and south of Coolidge west to northwestern Casa Grande.



Direct consumer gas service is provided by Southwest Gas Corporation (SWG). SWG consumer service covers most of Pinal County excluding only two small areas in the southeastern portion of the county and a linear area between the San Tan Valley and Queen Creek in Maricopa County. Areas not served by natural gas distribution lines must rely on propane gas, which is delivered by trucks.

A hazardous liquid pipeline carrying a non-highly volatile liquid (HVL) product is operated by Santa Fe Pacific Pipelines, Inc. (SFPP L.P. or SFPP), a subsidiary of KMP. This pipeline is generally coincident with the UPRR's Sunset Route alignment from Marana in Pima County through Casa Grande and Maricopa, where it parts from the rail line and heads north into Maricopa County. This same company controls two other pipelines coincident with the two UPRR rail lines in Pinal County, but these pipelines have been abandoned.

There is only one active pipeline in Gila County. It is operated by El Paso Natural Gas. It extends from the Gila/Graham County Line north through Globe to Miami. Direct consumer service to the Miami-Globe urban area and Hayden-Winkelman communities is provided by SWG. Propane is trucked in to other communities.

### 10.2.2 ELECTRICAL TRANSMISSION

Similar to commodities transported via pipelines, electricity is a commodity transmitted by overhead electric (OHE) powerlines. Three separate entities provide electrical service to the regional power grid for communities of the CAG Region: Salt River Project (SRP); Arizona Public Service (APS); UNS Energy Corporation through its subsidiary Unisource Energy Services (UES). Locally, consumer electric service is provided by the following entities:



- Trico Electric Cooperative (Portions of southern Pinal County);
- Graham County Electric Cooperative (Fort Apache Indian Community);
- Ak-Chin Electric Utility Authority (Ak-Chin Indian Community);
- Bureau of Indian Affairs (Coolidge Area and Mammoth/Oracle Area);
- Salt River Project (Gila River Indian Community);
- San Carlos Irrigation Project (San Carlos Indian Community); and
- Santa Cruz Water and Power Electrical District #4 (Rural areas near Eloy).

There are few areas of the CAG Region lacking in electric service and these would be located in remote, even inaccessible, areas. The regional grid is formed of a complex system of generating stations, substations, and power corridors that provide electricity to users. Enhancement and expansion of the grid are subject to the demands of growth and development, company service and marketing objectives, and oversight of the Arizona Corporation Commission, which establishes policies and goals for the electric generation industry.

## 10.3 FUTURE REGIONAL FREIGHT OPPORTUNITIES AND CHALLENGES

The CAG Region, with its relationship to the Arizona Sun Corridor, will likely benefit from the expansion of various metropolitan-based industries common today in the Phoenix and Tucson metropolitan areas. Expansion opportunities can develop into extensive job generators, such as: high-tech aerospace, biomedical, microelectronics manufacturing; renewable energy (especially solar products); service industry opportunities; and logistics, distribution and warehousing. As the Arizona Sun Corridor becomes more reality than vision, regional boundaries are anticipated to blur, and the social and economic dynamics and supporting infrastructure of the Arizona Sun Corridor communities will further intertwine. To continue to foster economic growth and maintain a reliable freight transportation network, CAG and its jurisdictions must take these growth pressures into account.

### 10.3.1 NEW HIGH-CAPACITY CORRIDORS

#### INTERSTATE 11

The desirability of a new Interstate facility was delineated during ADOT's Building a Quality Arizona (bqAZ) Statewide Transportation Planning Framework Program. The proposed Interstate 11 (I-11) has been conceived as a transcontinental travel corridor linking Mexico (via I-19 out of Nogales) to Canada in the Pacific Northwest through Las Vegas, Nevada (**Figure 36**). I-11 is conceived as the ultimate response to the NAFTA, enacted in 1994 to remove most barriers to trade and investment among the United States, Mexico, and Canada. The national CANAMEX (Canada, America, Mexico) corridor deriving from NAFTA is envisioned as providing a major high-capacity, north-south trade route from Mexico to Canada. I-11, the roadway component of the CANAMEX corridor, is now being touted as a reliever to I-5 along the West Coast, a bypass around major metropolitan areas (e.g., Tucson, Phoenix, and Las Vegas), and, as such, could become that true transcontinental trade route envisioned in NAFTA. ADOT and the Nevada Department of Transportation (NDOT) are currently engaged in a bi-state corridor study to further develop this conceptual idea.

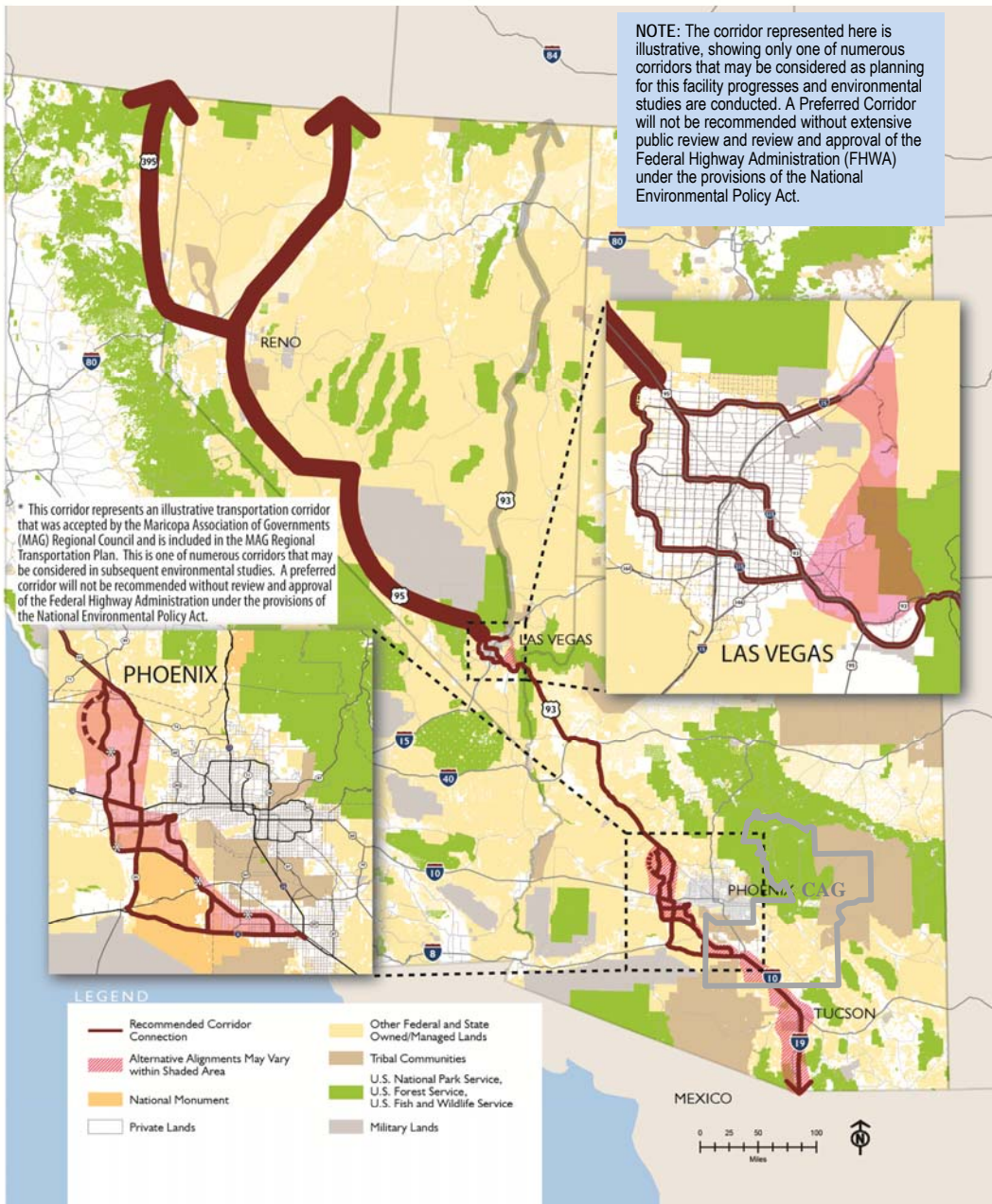




FIGURE 36 – CONCEPTUAL ALIGNMENT OF PROPOSED INTERSTATE 11 CORRIDOR

### Recommended Corridor Alternatives

The two-tiered evaluation process used for the I-11 and Intermountain West Corridor Study resulted in a series of corridor recommendations for the Congressionally Designated Corridor sections, as well as the Future Connectivity Areas. Recommended corridors to move forward for more detailed planning and environmental analysis were deemed to be both reasonable and feasible based on the evaluation results. Future studies will determine specific alignments.



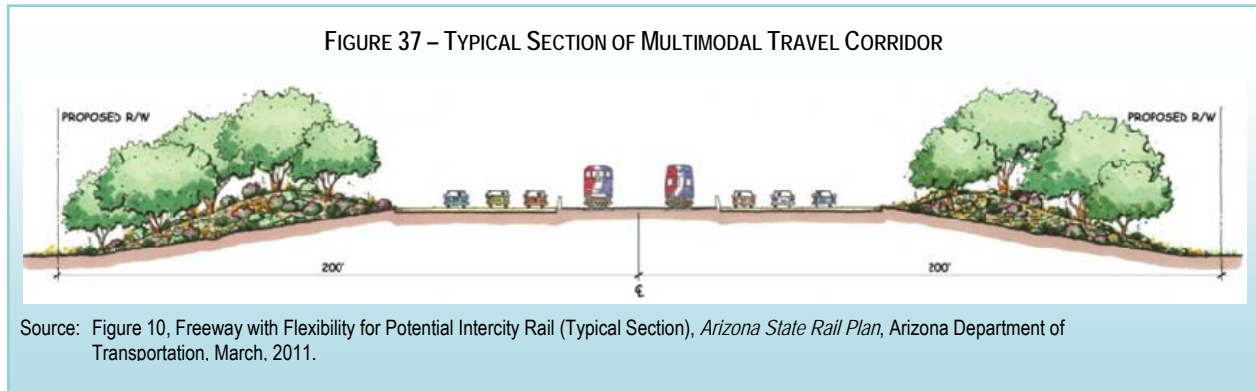
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I-11 and Intermountain West Corridor Study: Nevada Department of Transportation, Arizona Department of Transportation

Source: I-11study.com, retrieved October, 2014.



The “multimodal” corridor, or portions thereof, in Arizona is envisioned to include both a high-capacity freeway facility, major railroad connections, and potentially interstate utilities (e.g., gas and electric), as shown in **Figure 37**. Development of I-11 could provide future economic development opportunities (e.g., intermodal cargo transfers, transshipment and transload opportunities, value-added manufacturing) for many communities along its route. Locational advantages will exist along the corridor, particularly at junctions with east-west transcontinental, intermodal corridors like I-10 and I-8, and linkages with other major modes of commerce along the route.



Opportunities will exist for Pinal County, because the potential alignment of the I-11 corridor transects the southern portion of the county. Combined with the North-South Freeway (see below), the new freeway corridors will be closely associated with the communities of Eloy, Casa Grande, and Maricopa. Associated commerce and development could take the form of freight supply chain drivers, or agglomerations of commercial, industrial, and office development that seek to take advantage of the proximity to such high-value multimodal corridors. Linkage of the I-11 corridor with the planned North-South Corridor (see below) would strengthen the CAG Region’s role within the Arizona Sun Corridor. The Arizona Sun Corridor is expected to remain the transportation corridor of choice for all produce and products from Mexico destined to the western U.S. and western and central Canada. This growth corridor is also expected to continue to be the principal rail and trucking bridge for traffic coming to and from the Pacific seaports. Statewide and regional analyses show continued growth of traffic in all freight modes (rail, truck, and air) into the mid-term future, transporting a wide array of products. Additionally, trade deriving from increasing satisfaction of the goals and objectives of NAFTA will flow to the degree that the land ports of entry (LPOEs) at the U.S./Mexico border can facilitate commodity shipments.

## **NORTH-SOUTH FREEWAY**

In addition to I-11, several other high-capacity travel corridors are proposed that will increase personal and freight mobility in Central Arizona. As documented in the Pinal County *Regionally Significant Routes for Safety and Mobility Study* (RSRSM) and various other studies completed under the bqAZ Statewide Transportation Planning Framework Program, numerous parkways and new freeways are proposed for development in the CAG Region that will link it with the dynamic growth of the statewide economy.

One such freeway is the North-South Freeway, which has become an integral element of the transportation system expected to be needed to support growth in the Arizona Sun Corridor

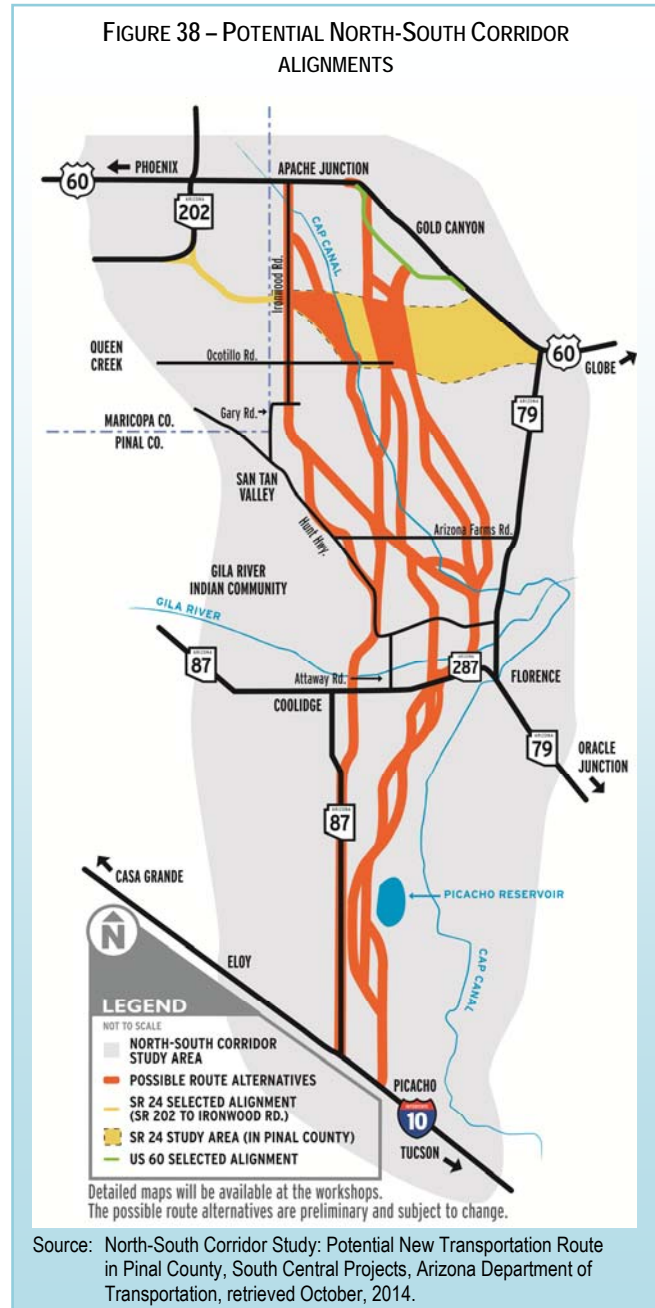
(Figure 38). This facility will provide relief for I-10 through Central Arizona and, specifically, Pinal County. The general location of the alignment at this time roughly parallels the existing UPRR Phoenix Subdivision freight railroad line, but alternative alignments have been identified. An Alternatives Analysis (AA)/Environmental Impact Statement (EIS) is being prepared for this planned freeway corridor. Completion of required studies and obtaining the FHWA Record of Decision permitting the project to move forward is not expected before Fall 2015.

The recently updated *Pinal County Comprehensive Plan* calls for industrial and commercial development in conjunction with proposed major roadway and rail access associated with this corridor. Large warehousing and manufacturing complexes that would not be compatible with residential areas, as well as possible long-range development of a regional airport in central Pinal County, are specifically considered as opportunities within the corridor. Additionally, the AZER has explored a tourist railroad opportunity that would support the region's mining operations in Gila and Pinal counties. A potential linkage to a rail freight line in the North-South Corridor is seen as an opportunity to establish this new enterprise.

### 10.3.2 IMPROVED AIRPORT SERVICES

Air freight services will need to be fostered as the CAG Region grows, particularly in Pinal County, which is in the central portion of the Arizona Sun Corridor. Additionally, efficient and effective air freight services would provide Gila County with important access advantages for developing high-value-added electronic and biomedical product lines. Rapid and dependable service is demanded by technology firms that have high-value added products capable of supporting the higher costs of air freight access to markets. Attracting these types of firms into both Gila and Pinal counties will require improvements to the airport infrastructure to provide greater accessibility to air freight services.

The 2008 *Arizona State Airports System Plan* includes a proposal for a new Maricopa Airport. The new airport would be a General Aviation (GA) facility. This plan indicates it could become a "Reliever" for Phoenix Sky Harbor International Airport in Maricopa County. Should the airport be



constructed, it offers the potential, along with other municipal GA airports in Casa Grande, Coolidge, Eloy, Payson, and Superior of ultimately being able to support limited air freight service.

### 10.3.3 INLAND PORTS AND LOGISTICS HUBS

A recent study prepared for JPAC identified transportation logistics and associated manufacturing as a key economic engine that could drive growth and development of the Arizona Sun Corridor over the next 40 years. The billions of dollars of goods passing through the CAG Region will need to be unloaded or uploaded onto rail, repackaged for trucking, or reprocessed. Companies in each industrial sector will be able to tap this flow, which is expected to create jobs and prosperity for the region. The availability of intermodal centers closer to markets, such as the Mixing Centers noted earlier, can motivate international shippers to off-load goods at West Coast seaports and transfer goods by rail to Arizona for processing. These “inland ports” with warehousing, assembly, and distribution activities would benefit from sites support by large-scale transportation infrastructure improvements and innovative finance mechanisms.

### 10.3.4 MULTI-JURISDICTIONAL PLANNING

The *Freight Transportation Planning Framework Study* identified and framed initiatives to advance freight-related economic development in the Arizona Sun Corridor. Infrastructure improvements will be necessary to increase mobility and accessibility in support of freight movements and processing for national and international markets. Action items now must be formulated to develop the potential for these identified freight hubs to capture freight-based activities and ancillary economic development. Coordinated planning and programming at the state level will likely be key to effective and efficient development of feasible freight facilities and services that will benefit all parties of the JPAC effort.

### 10.3.5 FREIGHT TRANSPORTATION CONGESTION

Both population and employment in Arizona are projected to more than double by 2050 from 2005 levels. Growth will result in higher densities of people and commercial activity, which, in turn, will result in a greater number of vehicles operating in the state’s developed cities, towns, and communities. Expected growth and increased density ultimately will lead to increased travel demand relative to passenger and goods movement. A rise in freight movements is expected to occur to support the growth, as well as additional freight movements passing through Arizona to and from other growing regions, such as Mexico, California, and Texas. The dynamics of population and economic growth combined with interstate, even transcontinental, freight movements is expected to create unprecedented traffic congestion. Providing adequate infrastructure, fuel, and transportation services to support freight movements, therefore, must remain a priority for the CAG Region.

### 10.3.6 COMPETITION WITH OTHER NORTH AMERICAN REGIONS

As noted in *North America Next* document published by the Arizona State University (ASU), Southern California is a region with a massive economy sustained by a large export/import industry, advanced infrastructure, and tens of millions of residents. The region has three of the largest and busiest deep sea ports in the nation. Billions of dollars in freight arrive at these ports annually from around the world. In addition, California’s southern border with Mexico provides the state with another strong trade partner. Already, San Diego County, Imperial County, and Baja California are working closely to establish the CaliBaja Bi-National Mega Region intended to market the bi-national region internationally and take advantage of the provisions of NAFTA. However, this region is afflicted with extreme traffic congestion and few places to expand. Port facilities are



reaching their capacity, and shippers already have begun to look elsewhere to accommodate international deliveries and distribution.

To the east, Texas has become one of the main gateways for freight into the U.S., and the state has numerous, well developed industries ranging from agriculture to oil, energy and high-tech. The Port of Houston is one of the busiest in the world. Organizations, such as the Border Trade Advisory Committee and the Port Authority Advisory Committee, call upon the state's MPOs, operators of LPOEs, university officials, county officials, and transportation agency staff to share information and assist in advancing plans for improvement. Both public and quasi-public entities allow Texas to provide a coordinated infrastructure and environment for large industries.

The CAG Region is in competition with other North American regions. The competition will require innovative and challenging actions to structure incentives to attract growth and compete with other economic hubs. CAG can include in these actions support for modernizing LPOEs along the Arizona-Sonora border, enhancing infrastructure to assure ready access to national markets, and facilitating efforts to create inland ports.





**SECTION IV  
LONG-RANGE  
TRANSPORTATION  
PLAN**



## **11.0 BUILDOUT ROADWAY NETWORK AND ROADS OF REGIONAL SIGNIFICANCE**

Thus far, this RTP has focused on the transportation needs to support anticipated travel demand through Year 2040. Several previous planning studies that have been conducted for multiple jurisdictions in Gila and Pinal counties have addressed transportation infrastructure needs that support higher growth forecasts. This element of the RTP serves to acknowledge those studies and the long-range needs for preservation of right-of-way in the region. It provides a vision for longer-range (Buildout) transportation facility needs and establishes overall goals and guidance for maintaining and protecting required right-of-way for roadways that support regional travel throughout Gila and Pinal counties.

### **11.1 WHAT IS A ROAD OF REGIONAL SIGNIFICANCE?**

A Road of Regional Significance (RRS) is a highway or roadway that connects population centers, employment centers, and major highways to support safe and efficient travel. RRSs generally carry significant through traffic and are instrumental in creating an effective network for access to a regional highway or key transit facility. These roads serve region-oriented travel and are modeled as principal arterial facilities during the course of evaluating travel demand. Typical connectivity involves major activity centers (e.g., downtown areas and large commercial and industrial concentrations), major planned developments (e.g., master-planned communities); significant sports complexes or facilities (e.g., stadiums and fairgrounds), and transportation facilities and terminals.

Projects directed toward creating, improving, and maintaining RRSs are likely included in the Regional TIP and passed through the Federal Statewide TIP for approval and become available for potential funding. Section 1120 of the MAP-21 legislation provides budget authority within the framework of a discretionary program for funding "...critical high-cost surface transportation infrastructure projects that are difficult to complete with existing funding but would generate national and regional economic benefits, increase global competitiveness, reduce congestion, improve roadways vital to national energy security, improve the movement of freight and people, and improve transportation safety." States, Native American Indian Communities, transit agencies, and multijurisdictional groups, such as CAG, are eligible to apply for competitive grants within this funding program.

### **11.2 HISTORICAL PERSPECTIVE**

The evolution of the RRS can be traced, at least, back to the early 1990s when states were required to prepare detailed plans for completing national high-priority segments within corridors of national significance. This requirement, contained in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), was the initial action at the Federal level to establish an overall intermodal approach to highway and transit funding with collaborative planning requirements at the local level. ISTEA also granted additional powers to metropolitan planning organizations, which were struggling with increasing travel demand, congestion and air pollution. It also opened the door for Federal funding of major transit capital investment projects. ISTEA was followed by additional comprehensive Federal legislation in the form of the Transportation Equity Act for the 21st Century (TEA-21) in 1998; the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005; and, finally, what is in place today, the Moving Ahead for Progress in the 21st Century Act (MAP-21).



ISTEA identified 80 high priority corridors, most of which connected major cities, provided connections to the Interstate Highway System (IHS), and upgraded the importance of many state routes relative to the nationwide transportation network. This initial legislation also identified the first five high-speed rail corridors. TEA-21 pushed the envelope further by seeking to enhance the integration and connectivity of the transportation system, across and between modes, and encouraged projects that would enable improved global competitiveness. SAFETEA-LU introduced authorization for programs that included grants for state surface transportation projects of national and regional significance. Additionally, this act established a program to allocate funds to states for highway construction projects in corridors of national significance to promote economic growth and international or interregional trade (i.e., global competitiveness). It also broadened the definition of high priority corridors originally established in ISTEA to specifically include evacuation routes.

MAP-21, the most recent Federal transportation legislation, amended SAFETEA-LU to expand the eligibility for funding projects of national and regional significance by adding tribal governments, transit agencies, and multi-state and multijurisdictional groups of agencies (as noted above). The projects must meet criteria specified in the legislation and be classified as a project of national and regional significance by the Secretary of Transportation. Selection of projects must be supported by discussions of factors justifying each project's classification, which relate to achieving national and regional benefits; relieving congestion (or future congestion conditions supported by modeling); increasing the speed and reliability of travel and improving accessibility for people or freight; and improving transportation safety. An acceptable degree of local financing support of the project is also an important factor in the selection of projects.

## 11.3 WHICH CAG REGION FACILITIES ARE ROADS OF REGIONAL SIGNIFICANCE?

Past studies within the CAG Region have identified RRSs. One of the more comprehensive studies of this subject – the Pinal County *Regionally Significant Roads for Safety and Mobility Plan* (RSRSM) – was conducted in cooperation with federal, state and county agencies, as well as local, tribal, and private stakeholders. The key objective for creating this Plan was to identify RRSs and establish a basis for preserving rights of way in future travel corridors. The subsequent *I-8 and I-10 Hidden Valley Transportation Framework Study*, carried out by MAG and Pinal County, incorporated the identified Pinal County roads in regional modeling to better forecast future travel demand and travel patterns in Pinal County and between Pinal County and Maricopa County.

As reported in the *Gila County Small Area Transportation Study* (October, 2006), regionally significant roadways were first identified in regional planning efforts conducted for CAG in April, 2000. A regionally significant roadway is defined as being "...one that links population centers, employment centers, and major highways, or is necessary for the efficient vehicular flow between intercity attractions." The planning effort employed a comprehensive review and inventory of the county's roadway network that included 11 characteristics, ranging from pavement condition to terrain to sidewalks. The study identified and inventoried 30 roadways in Gila County that were considered to be significant to the mobility and accessibility between and among the county's various communities. This particular study did not identify RRSs providing connectivity with surrounding counties.

Other transportation studies have recognized RRSs during development of plans for Gila and Pinal counties and major communities in the two counties. All also recognize the need to establish formal interagency coordination to assure the improvement and maintenance of RRSs. In this manner,



necessary extensions to assure regional mobility and accessibility can be identified, programmed, and developed to enhance the competitiveness of the region and provide adequate guidance to preserve necessary rights of way as the region develops.

Roads of Regional Significance include all portions of the Interstate system in the CAG Region, as well as routes on the SHS. In addition, the network of RRS facilities incorporates major arterial roadways that serve one of the following functions:

- Connect two or more defined (i.e., commonly understood or officially recognized) “regions” or “areas” within a county;
- Facilitate travel between counties;
- Support a significant amount of through traffic for the purpose of achieving connectivity between major origins and destinations;
- Provide access to a regionally significant highway (e.g., Interstate or State Route) or public transportation facility or service (e.g., Central Arizona Regional Transit or future BRT or Commuter Rail stations).

Because the development characteristics and natural environmental conditions of Gila and Pinal counties are very different, the application of a single set of general criteria will be more productive for regional guidance than specific criteria that force numerous, possibly subjective decisions. An additional and key criterion to those cited above is the need to designate RRSs with the potential to result in national and regional benefits in terms of economic competitiveness, safety, mobility, and accessibility within the context of a multimodal transportation system integrated regionally and with the NHS.

## 11.4 CAG REGION BUILDOUT NETWORK

As discussed earlier, numerous planning efforts have been conducted in the past that address transportation needs to support a higher level of growth in the counties and communities of the CAG Region. The results of these planning efforts have been reviewed and recommendations compiled within the context of this RTP element to provide a vision for the Buildout network for the CAG Region. Many of these previous plans were focused on Gila and Pinal counties. Therefore, development of a Buildout network for the region necessitated a segmented approach.

In Pinal County, the transportation network identified in the aforementioned RSRSM was reviewed with respect to future networks identified in other local plans. The plans used in the construction of the Buildout network in Pinal County included:

- *City of Coolidge Comprehensive Transportation Feasibility Study*, City of Coolidge & ADOT (June 2012)
- *Apache Junction Comprehensive Transportation Study*, ADOT (May 2012)
- *City of Eloy General Plan Update*, City of Eloy (May 2011)
- *Pinal County Comprehensive Plan*, Pinal County (November 2009)
- *Regionally Significant Routes for Safety and Mobility*, Pinal County (September 2008)
- *City of Maricopa Regional Transportation Plan*, City of Maricopa (September 2008)
- *Coolidge-Florence Regional Transportation Plan*, City of Coolidge, Town of Florence & ADOT (February 2008)
- *City of Casa Grande Small Area Transportation Study*, City of Casa Grande (July 2007).

Development of the Buildout network focused on facilities that were classified in these studies as freeways, parkways, and arterials. In cases where these plans identified common facilities but functional classifications did not agree, the classification of the more recent plan took precedence.



In order to ensure network connectivity and the continuity of roadway functional classifications, minor adjustments were made to the functional classifications and termini of roadways at the fringes of the respective plans' study areas. Additionally, certain high-capacity routes still under study when these local plans were being developed, specifically the North-South Corridor, State Route 24, and I-11, were adjusted to reflect the most current alignments proposed.

In Gila County, roadways classified as arterials in the 2040 network (as there are no classified freeways or parkways in the County) served as the baseline ultimate Buildout network. The study team also consulted local plans, specifically the *Payson Transportation Study* and the *Gila County Small Area Transportation Study*, and added any additional routes identified as arterials in these plans.

Once the Buildout networks were developed for each county, the county networks were fused together to create a seamless Buildout network for the entire CAG Region. **Figure 39** displays the recommended network to serve the long-range needs of Gila and Pinal counties.

## 11.5 CAG REGION ROADS OF REGIONAL SIGNIFICANCE

The Buildout network consists of numerous freeways, parkways, and arterials. Many of these roadways provide access within the boundaries of a particular community, while others serve to address more regional travel needs and are, therefore, deemed Roads of Regional Significance within the CAG Region. **Table 27** provides a summary description of each RRS.

## 11.6 RECOMMENDED ROADWAY DESIGN GUIDELINES

**Table 28** provides recommended guidelines for the preservation of right-of-way and future design features for freeways, parkways, and arterials.



The map displays the CAG Buildout Network, highlighting various road types and key locations. The network includes:

- Interchanges/Crossings:**
  - Interchanges (Red dots)
  - Railroad Grade Separation (Yellow dots)
- CAG Buildout Network Facility Type:**
  - Freeway; Interstate (Thick black line)
  - Parkway (Blue line)
  - Arterial (Green line)
  - CAG Planning Area (Light yellow background)

Key locations and roads shown include:

- Counties:** Yavapai County, Coconino County, Navajo County, Maricopa County, Graham County, Pima County, and Cochise County.
- Roads:** SR-238, SR-387, SR-287, SR-79, SR-10, SR-8, SR-9, SR-19, SR-20, SR-21, SR-22, SR-23, SR-24, SR-25, SR-26, SR-27, SR-28, SR-29, SR-30, SR-31, SR-32, SR-33, SR-34, SR-35, SR-36, SR-37, SR-38, SR-39, SR-40, SR-41, SR-42, SR-43, SR-44, SR-45, SR-46, SR-47, SR-48, SR-49, SR-50, SR-51, SR-52, SR-53, SR-54, SR-55, SR-56, SR-57, SR-58, SR-59, SR-60, SR-61, SR-62, SR-63, SR-64, SR-65, SR-66, SR-67, SR-68, SR-69, SR-70, SR-71, SR-72, SR-73, SR-74, SR-75, SR-76, SR-77, SR-78, SR-79, SR-80, SR-81, SR-82, SR-83, SR-84, SR-85, SR-86, SR-87, SR-88, SR-89, SR-90, SR-91, SR-92, SR-93, SR-94, SR-95, SR-96, SR-97, SR-98, SR-99, SR-100.
- Interchanges:** I-17, I-19, I-20, I-21, I-22, I-23, I-24, I-25, I-26, I-27, I-28, I-29, I-30, I-31, I-32, I-33, I-34, I-35, I-36, I-37, I-38, I-39, I-40, I-41, I-42, I-43, I-44, I-45, I-46, I-47, I-48, I-49, I-50, I-51, I-52, I-53, I-54, I-55, I-56, I-57, I-58, I-59, I-60, I-61, I-62, I-63, I-64, I-65, I-66, I-67, I-68, I-69, I-70, I-71, I-72, I-73, I-74, I-75, I-76, I-77, I-78, I-79, I-80, I-81, I-82, I-83, I-84, I-85, I-86, I-87, I-88, I-89, I-90, I-91, I-92, I-93, I-94, I-95, I-96, I-97, I-98, I-99, I-100.





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TABLE 27  
ROADS OF REGIONAL SIGNIFICANCE IN THE CAG REGION

Roadway	From	To	Connections	Communities Served
Pinal County				
I-10	Maricopa County	Pima County	SR 347 (in Maricopa County), SR 587/Casa Blanca Road, SR 387/SR 187, McCartney Road, SR 287/Florence Boulevard, Jimmie Kerr Boulevard, I-8, Sunland Gin Road, Toltec Road, Sunshine Boulevard, SR 87, Phillips Road, Picacho Highway, Sasco Road, Pinal Air Park Road	Gila River Indian Community, Casa Grande, Arizona City, Toltec, Eloy, Picacho, Red Rock
I-8	Maricopa County	I-10	SR 84, Stanfield Road, Montgomery Road, Bianco Road, Thornton Road, Trekel Road, I-10	Casa Grande, Pinal County
I-11 (future)	Maricopa County	Pima County	Connections to be the subject of future studies	Maricopa, Casa Grande, Pinal County
US-60 (and future US-60 alternate route)	Maricopa County	Gila County	Ironwood Road, Idaho Road, Tomahawk Road, Goldfield Road, Mountain View Road, Superstition Mountain Drive, Mountainbrook Drive, Kings Ranch Road, Peralta Road, SR 79, SR 177	Gold Canyon, Superior, Top-Of-The-World
SR 24	Maricopa County	US-60	Connections to be the subject of future studies	Queen Creek, Gold Canyon
North-South Corridor (future)	US-60	I-10	Connections to be the subject of future studies	Apache Junction, Gold Canyon, Florence, Eloy, Coolidge, Pinal County
SR 77	Tucson and Pima County	Winkelman, Gila County	SR 79, SR 177	Oracle, Mammoth, Dudleyville
SR 79	Florence Junction	SR 77 at Oracle Junction	US-60, Arizona Farms Road, Hunt Highway, Butte Avenue/Florence-Kelvin Highway, SR 287, SR 77	Florence, Pinal County
SR 84 (Gila Bend Highway)	I-8	Casa Grande	Stanfield Road, Thornton Road, SR 287/SR 387	Maricopa (via SR 347), Stanfield, Casa Grande



**Table 27 (continued)**  
**Roads of Regional Significance in the CAG Region**

Roadway	From	To	Connections	Communities Served
Pinal County (continued)				
SR 87	Maricopa County	I-10	SR 587 (at Maricopa County Line), Sacaton Road, SR 187, Blackwater School Road, SR 387, Signal Peak Road, Skousen Road, Van Ki Inn Road, Coolidge Avenue, Martin Road, Bartlett Road, Randolph Road, SR 287, Selma Highway, Battaglia Drive,	Gila River Indian Community, Coolidge, Randolph, Eloy
SR 88	Apache Junction	Maricopa County	SR 188 (In Gila County)	Rural dirt road extension through Maricopa County goes to Roosevelt Lake, Gila County, via Tortilla Flat
SR 177	Superior	Winkelman, Gila County	US-60, Florence-Kelvin Highway, SR 77	Ray, Kearny, and Hayden
SR 187	I-10	SR 87	SR 387, Casa Grande Road	Gila River Indian Community
SR 238				
SR 287	SR 387/SR 84	SR 87 (in North Coolidge)	SR 387/SR 84, Trekeil Road, Peart Road, I-10, Signal Peak Road, Eleven Mile Corner Road, SR 87, Randolph Road, Bartlett Road, Martin Road, Coolidge Avenue, SR 87, Van Ki Inn Road, Attaway Road	Casa Grande, Coolidge, Randolph
SR 347	I-10 (in Maricopa County)	SR 84	Casa Blanca Road, SR 238/Smith-Enke Road, Honeycutt Road, Maricopa-Casa Grande Highway, Peters & Nall Road, Papago Road, Louis Johnson Drive, Clayton Road, Meadowland Road	
SR 387	I-10	Casa Grande	I-10, Val Vista Road, McCartney Road, Cottonwood Lane, SR 287/SR 84	Gila River Indian Community, Casa Grande
SR 587	Maricopa County	I-10	SR 87 (at Maricopa County Line), Casa Blanca Road	Gila River Indian Community, Chandler and Sun Lakes in Maricopa County
Hunt Highway	Maricopa County	SR 79	Thompson Road, Mountain Vista Boulevard, Gary Road, Bella Vista Road, Johnson Ranch Boulevard, Arizona Farms Road	San Tan Valley, Pinal County
Maricopa-Casa Grande Highway	Cottonwood Lane (Casa Grande)	Maricopa (City of)	SR 347, Porter Road, White & Parker Road, Murphy Road, Anderson Road, SR 387 (via Cottonwood Lane)	



**Table 27 (continued)**  
**Roads of Regional Significance in the CAG Region**

Roadway	From	To	Connections	Communities Served
<b>Pinal County (continued)</b>				
Trekell Road	Ghost Ranch Road	Hauser Road		Casa Grande, Tohono-O'odham Indian Community
Thornton Road	Kortsen Road	Shedd Road		Casa Grande, Tohono-O'odham Indian Community
Arizona Farms Road	Hunt Highway	SR 79	Attaway Road	San Tan Valley, Pinal County
Attaway Road	Hunt Highway	Kenilworth Road		Coolidge, Pinal County
Signal Peak Road	SR 87	SR 287	Woodruff Road, McCartney Road, Randolph Road	Coolidge, Pinal County
<b>Gila County</b>				
US-60	Pinal County	Navajo County	SR 188, SR 77, US-70, SR 73 (at Navajo County Line)	Miami, Claypool, Central Heights-Midland City, Globe
US-70	Globe	Graham County	US-60, SR 77, SR 170	Cutter, Peridot, Gila County
SR 77	Pinal County at Winkelman	Navajo County	SR 177, US-70, US-60	Winkelman, Globe
SR 170	Cutter	Peridot	US-70	Cutter, Peridot, San Carlos Apache Indian Community
SR 177	Superior	Winkelman	US-60, SR 77	Hayden, Winkelman
SR 188	SR 87	Globe-Miami	SR 87, SR 88, SR 288	Tonto Basin, Roosevelt
SR 260 (and future alternate route)	Yavapai/Coconino counties	Coconino/Navajo counties	SR 87	Payson, Star Valley
SR 288	SR 188	Coconino County	SR 188	Young, Gila County



TABLE 28  
RECOMMENDED ROADWAY DESIGN GUIDELINES

DESIGN CRITERIA	Roadway Type			
	FREEWAY/EXPRESSWAY	PARKWAY/ARIZONA PARKWAY	PRINCIPAL/MAJOR ARTERIAL	MINOR ARTERIAL
<b>Roadway Function</b>				
<i>Road Purpose</i>				
Recommendation	Serve longer, high-speed regional trips, i.e., interstate and intercounty	Serve travel over significant distances and support through traffic movements between activity centers	Support movement of people and goods over substantial distances at a high level of service and through restrictions on access	Serve regional and subregional trips between cities, larger towns, and major traffic generators with limited access provided
<i>Planning Average Daily Traffic [Vehicles Per Day]</i>				
Recommendation	105,000 – 120,000	60,000 – 90,000	45,000 – 60,000	30,000
<b>Design Standards</b>				
<i>Design Speed</i>				
Recommendation	65 – 75 miles per hour	50 – 65 miles per hour	45 – 55 miles per hour	35 – 45 miles per hour
<i>Right-of-Way</i>				
Recommendation	300' – 400'	200' Additional ROW may be required at intersections for turn lanes and pedestrian refuge	130' - 150' Additional ROW may be required at intersections for turn lanes and pedestrian refuge	90' – 110'
<i>Median</i>				
Recommendation	Divided	Divided	Divided	Divided
<i>Number of Lanes</i>				
Recommendation	4 +	4 – 6 (Arizona Parkway)	4 – 6	2 – 4
<i>Left-Turn Lanes</i>				
Recommendation	Full Access Control	Substantial Access Control; Grade Separation, where possible; otherwise, left-turn lanes at all locations, where left turns are permitted; U-turns permitted at median openings, if warranted	At all locations, where permitted	At all locations, where permitted
<i>Right-Turn Lanes</i>				
Recommendation	Full Access Control	Substantial Access Control; Grade Separation, where possible; otherwise, right-turn lanes at all locations, where right turns are permitted	At all locations, where permitted and warranted	At all locations, where permitted and warranted





**Table 28 (continued)**  
**Roads of Regional Significance in the CAG Region**

DESIGN CRITERIA	Roadway Type			
	FREEWAY/EXPRESSWAY	PARKWAY/ARIZONA PARKWAY	PRINCIPAL/MAJOR ARTERIAL	MINOR ARTERIAL
<i>Cross-Section/Lane Width [Symmetrical Measures in Feet: Shoulder-Sidewalk-Buffer / Bicycle Lane / Travel Lane(s) / Median]</i>				
Recommendation	10/12/12/12 with 15 - 17 Median	Arizona Parkway: 6-Lane (Urban): 1/6/7B/6G/12/12/14 with 37 Median 4-Lane (Rural): 14S/6G/12/12 with 39 Median	8S/6/4B/6.5/12/12/14 with 7 Median	6/4B/6.5/12/12 with 7 Median
<b>Access Management Guidelines</b>				
<i>Public Access</i>				
Recommendation	Urban Interchanges: 1 mile spacing; Suburban Interchanges: 2 – 3 mile spacing	½ minimum, 1 mile desirable	Limited access to adjacent land; Controlled by raised medians with At-Grade Intersections at ¼ - ½ mile spacing	⅛ – ¼ mile spacing with limited access to adjacent land
<i>Private Property Access</i>				
Recommendation	None	Restricted - Limited: 660' minimum, 1,200' desirable; RI-RO	Right-In/Right-Out (RI/RO) lanes; Full Access, where approved	Right-In/Right-Out (RI/RO) lanes; Full Access, where approved
<i>Traffic Signal Spacing</i>				
Recommendation	NA	Grade separation, where needed; otherwise, 1 mile spacing with ½ mile, where warranted and permitted	1 mile and ½ mile; fully coordinated & progressed, where warranted; Grade-separated interchanges at 1 mile locations, where warranted	½ mile; ¼ mile; fully coordinated & progressed, where warranted
<i>Typical Traffic Control</i>				
Recommendation	NA	Signalized Two-Way Stop with Indirect Left-Turns (Arizona Parkway)	Signalized Two-Way Stop; Roundabout Optional, depending on traffic analysis	Signalized Two-Way Stop; Roundabout Optional, depending on traffic analysis
<i>Parking</i>				
Recommendation	Prohibited	Prohibited	Prohibited	Prohibited
<b>Alternative Mode Accommodation</b>				
<i>Transit</i>				
Recommendation	Potential HOV Lane	Pull-Outs and Queue Jumper Lanes, where warranted	Pull-Outs and Queue Jumper Lanes, where warranted	Bus Pull-Outs, where warranted
<i>Bicycle Lanes</i>				
Recommendation	None	4'	4'	4'
<i>Sidewalks</i>				
Recommendation	None	6' [Arizona Parkway]	6' with 4' buffer to roadway	6' with 4' buffer to roadway



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## 12.0 FUNDING ANALYSIS

### 12.1 OVERVIEW

Awareness of funding constraints and limitations is a crucial matter associated with preparing, adopting, and implementing the CAG RTP. This chapter describes the major funding sources available to CAG and its members for implementing transportation improvement projects and other related actions presented in the RTP. Note that financing tools, such as bonds and other forms of borrowing, are regularly used to advance construction projects. A common practice today is to issue these instruments to advance revenues from future years that are available through various Federal funding programs. But, financing with future dollars bears a cost penalty in interest payments and borrowing fees. Therefore, detailed discussion of financing tools and associated costs are not included in the following discussion of funding sources and opportunities, because financing tools are not sources of revenue, *per se*. Notwithstanding this fact, the final section of this report summarizes several financing tools developed by and available through the USDOT for advancing projects and other improvement actions.

In addition to revenues flowing from Federally-funded surface transportation programs, the State's Highway User Revenue Fund (HURF) supports roadway improvement projects. About two-thirds of the revenue supporting the HURF is derived from fuel taxes, and virtually all the money is allocated by grant formulas prescribed in state law. HURF is used primarily for highway maintenance and secondarily for capital improvement projects. HURF revenue cannot be applied to projects outside of roadway right-of-way or improvements in transit services or facilities. CAG's members received more than \$19 million from the HURF in the last fiscal year (FY 2014).

### 12.2 TRANSPORTATION FUNDING

Funding for transportation system and infrastructure improvements is derived from numerous federal, state, and local sources. The Overview of Funding Sources prepared for the RTP describes major funding sources available to CAG and its members for implementing the various improvements highlighted in the RTP. The report focuses on four aspects of the transportation financing question:

- Funding of transportation improvement projects through established federal, state, and local mechanisms, such as the State Highway User Revenue Fund (HURF);
- Local transportation funding options, including those that are not currently enacted by all local communities of the CAG Region, such as Development Impact Fees (DIF);
- Local transportation funding options not currently authorized beyond the state level, such as a local (city or county) sales tax on fuel sales; and
- Innovative Financing Options, including Federal Credit Assistance Tools.

#### 12.2.1 FEDERAL FUNDS

Federal laws regarding transportation investments changed in July, 2012, with passage of the MAP-21 (P.L. 112-141). MAP-21 restructured the core highway programs and consolidated transit formula grants. A major policy shift instituted through MAP-21 is the inclusion of performance-based evaluation of investments in surface transportation improvement projects. That is to say, MAP-21 required the USDOT to create key, measurable outcomes for determining the effectiveness of funding expenditures derived from Federal transportation programs. The objective was to ensure



that taxpayers received the most for their money through attainment of measureable results based on an assessment of seven performance measures, some of which include reducing fatalities and serious injuries, assessing bridge condition, improvement of pavement conditions, and reducing congestion. States were given the responsibility of setting their own targets relative to performance measures established by MAP-21, to be addressed in a progress report to USDOT, including:

- (1) the condition and performance of the National Highway System (NHS), which includes roadway important to the nation's economy, defense, and mobility;
- (2) the effectiveness of investment strategies to support the state *Asset Management Plan* for the NHS;
- (3) progress toward achieving identified performance targets (e.g., reducing travel delays, meeting bridge safety standards); and
- (4) how the state is reducing congestion at freight bottlenecks.

MAP-21 extended most of SAFETEA-LU, the previous funding authorization bill, for Fiscal Years (FY) 2013 and 2014. MAP-21 essentially retained SAFETEA-LU funding levels, yet it contained none of the traditional "earmarks" and eliminated most discretionary programs. Funding allocations through MAP-21 were based on 2010 Census data. A "10-month patch" was passed July, 2014, to extend funding of the National Highway Trust Fund through May, 2015.

CAG and its members receive federal funding through FHWA programs supported by the Highway Trust Fund. Funds are made available to member jurisdictions for transportation system improvement projects identified in Transportation Improvement Programs (TIPs). Federal Surface Transportation Program (STP) funds flowing to CAG have been approximately \$1.75 million annually. For the most part, the funds must be used on federally-designated roads. An exception is that a portion of the STP funds can be exchanged for implementing public transit projects.

Federal fund forecasts usually are based on six-year duration transportation authorization bills (e.g., SAFETEA-LU). No radical changes in federal fuel taxes are anticipated; therefore, trend line forecasts seem reasonably reliable for the foreseeable future in determining funding levels.

## 12.2.2 STATE HIGHWAY USER REVENUE FUND

The State of Arizona HURF, which is managed by ADOT, consists of state-collected fuel taxes and other highway user fees and taxes, such as fees for operator's licenses and vehicle registration, and taxes assessed on commercial truckers. The Arizona constitution restricts use of HURF revenue to only supporting roadway improvement projects. HURF revenue cannot be distributed for transit services or facilities or projects outside of roadway right-of-way. Although there is an array of federal, state, and local revenue sources, the most prevalent by far is Arizona's HURF.

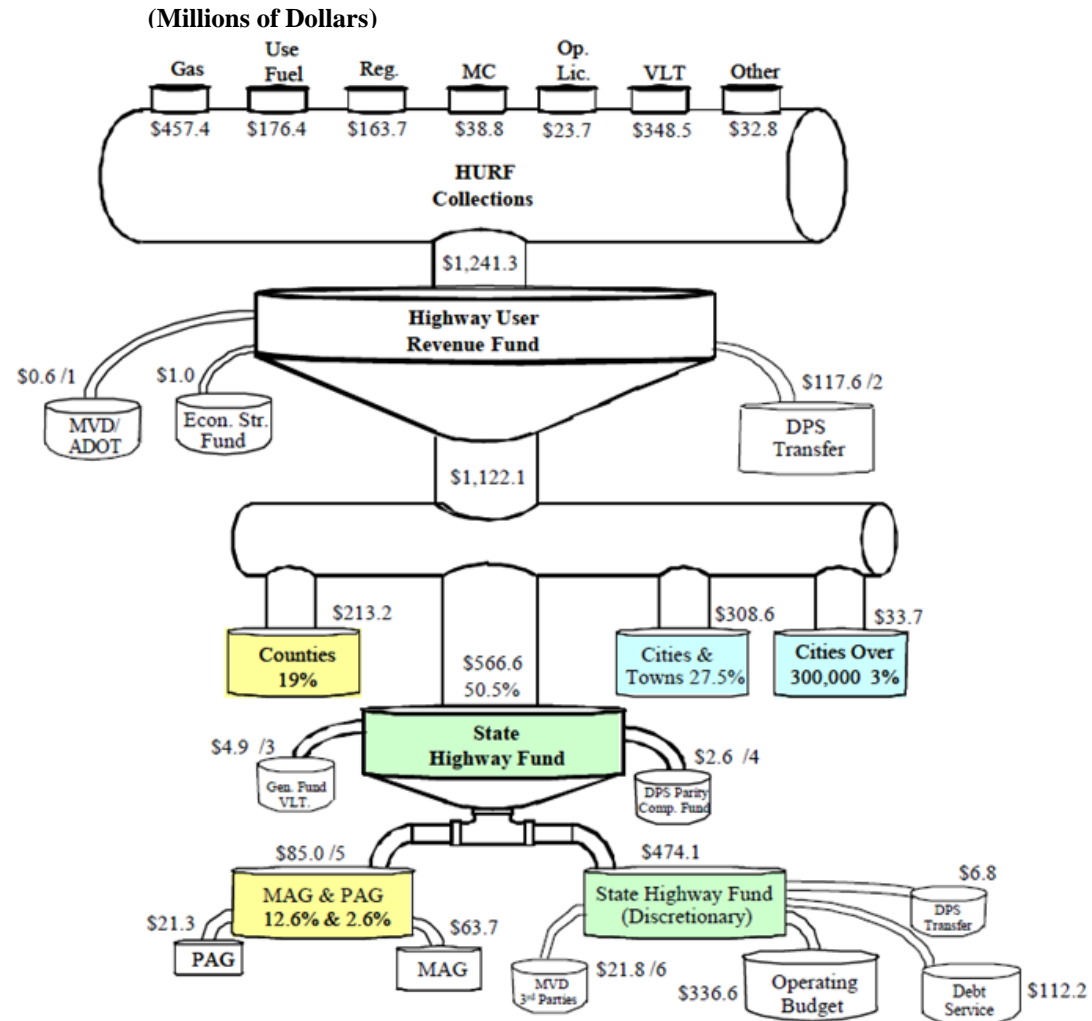
### HURF DISTRIBUTIONS FOR FISCAL YEAR 2014

The HURF "tank chart" shown in **Figure 40** illustrates how revenues were accumulated and distributed statewide in FY 2014. Counties received 19 percent of HURF, and cities received 30.5 percent. The State Highway Fund receives 50.5 percent of HURF, some of which is sub-allocated to other accounts. ADOT's net discretionary fund for state highways is about 33 percent of overall HURF revenues, and a portion of this amount is allocated to the Motor Vehicle Division (MVD).





FIGURE 40 – FY 2014 HURF ACTUAL REVENUE DISTRIBUTION FLOW



## NOTES:

/1. Appropriation of \$671,500 to MVD for the vehicle registration enforcement and 3<sup>rd</sup> party programs. There was also a separate appropriation of \$4,500 to the Automation Projects Fund that was not part of this distribution.

/2. The \$119.3 million appropriation to DPS in FY 2014 has been netted of a \$1.7 million reversion from DPS to HURF for unused FY 2012 appropriation.

/3. Laws 2011, 1<sup>st</sup> Regular Session, Chapter 28 (SB 1616) transfers from the state highway fund share of VLT generated the difference in the two-year and five-year VLT to the state general fund which totaled \$1.2 million. Laws 2010, 7<sup>th</sup> Special Session, Chapter 12 (HB 2012) an amount equal to 90 percent of the fees collected under 28-4802 (A) and 60 percent of the fees collected under 28-4802 (B) shall be transferred from the state highway fund share of VLT to the state general fund which totaled \$3.7 million. The \$4.9 million was not deposited into HURF before the transfer.

/4. Per Laws 2005, Chapter 306 (SB 1119), 1.51 percent of the state highway fund share of HURF VLT is distributed to the DPS Parity Compensation Fund.

/5. The 12.6% (statutory) and 2.6% (non-statutory) allocations from the State Highway Fund share of HURF distributions.

/6. With the elimination of the VLT distribution to the state highway fund, a distribution is made from the state highway fund to MVD Third Parties for the collection of VLT.

Source: State Fiscal Year (SFY) 2014 HURF Actual Revenue Distribution Flow Diagram at Financial Management Services (FMS), Transportation Funding, Highway User Fund (HURF), Office of Financial Planning Highway User Revenue Fund, Arizona Department of Transportation, retrieved from [https://www.azdot.gov/docs/default-source/businesslibraries/hurftankchart\\_14.pdf?sfvrsn=4](https://www.azdot.gov/docs/default-source/businesslibraries/hurftankchart_14.pdf?sfvrsn=4), November 3, 2014.



HURF funds are allocated to counties, cities, towns, and the metropolitan areas of Phoenix and Tucson from this pot of funds. Allocations to cities and towns are based on a “fuel factor” and “population factors,” as defined below:

- **Fuel Factor** – The gallons of fuel sold in the county within which the city or town lies as a percent of statewide gallons of fuel sold;
- **Population Factor 1** – The population of the city or town as a percent of statewide incorporated population; and
- **Population Factor 2** – The population of the city or town as a percent of its county’s incorporated population.

For the various cities and towns in the state and CAG Region, the statutory formulas for revenues to individual jurisdictions are:

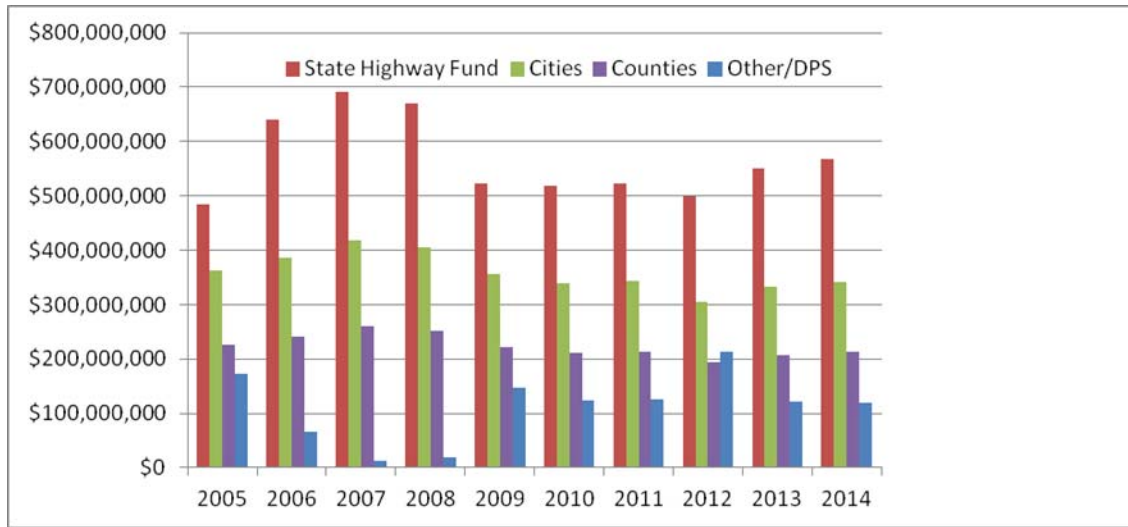
50% of Cities & Towns revenues	X	Population Factor 1 (State Total)
<i>Plus</i> 50% of Cities & Towns revenues	X	Fuel Factor x Population Factor 2 (Incorporated Areas in CAG Region)

The key point here is that HURF distribution is based on relative population, not actual population. As the population of cities and towns grows, the share of HURF revenues depends on how quickly each grows relative to the state’s total population (**Population Factor 1**) and, with respect to the CAG Region, growth relative to the populations in incorporated areas of Gila and Pinal counties (**Population Factor 2**). Relative growth in incorporated population depends upon a number of factors, not the least of which is how aggressively and successfully jurisdictions annex new areas, adding to their population. The values in **Figure 40** above show a total of \$555.5 million was distributed in FY 2014 to counties, cities and towns, and cities with a population greater than 300,000. In FY 2014, the CAG Region received more than \$19 million from the HURF. Gila and Pinal counties received \$3.28 and \$16.53 million, respectively. Cities in Pinal County received a total of \$12.17 million, and cities in Gila County received \$2.5 million.

**Figure 41** shows the FY 2005 to FY 2014 distributions to the State Highway Fund, cities, and counties, and other accounts, such as the Department of Public Service (DPS) transfer. All fund distributions, except those to DPS, peaked in FY 2007 prior to a significant decline due to the global recession. The State Highway Fund experienced a decline of 28 percent by FY 2012. As a result, funding for cities declined by 25 percent, and HURF funds to counties declined approximately 18 percent. An exception to the decline for these three categories was the transfers to DPS, first declining severely from FY 2005 through FY 2008 then returning to seesaw fluctuations from FY 2009 through FY 2014 at levels more comparable to FY 2005. To aid in recovering funding levels for DPS, the Legislature moved funding for designated beneficiaries of HURF funding, namely cities and counties, to the functions of safety and security ascribed to DPS. Although showing a pattern of recovery since FY 2012, HURF remains well short of the peak achieved in FY 2007.



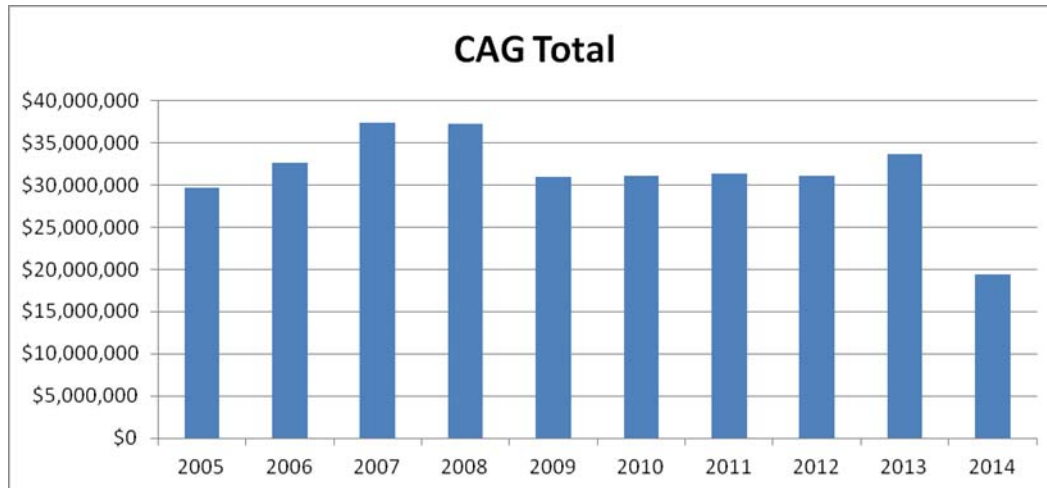
FIGURE 41 – HURF REVENUES AND STATEWIDE DISTRIBUTION TREND (FY 2005-2014)



Source: Highway User Revenue Fund, Arizona Department of Transportation, Financial Management Services (FMS), Office of Financial Planning.

Economic factors associated with the recent recession and controversial redistributions by the Legislature resulted in CAG members experiencing noticeable declines in HURF funding for transportation projects from FY 2008 through FY 2012. **Figure 42** shows the total HURF distribution to all current CAG members for FY 2005 through FY 2014. In all instances shown, revenue has declined since FY 2007. The marked decline of about 30% in CAG receipts between FY 2013 and FY 2014 is due partly to the reorganization of CAG in response to creation of the Sun Corridor Metropolitan Planning Organization (SCMPO), which for transportation planning purposes includes Casa Grande, Eloy, Coolidge, and parts of unincorporated Pinal County, and the City of Maricopa and the Town of Florence becoming members of the Maricopa Association of Governments (MAG) for transportation planning purposes. As a result of these movements by former members of CAG, there is now a smaller membership base upon which the HURF funding allocation for CAG is based. It is important to note that while these members have joined SCMPO and MAG for transportation planning purposes only, each community is still an active member of CAG, but does not benefit from CAG transportation planning, improvement or funding initiatives.

FIGURE 42 – TOTAL HURF DISTRIBUTION TREND FOR CAG MEMBERS (FY 2005-2014)



Note: Several jurisdictions recently became a part of the Sun Corridor Metropolitan Planning Organization (SCMPO) and the Maricopa Association of Governments (MAG) for transportation planning purposes. The chart accounts only for revenue for current member jurisdictions in the CAG Region.

Source: Highway User Revenue Fund, Arizona Department of Transportation, Financial Management Services (FMS), Office of Financial Planning.

## HURF FORECASTS

ADOT's Financial Management Services (FMS) group uses an expert panel and a computer-based funding allocation model to help estimate future revenues for planning purposes. The latest forecast shows a 3.4 percent growth rate in HURF revenues at the 50 percent confidence level. The forecasts are in current year dollars, and when deflated and adjusted for changes in population (a proxy for system demand), the forecast is flat-to-negative. This forecast could become more optimistic with a marked uptick in the economy, if the Legislature increases fuel taxes or Vehicle License Tax (VLT), or both. However, because neither of these conditions currently is likely, it would be unreasonable to include them in any forecast.

## 12.2.3 LOCAL FUNDING MECHANISMS

Cities and counties are authorized by Arizona statute to enact local taxes and fees to fund community transportation systems. The most common sources of revenue are:

- Countywide half-cent sales taxes dedicated to transportation (also called a transportation excise tax);
- DIFs for roads and other purposes imposed by cities and counties in conjunction with active development; and,
- Sales taxes enacted by municipalities on construction contracting within their boundaries.

## LOCAL FUNDING MECHANISMS CURRENTLY EMPLOYED BY CAG MEMBERS

The following sections discuss key aspects of the local funding mechanisms in place today in CAG member communities.



## TRANSPORTATION EXCISE TAX

Both Gila and Pinal counties have a one-half-cent excise tax to support transportation improvement programs. The tax is expected to generate approximately \$3 million per year in Gila County over the next 30 years, as shown in **Table 29**.

TABLE 29  
PROJECTED EXCISE TAX REVENUE DISTRIBUTION TO UNINCORPORATED JURISDICTIONS OF GILA COUNTY

Period	Revenue
2011 – 2020	\$29,257,996
2012 – 2030	\$29,786,094
2013 - 2040	\$30,186,106

Source: *Gila County Transportation Excise Tax*, June 2014, Office of the Auditor General, Report #14-102, Table 1: Excise Tax Revenues and Expenditures, Calendar years 2009 through 2013. Estimated future tax revenue was based on population forecasts from the following: CAG Region Population and Employment Projections by MPA, dated August 15, 2014.

Historically, Gila County's transportation tax was wholly retained by the county. However, recent state legislation led to abandonment of this practice. The legislation (ARS § 28-6391) and Gila County Resolution N. 14-06-09 (Amended) now requires allocation of a portion of these taxes to cities within the county. Collected revenue is transferred directly to the State Treasurer. The State Treasurer distributes revenues to Gila County for use within unincorporated areas of the county and the incorporated cities and towns for use within established jurisdictions. Amounts distributed are based on the share of population of each jurisdiction (i.e., County, cities, towns) bears to the total county population. Each jurisdiction can expect a minimum of 0.85 percent of tax monies collected. After this minimum is distributed, remaining tax revenue is distributed according to the population of each jurisdiction relative to the total county population.

Pinal County was not required to modify the collection and distribution of transportation excise tax revenue. The county already had a structure to share tax revenue with municipalities within the county based on population (**Table 30**). Pinal County historically has generated approximately \$12 to \$16 million per year through this tax.

TABLE 30  
PROJECTED ½ CENT EXCISE TAX REVENUE DISTRIBUTION IN PINAL COUNTY

Jurisdiction or Municipality	2011-2020	2021-2030	2031-2040
Kearney	\$ 2,181,976	\$ 2,321,459	\$ 2,366,078
Mammoth	\$ 1,862,662	\$ 2,360,147	\$ 3,351,681
Superior	\$ 3,217,290	\$ 3,794,898	\$ 4,528,415
Pinal County **	\$ 64,719,388	\$ 74,520,740	\$ 88,660,496
<b>Total CAG in Pinal County</b>	<b>\$ 71,981,315</b>	<b>\$ 82,997,244</b>	<b>\$ 98,906,669</b>

\*\* Remainder of Pinal County remaining with CAG and participating in CAG transportation services and programming - Does not include recipient cities/towns.

Source: *Pinal County Transportation Excise Tax*, June 2014, Office of the Auditor General, Report #1105, Table 1: Excise Tax Recipients, Distributions, 2010 Population and Lane Miles Maintained, Calendar years 2009 through 2013. Estimated future tax revenue was based on the population forecasts from the following: CAG Region Population and Employment Projections by MPA dated August 15, 2014.

## DEVELOPMENT IMPACT FEES

In Pinal County, the county is the only current CAG transportation planning member that collects DIFs. In Gila County, DIFs are collected by the Town of Payson. The various uses to which collected DIF revenues are committed are summarized in **Table 31**.



TABLE 31  
CAG MEMBER DEVELOPMENT IMPACT FEES

Jurisdiction		Roads	Water	Sewer	Drainage	Parks	Library	Fire	Police	Public Safety	General Gov't	Community Svcs
Pinal County												
Pinal County	Non-Housing	■								■		
	Housing	■				■				■		
Gila County												
Payson	Non-Housing		■									
	Housing	■	■			■						

Source: Available online documentation at Web sites of jurisdictions listed.

Legislation authorizing DIFs underwent sweeping changes with passage of SB 1525 in 2011. SB 1525 extensively amended Section 9-463.05, Arizona Revised Statutes (ARS), relating to city and town development fees. By July 31, 2014, municipalities choosing to continue collections of DIFs must have rewritten their local ordinances, recalculated fees, and constrained expenditure plans to conform to the requirements of SB 1525. The legislation does not apply to counties. Payson updated their ordinance to conform to the new legislation; Pinal County is not covered by SB 1525 and need not undertake an update. Importantly, DIF revenues can be used only for capacity improvements that meet the needs of new development. They cannot be used for maintenance, transit, or resolving current deficiencies.

## CONSTRUCTION SALES TAX

The construction sales tax (CST) simply is an increment of municipal sales tax added to contracting activities in the jurisdictions within which the activity occurs. Revenues collected through this tax primarily are committed to public works projects, including roadway improvements, although there is no statutory requirement to do so. Several cities in Pinal County impose a CST; no municipalities in Gila County have adopted this tax. Counties are not authorized to impose a construction sales tax. Pinal County cities imposing this tax and the tax rates are shown in **Table 32**. Kearny is the only remaining within CAG as a transportation community that collects this revenue. If a municipality has both a CST and a DIF program, current laws require that full credit for the CST must be deducted from the development impact fee imposed. This greatly neutralizes the revenues realized from the impact fees.



TABLE 32  
CONSTRUCTION SALES TAX RATES

Municipality	Construction Sales Tax Rate
Kearny	4%

Source: State of Arizona, Department of Revenue.

## LOCAL TRANSPORTATION FUNDING OPTIONS NOT CURRENTLY AUTHORIZED

Research documented for recent major planning studies in Arizona reveals that other states enable local jurisdictions to utilize additional direct or indirect revenue sources for transportation. These sources are identified here with a brief summary of the key elements.

- **Local Option for Levying and Indexing Fuel Taxes** – Currently in Arizona, only the Federal government, state, and Native American Indian Communities are authorized to impose fuel taxes on the actual quantity of fuel sold. Some states authorize a local option, which allows local jurisdictions to levy and index fuel taxes on fuels sold. This option could include: (1) allowing each incorporated jurisdiction in a county to impose the tax or (2) enabling counties to levy and index the tax with distribution of revenues among the local jurisdictions.
- **Local Option for Levying a Sales Tax on Fuel Sales** – Currently, fuel sales in the State of Arizona are exempt from taxation at the local level. Statutes in other states permit local jurisdictions to include fuel sales in the structure of local sales tax collections. This tax would be levied against the price of the fuel sales rather than the quantity of fuel sold, which would automatically index the tax to inflation. Again, the sales tax on fuels could be an individual local option of each jurisdiction or a county tax with local distribution.
- **Local Option for Vehicle License Taxes and Registration Fees** – Some states have enabled local jurisdictions to levy VLT and/or registration fees. This option, not available to jurisdictions in Arizona, also could be levied at the county level with distribution to local jurisdictions.

Many transportation finance experts predict a switch in the future to greater reliance on road-use-based revenue sources in place of fuels-based sources. Among the possible schemes discussed are mileage-based fees, toll roads, and congestion pricing. The latter two methods of collecting revenue for roadway use already have been implemented in a number of larger communities outside Arizona. However, these approaches generally are not available to local jurisdictions in the state. Although not currently utilized anywhere in Arizona, toll roads and congestion pricing are under consideration by ADOT and the larger metropolitan areas. Jurisdictions are well advised to follow developments relative to these funding sources and to be prepared to utilize them should they become available.

## FUTURE LOCAL REVENUE SOURCES

Arizona recently streamlined its sales tax collection system, replacing one that was deemed overly complicated. As noted above, certain facets of the construction sales tax were modified during the 2013 legislative session. The enacted changes affect the collection of the CST, but kept in place the tax as it related to large developers. As a result, significant changes in the revenue stream from this taxing mechanism for cities and towns has generally been avoided. As mentioned earlier, the local DIF programs are in a state of flux, due to recently adopted legislation under SB 1525, which



changed the manner in which this fee is calculated.<sup>4</sup> Complications involving revenue streams from the tax sources identified in the previous section make forecasting of local revenues very problematic. There are other options available for funding transportation system improvements under current statutes, such as a county property tax for roads and the use of general funds. These options are rarely used, but may become more attractive should the current sources become further restricted.

## 12.2.4 INNOVATIVE FINANCING OPTIONS

USDOT defines innovative finance to include “...a combination of techniques and specially designed mechanisms to supplement traditional financing sources and methods.”<sup>5</sup> Notable techniques include:

- New or non-traditional sources of revenue designed to leverage other existing funding resources;
- New techniques addressing funds management; and
- New institutional arrangements.

State and local governments, faced with competing demands on scarce public resources, are challenged by inadequate funding sources to meet growing transportation needs. Therefore, innovative financing must be considered as a source of funding for transportation improvement projects. New sources and mechanisms for generating revenue need to be implemented, or critical projects may face years of delay before funding is available. Nevertheless, innovative financing, in and of itself, is not a guaranteed solution for the problem of inadequate funding. Rather, innovative financing requires a close look at a group of tools that can increase the efficiency and flexibility of employing existing resources and managing the timing of their use.

The essence of innovative financing, therefore, is to find ways to leverage existing sources to be able to utilize projected revenues sooner. The FHWA has defined two program areas that could assist local entities and project sponsors in securing adequate financing for future projects.

## FEDERAL DEBT FINANCING TOOLS

Federal Debt Financing Tools allow state and local entities to borrow against future expected revenue, particularly Federal Aid to Highways (FAH) funds, to better manage and accelerate project delivery. The most common method that is employed is the securing of future revenue through the issuance of municipal bonds. Proceeds from the bond issuance yield the immediate influx of cash needed to implement a project or series of projects. The state or local agency retires bond

4 According to legislative analysts, the construction sales tax essentially is a Transaction Privilege Tax (TPT) imposed on contractors at all levels (i.e., subdivision development to handy man) doing business in a particular jurisdiction, which includes the State as a jurisdiction. The tax is collected within the jurisdiction wherein materials are used, i.e., incorporated into a major development project or a home or business establishment. The State collects this tax for many municipalities and counties, but, as identified in the table above, many local jurisdictions also collect the tax. The Governor's Transaction Privilege Tax Simplification Task Force adopted the following recommendation: The current tax structure for contracting activity is not desirable for many reasons, both practical and from a policy perspective; therefore, state and local governments should act aggressively to transition from the current practice to a tax on materials at the point of sale. The Arizona State Legislature adopted a compromise in House Bill 2111 that eliminated the collection of this tax for service contractors, i.e., those who perform maintenance, repair or replacement work on properties, such as plumbing and pool maintenance. These contractors now will be taxed at the point of sale. The bill also streamlined collection of the tax by instructing the Arizona Department of Revenue to create an online portal to provide a single location to get a TPT permit, file TPT returns, and make TPT payments for all jurisdictions in the state. The change adopted with the passage and signing of HB 2111 softens the potentially negative impacts first conceived by maintaining the TPT on major developers. This assures growing communities (e.g., City of Maricopa) will still receive tax funds based on labor and materials incorporated into projects within jurisdictional limits. Nevertheless, the level of State funding available through this source likely will be less for CAG municipalities in the future, although there will some offset in some communities as a result of increase in the point-of-sale tax.

5 Innovative Program Delivery: Innovation, Tools, Financing at <http://www.fhwa.dot.gov/ipd/index.htm>.





obligations by making principal and interest payments to the investors over time with the future stream of revenue coming from FHWA grant funding and tax receipts.

Although this tool imposes interest charges and other debt-related costs on the issuer, such costs must be weighed against costs associated with delaying projects, including inflation, lost travel time, freight delays, wasted fuel, and forgone or deferred economic development. Bringing a project to construction more quickly than would otherwise be possible, based on the current flow of funds, sometimes can offset the costs of delay. FHWA and USDOT have identified, can approve, and will administer three innovative Debt Financing Tools that can provide additional opportunities to issue debt supported by a future revenue stream.

- **Grant Anticipation Revenue Vehicles (GARVEEs)** – GARVEEs are debt-financing instruments (e.g., bond, note, certificate, mortgage, lease, or other debt financing technique) pledged on the basis of future Title 23 Federal-aid funding.
- **Private Activity Bonds (PABs)** – PABs permit private involvement in the benefits accruing to tax-exempt municipal bonds. PABs are issued by a public entity that serves as a conduit of funding on behalf of a private entity for highway and freight transfer projects. This tool allows the sponsor of a private project to benefit from the lower financing costs of tax-exempt municipal bonds.
- **Other Bonding and Debt Instruments** – USDOT and FHWA participate in several other types of bonding and debt instrument tools administered at the state and local level.

## FEDERAL CREDIT ASSISTANCE TOOLS

USDOT has developed a number of financing tools to enable project sponsors to access Federal credit assistance. The assistance takes one of two forms:

- **Loans** – project sponsors borrow Federal highway funds directly from a state DOT or the Federal government; and
- **Credit Enhancements** – a state DOT or the Federal government makes Federal funds available on a contingent (or standby) basis.

These loan and credit enhancement tools allow project sponsors to better manage the funding requirements of a project and accelerate project delivery. Federal or state DOT loans provide immediate necessary capital funding for a project, carry lower interest rates, and reduce investor risk. The loan mechanism can also serve to provide credit enhancement, as investor risk is lower. Credit enhancement helps reduce investor risks and, thereby, lowers interest rates to the borrower. USDOT identifies three programs that aid in moving transportation improvement projects forward at the local level:

- **Transportation Infrastructure Finance and Innovation Act (TIFIA)** – TIFIA permits USDOT to provide direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance.
- **State Infrastructure Banks (SIBs)** – SIBs are state-run revolving funds capitalized with Federal funds that can be used to support surface transportation projects through loans, credit enhancements, and other forms of non-grant assistance.
- **Section 129 Loans** – This financing tool, authorized through Section 129(a)(7) of Title 23, Highways, allows states to lend apportioned FAH funds to support projects that will generate a dedicated revenue stream, which can include toll and non-toll projects. [Note:



This is a variant of the revenue bond, which is supported by revenue generated by the project.]

## 12.3 REVENUE FORECAST – FY 2015-2040

As discussed previously, several of the CAG member agencies have recently joined SCMPO or MAG for transportation planning purposes. Revenues previously generated by these agencies are no longer allocated to the CAG region. Availability of funding for transportation improvements in these areas will be determined in conjunction with RTP planning efforts conducted by SCMPO or MAG. Therefore, for purposes of revenue forecasting associated with this CAG RTP, only those member agencies that remain for transportation planning purposes will be considered. **Figure 45** illustrates member agencies that have remained with CAG for transportation planning purposes.

Based on a review of current plans and programs, a forecast was prepared of the revenue stream from major sources for each of the CAG transportation planning members for three planning horizons. The forecasts assume current revenue sources continue or are reauthorized without major changes, and new revenue sources are not implemented. This approach helps establish the current direction of funding, and will aid in making recommendations about new and revised sources in a subsequent gap analysis.

**Table 33** shows the projected revenues for all sources except Federal funding programs. Federal funding levels are difficult to forecast, because suballocations from the state are not formulaic and grant funds are project-specific and sporadic at best. In addition, federal funds are used mainly for federally-designated routes, which may or may not be part of an expanded capital project identified in the CAG RTP. The total estimated state and local funds available for transportation system improvement is just over \$1 billion through 2040. Of this revenue, approximately \$750 million will be generated in Pinal County, with the other approximately \$250 million in Gila County. These funds would be used for system maintenance, labor, staffing, and new construction. Generally, most of HURF is used for maintenance, whereas transportation sales taxes and DIFs are used for capital projects. When analyzing the funding gap, all of the system demands must be considered, not merely new construction, because available funds will be spread over many needs. It should be noted that the majority of these forecasted revenues are derived from the unincorporated portion of Pinal County. Over time, portions of these revenues may be reallocated to the various cities within the county, as future annexations occur.



FIGURE 43 – CAG TRANSPORTATION PLANNING MEMBER ENTITIES

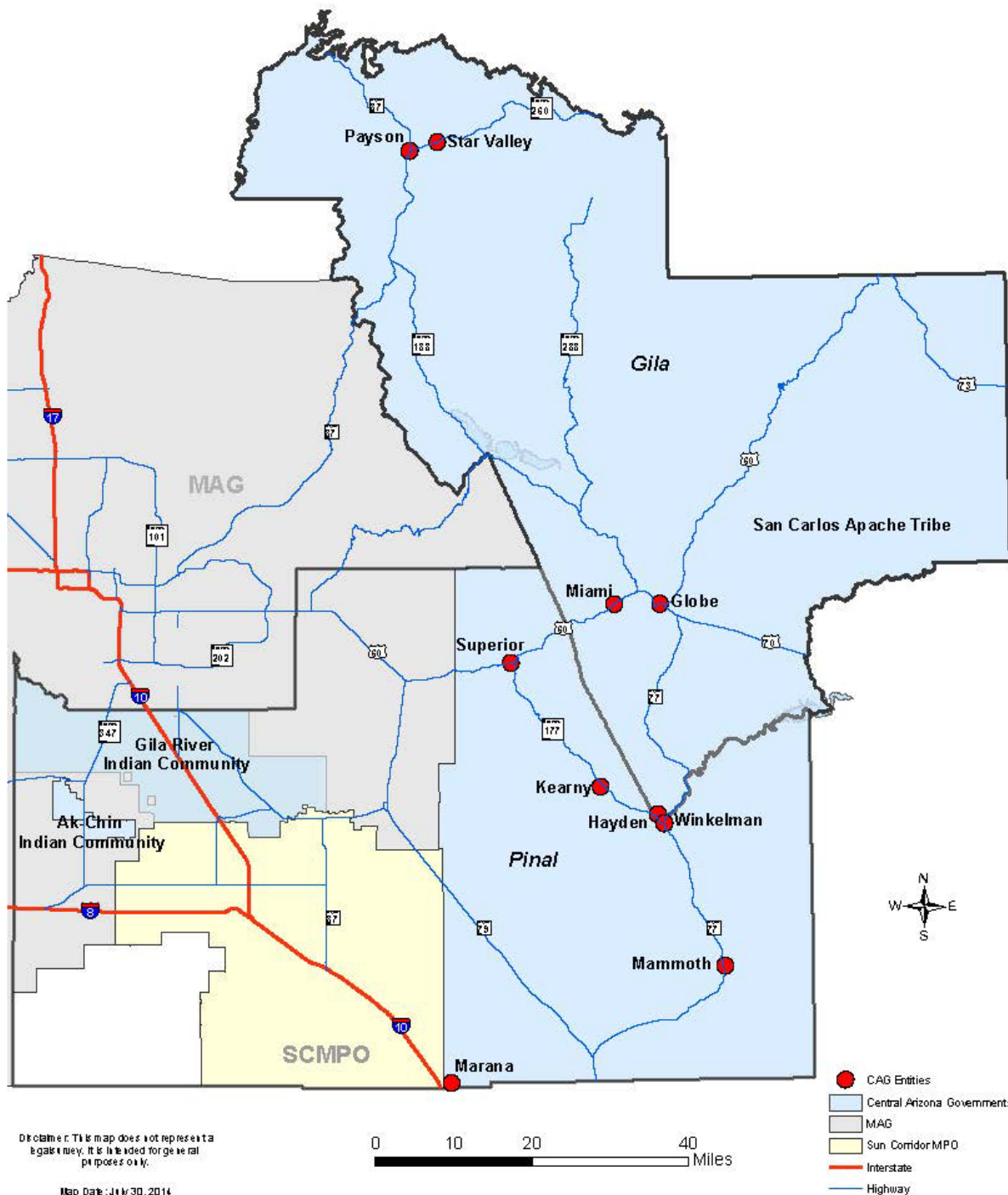


TABLE 33  
REVENUE FORECASTS THROUGH 2040

Geographic Area	FY 2015-2020	FY 2021-2030	FY 2031-2040	Total 2015-2040
<b>Pinal County</b>				
HURF	\$95,242,842	\$184,300,569	\$229,259,386	\$508,802,797
Transportation Sales Tax	\$39,736,126	\$74,520,740	\$88,660,496	\$202,917,362
Development Impact Fees	\$240,000	\$450,000	\$500,000	\$1,190,000
Other*	--	--	--	--
<b>Pinal Cities (CAG Transportation Members Only)</b>				
HURF	\$4,098,488	\$7,726,666	\$9,340,371	\$21,165,525
Transportation Sales Tax	\$4,498,632	\$8,476,504	\$10,246,174	\$23,221,310
Development Impact Fees	--	--	--	--
Other	--	--	--	--
<b>PINAL COUNTY TOTAL</b>	<b>\$143,816,088</b>	<b>\$275,474,479</b>	<b>\$338,006,427</b>	<b>--</b>
<b>Gila County</b>				
HURF	\$21,395,479	\$36,228,976	\$36,752,522	\$94,376,977
Transportation Sales Tax	\$17,648,905	\$29,786,094	\$30,186,106	\$77,621,105
Development Impact Fees	--	--	--	--
Other	--	--	--	--
<b>Gila Communities</b>				
HURF	\$16,142,234	\$27,943,519	\$29,011,065	\$73,096,818
Transportation Sales Tax	N/A	N/A	N/A	N/A
Development Impact Fees (Payson)	\$1,050,000	\$1,500,000	\$1,500,000	\$4,050,000
Other	--	--	--	--
<b>GILA COUNTY TOTAL</b>	<b>\$56,236,618</b>	<b>\$95,458,589</b>	<b>\$97,449,693</b>	<b>\$249,144,900</b>
<b>CAG TOTAL</b>	<b>\$200,052,707</b>	<b>\$370,933,067</b>	<b>\$435,456,119</b>	<b>\$1,006,441,893</b>

\* This category includes Federal/state funding that is difficult to forecast but could be applied to transportation projects (particularly in relation to Federal- or state-designated routes in the geographic areas identified).

Source: ADOT Financial Management Services (HURF); *Gila County Transportation Excise Tax*, June 2014, Office of the Auditor General, Report #14-102, Table 1: Excise Tax Revenues and Expenditures, Calendar years 2009 through 2013; *Pinal County Transportation Excise Tax*, June 2011, Office of the Auditor General, Report #11-05, Table 1: Excise Tax Recipients, Distributions, 2010 Population and Lane Miles Maintained; Pinal County Development Fee Annual Report Fiscal Year 2012-2013; City of Payson Streets IIP.





Forecasts of revenues streaming to CAG members that are now transportation members of SCMPO and communities that are now transportation members of MAG have not been prepared. Information regarding these entities will be developed by the two MPOs, as they proceed in the development of relevant RTPs for their designated planning areas. Revenue flows defined by these planning documents then will be factored into decision-making relating to transportation system and infrastructure improvements within county areas and communities outside the two MPOs that remain transportation members of CAG. Additionally, the portion of the HURF funds retained by the state that could be used to fund operations, maintenance, and construction on state routes within Gila and Pinal counties has not been included in the forecast of revenue streams.

## 12.4 ESTIMATION OF COSTS AND FUNDING NEEDS

Cost estimates were prepared to approximate the level of expenditures for capital projects identified in the RTP as well as recurring expenditures for repair and maintenance of existing facilities. These estimates then were compared with revenue expectations presented in the previous section to establish the degree to which expected revenue satisfies the financial requirements of building and maintaining an adequate transportation network. Again, estimates for projects within the CAG transportation planning area are presented, as costs and associated funding gaps for projects with the SCMPO and MAG transportation planning regions will be the subject of planning efforts conducted by those agencies.

### 12.4.1 ROADWAY IMPROVEMENTS COST ESTIMATE

The estimated costs of implementing roadway improvement projects defined by this RTP were based on standard cross-sections for different roadway types (e.g., arterial, collector). A discussion of these various facility types was provided in Chapter 11. The cost estimates were derived by applying standard unit costs for the CAG Region reflected by costs associated with typical projects completed or bid in the immediate past. **Table 34** shows the cost per lane mile for each of the cross-sections identifies within the context of the RTP, as approved by the TTAC.

TABLE 34  
UNIT COSTS BY ROADWAY TYPE

Roadway Type	Capital Cost per Mile
Freeway	\$5 million per lane-mile
Service Traffic Interchange	\$25 million each
Arizona Parkway	\$2.4 million per lane-mile
Arterial	\$1.6 million per lane-mile
Arterial Intersection	\$1.1 million each
Asphalt Rock Dust Palliative (ARDP) Roadway	\$330,000 pwe mile

The number of lane miles associated with each roadway type was summed using geographic information systems (GIS) mapping software techniques. The unit costs in **Table 34** were applied to the lane miles for each roadway type to obtain a regional cost estimate by facility.

Regional cost estimates were developed for four improvement scenarios. The initial improvement scenario, referred to as the Base Improvement Costs, reflects completion of all projects currently in the pipeline or planned with a commitment to build, described previously in Chapter 5 as the “No-Build” alternative. It effectively represents completing projects thus far identified at the state, county, and local level and nothing more. This Baseline Improvement Costs Scenario establishes the



foundation of the roadway infrastructure upon which further future improvements are added. The estimated cost of this improvement scenario is shown in **Table 35**.

TABLE 35  
BASE IMPROVEMENT COSTS (\$M)

Improvement	Unit Cost (per lane mile)	Cost
<b>Paving (2 lanes)</b>		
Major Collector	0.33	17.4
Minor Arterial	0.33	1.3
<b>Widening</b>		
2 lanes to 4 lanes		
Principal Arterial	1.6	8.3
<b>TOTAL</b>		<b>27.1</b>

Proposed projects to improve the roadway network beyond that identified by Base Improvement Costs Scenario are identified in the RTP for the years 2020, 2030, and 2040. The costs of these additional projects form the estimates referred to as 2020 Improvement Costs, 2030 Improvement Costs, and 2040 Improvement Costs. These three improvement scenarios reflect additional roadway network projects necessary to accommodate forecasts travel demand, which are based on projections of population and employment growth in each of the future years identified. Cost estimates derived for these three improvement scenarios are additive, meaning each estimate of costs is an additional investment beyond the previous scenario. No CAG projects were identified in Year 2020 for the CAG transportation planning area. **Table 36** and Error! Reference source not found. show the results of the estimates prepared for 2030 Improvement Costs and 2040 Improvement Costs, respectively.

TABLE 36  
2030 IMPROVEMENT COSTS (\$M)

Improvement	Unit Cost (per lane mile)	Total
<b>Widening</b>		
2 lanes to 6 lanes		
Principal Arterial	1.6	7.9
<b>TOTAL</b>		<b>7.9</b>



TABLE 37  
2040 IMPROVEMENT COSTS (\$M)

Improvement	Unit Cost (per lane mile)	Total
<b>New Construction</b>		
2 lanes		
Principal Arterial	1.6	26.5
<b>Widening</b>		
4 lanes to 6 lanes		
Major Collector	1.6	3.2
<b>TOTAL</b>		<b>29.7</b>

Cost estimates presented herein provide a baseline for addressing needs on a regional basis, where roadways are aligned with one or more jurisdiction. The cost for all transportation improvement projects in Gila and Pinal counties was also estimated to provide a comprehensive regional outlook. These cost estimates are provided in an attachment to this report. However, more detailed costs will be developed by the SCMPO and MAG for member agencies as RTPs are prepared for communities and areas of Pinal County associated with these two MPOs.

## 12.4.2 ROADWAY MAINTENANCE COST ESTIMATES

The estimated maintenance costs for existing transportation facilities shown in **Table 38** are based on data found in a review of literature relating to roadway repair and maintenance unit costs. The sources of data used in these estimates is “Repair Priorities 2014: Transportation Spending Strategies to Save Taxpayer Dollars and Improve Roads” (Smart Growth America and Taxpayers for Common Sense, March 21, 2014). The data presented in this report provided a range of annual maintenance expenditure options per lane-mile, which have translated into average annual costs. Included in these ranges are annual repair and maintenance costs based on (1) the actual expenditures by ADOT, (2) the average actual expenditures of state departments of transportation, (3) the Repair Priorities 2014 report recommended ADOT expenditures, and (4) the national average of the Repair Priorities 2014 recommendation for state departments of transportation. The recommended repair and maintenance costs identified in the Repair Priorities 2014 report are described as the amounts states would be required to spend each year to maintain their current network and improve all roads in poor condition into a state of good repair over a 20-year horizon.

TABLE 38  
ANNUAL ROADWAY MAINTENANCE UNIT COSTS PER LANE MILE

Actual ADOT Expenditure (1)	Actual National Average (2)	Recommended ADOT Expenditure (3)	Recommended National Average (4)
\$6,411	\$8,855	\$23,577	\$24,237



The amount of existing lane miles were calculated for each county utilizing the GIS mapping software. The unit costs in **Table 38** were applied to the amount of existing lane miles to obtain a range of probable annual maintenance costs. **Table 39** provides the current average annual repair and maintenance costs as well as a calculation of estimated resulting maintenance costs for the periods 2015-2020, 2021-2030, and 2031-2040 based on these annual assumptions. This table indicates a wide range of potential assumptions for maintenance costs per lane mile for Gila and Pinal counties.

TABLE 39  
AVERAGE REPAIR AND MAINTENANCE COSTS: CURRENT AND PROJECTED

Region/Timeframe	Actual ADOT Expenditure	Actual National Average	Recommended ADOT Expenditure	Recommended National Average
<b>Pinal County</b>				
Average Annual	\$24,852,316	\$34,323,500	\$91,392,387	\$93,951,883
2015-2020	\$149,113,895	\$205,940,998	\$548,354,323	\$563,711,295
2021-2030	\$248,523,158	\$343,234,996	\$913,923,872	\$939,518,825
2031-2040	\$248,523,158	\$343,234,996	\$913,923,872	\$939,518,825
<b>Gila County</b>				
Average Annual	\$8,244,484	\$11,386,445	\$30,318,424	\$31,167,509
2015-2020	\$49,466,902	\$68,318,672	\$181,910,544	\$187,005,052
2021-2030	\$82,444,837	\$113,864,453	\$303,184,241	\$311,675,086
2031-2040	\$82,444,837	\$113,864,453	\$303,184,241	\$311,675,086
<b>CAG Region</b>				
Average Annual	\$33,096,800	\$45,709,945	\$121,710,811	\$125,119,391
2015-2020	\$198,580,797	\$274,259,670	\$730,264,867	\$750,716,347
2021-2030	\$330,967,995	\$457,099,449	\$1,217,108,112	\$1,251,193,912
2031-2040	\$330,967,995	\$457,099,449	\$1,217,108,112	\$1,251,193,912

## 12.5 ANALYSIS OF COST VERSUS REVENUE

Revenue forecasts discussed previously were then compared to estimated maintenance and capacity improvement costs to identify any potential funding gaps that would need to be addressed through alternate funding mechanisms. As previously discussed, revenue forecasts did not address funding for maintenance or improvements to federal or state facilities. Therefore, costs associated with these facilities were eliminated from this comparison. **Table 40** provides a comparison of estimated revenue to estimated costs by county and timeframe. Maintenance revenues were estimated at 66% of HURF funding and 33% of sales tax. Capacity revenues constituted the remaining portions of the HURF and sales tax revenue, plus the DIF revenue.

As indicated in **Table 40**, revenue projected to be available for maintenance and improvements in Gila County is sufficient to address the forecasted needs for the regional roadway network. However, it is anticipated that these funds would also be allocated to improvements to the local roadway network, which were beyond the scope of analysis of this RTP.





TABLE 40  
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS THROUGH YEAR 2040\*

Time-frame	Estimated Total Revenue	Maintenance Needs			Capacity Enhancements		
		Estimated Revenue	Estimated Costs	Funding Gap	Estimated Revenue	Estimated Costs	Funding Gap
Pinal County							
2015-2020	\$143,816,088	\$80,162,748	\$93,937,645	13,774,897	\$63,653,340	\$204,000,000	140,346,660
2020-2030	\$275,474,479	\$154,127,066	\$156,562,742	2,435,676	\$121,347,413	\$143,200,000	21,852,587
2030-2040	\$338,006,427	\$190,115,041	\$156,562,742	N/A	\$147,891,386	\$298,900,000	151,008,614
Gila County							
2015-2020	\$56,236,618	\$30,599,029	\$20,426,245	N/A	\$25,637,589	\$15,800,000	N/A
2020-2030	\$95,458,589	\$52,183,258	\$34,043,741	N/A	\$43,275,331	\$0	N/A
2030-2040	\$97,449,693	\$53,365,382	\$34,043,741	N/A	\$44,084,311	\$0	N/A

\* Estimates exclude forecast revenue and costs for maintenance and improvements to Federal and state facilities.

In Pinal County, both maintenance needs and capacity enhancement costs associated with recommended improvements to the regional transportation network exceed projected revenues in most instances. However, it should be noted that a portion of these costs would be for improvements necessary in the SCMPO and MAG regions, for which revenues have not been projected. Therefore, additional analysis has been conducted to identify the portion of the improvements that lie only in the CAG transportation planning region. **Table 41** provides a summary of these capacity improvement costs, excluding federal and state facility improvement costs.

TABLE 41  
TOTAL CAPITAL IMPROVEMENT COSTS IN THE PINAL COUNTY PORTION OF THE  
CAG TRANSPORTATION PLANNING AREA  
THROUGH YEAR 2040 (\$M)

Timeframe	Pinal
Base Total	\$2.9
2020 Total	\$0.0
2030 Total	\$7.9
2040 Total	\$0.0
Combined Total	\$10.9



**Table 41** shows that the total estimated costs for capacity enhancements that are not on state routes in approximately \$10.9 million in the Pinal County portion of the CAG Region. With estimated revenue for construction projects of approximately \$333 million between 2015 and 2040, it appears that the projected revenue will be adequate to accomplish the projects identified associated with that portion of Pinal County remaining in the CAG Region. However, as discussed previously, the majority of this projected revenue is expected to be generated by the unincorporated portion of Pinal County. It is anticipated that portions of the CAG funds in the Pinal County region could be used to assist in funding of projects that fall within the county but are part of the SCMPO and/or MAG regions, as well as state facilities.



# ATTACHMENT 1 VALUES, GOALS, AND OBJECTIVES





## VALUES

This chapter presents a set of values discerned from the various studies and plans developed for the many communities within the CAG Region. Values aid in defining the vision set forth in the previous chapter and provide foundational meaning to the mission to be accomplished with development of the RTP. Values are statements of ideas and principles that assure the public that initiatives defined in the RTP support the general shared beliefs of the region's residences regarding transportation needs. Thus, values are like maps that drive or guide an organization's culture and priorities; they provide a framework in which decisions are made in fulfillment of the organization's vision for its future.

Values have been identified within five broad areas of interest and concern relative to the purpose and function of the CAG Region's transportation system as the means for improving and sustaining the quality of life for all residents:

- **Economic Development and Opportunity**
- **Connectivity, Accessibility, and Mobility**
- **Environmental Quality**
- **Quality of Life**
- **Community Cohesiveness and Regional Identity.**



## Economic Development and Opportunity



As the CAG Region continues to grow, economic development with expanded employment and shopping opportunities should support affordable housing and promotion of community activity centers as gathering places for social activities, entertainment, and civic purposes.

Viable activity and growth centers should be developed to serve residents' needs by offering a diversity of housing opportunities, services, businesses combined with creation of a full range of employment opportunities allowing residents to start their career, raise a family, and move up instead of out of the region.

To do this, the following values are adopted as guidance in preparing the RTP ➤

- ❑ **Maintain infrastructure to support existing employment areas**
- ❑ **Encourage infrastructure to attract new business and industry**
- ❑ **Foster infrastructure investment based on likelihood of potential economic development**
- ❑ **Encourage development of concentrated "Activity Centers"**
- ❑ **Enhance facilities for rail freight transport**
- ❑ **Enhance airport facilities and services**
- ❑ **Support improvements that ease connectivity and mobility for freight**



## Connectivity, Accessibility, and Mobility

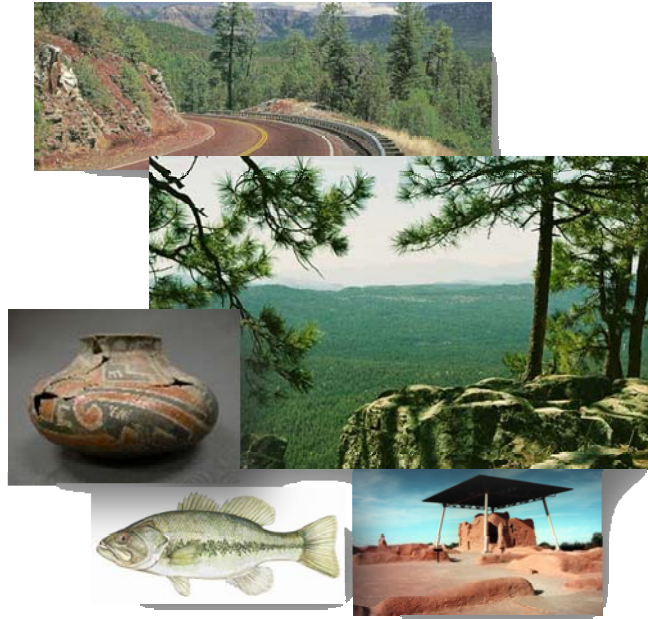
The communities of the CAG Region value a sustainable transportation system that provides a variety of transportation facilities and services to minimize congestion and promote regional accessibility and mobility for all residents. Therefore, adequate transportation corridors and a variety of multimodal transportation options should be identified and examined to address the essential needs of all populations for moving goods and people with minimal environmental effects. Linkages should be created and maintained that assure connectivity between communities within the region and between the region and surrounding regions. Mobility enhances should incorporate accessibility to the region's natural resources.



To do this, the following values are adopted as guidance in preparing the RTP ➤

- ❑ **Promote investments in new infrastructure to improve regional mobility**
- ❑ **Embrace new travel corridors to accommodate growth and interregional travel demand**
- ❑ **Support expansion of existing infrastructure**
- ❑ **Foster maintenance of current transportation system**
- ❑ **Support improvements in system safety**
- ❑ **Enhance local and regional transit facilities and services**
- ❑ **Foster improvement of pedestrian facilities**
- ❑ **Foster improvement of bicycle facilities**

## Environmental Quality



The communities of the CAG Region value the diversity of topography and physiography that provides magnificent views and vistas along the region's highways and byways. Therefore, its regional transportation system should reflect an environmentally sensitive balance of competing community qualities: enhanced accessibility and mobility complimenting the need for clean air and water and protection of the general fragility of the region's natural resources. The views of the mountains, open vistas during the day, stars at night, and the region's natural beauty, which includes clean air and water resources, should be maintained.

To do this, the following values are adopted as guidance in preparing the RTP ➤

- ❑ **Promote and embrace a program to sustain air quality**
- ❑ **Foster protection of natural resources and accessibility to these resources, as well as views and vistas**
- ❑ **Support and maintain critical cultural and archaeological resources**
- ❑ **Embrace a sound wildlife protection program recognizing identified habitat and migration patterns**



## Quality of Life

The regional transportation system of the CAG Region represents the backbone for a strong, diversified economy that creates meaningful employment opportunities at livable wages and, being in harmony with the natural environment, expands recreational opportunities to enrich resident's quality of life. The region's unique, even significant, historical, cultural, and neighborhood resources, dynamic urban areas, and small-town rural communities should be sustained through programs and infrastructure development that encourages healthful living patterns and lifestyles.



To do this, the following values are adopted as guidance in preparing the RTP ►

- ❑ **Foster programs to assure continued accessibility to and quality of visual resources**
- ❑ **Promote open space areas with trails hiking, biking, and equestrian pursuits**
- ❑ **Embrace guidelines for infrastructure, housing, and commercial development based on livability and sustainability principles**
- ❑ **Support programs and practices to promote healthy living patterns, interactive communities, and active lifestyles**
- ❑ **Foster economic development programs to reduce commuting requirements and time devoted to commuting**

## Community Cohesiveness and Regional Identity



Diversity is a unique characteristic of the CAG Region. Residents are dedicated to preserving unique historical architecture, maintaining visual and cultural identities of communities, and assuring the distinct qualities of specific locations within the region are valued. The agriculture and mining sectors have deep roots in the CAG Region, two endeavors that have supported the economies of many communities for decades. These activities should be sustained as integral to the region's wealth and welfare with an assurance of safe transportation facilities with adequate capacity to support regional economic activity. Balancing emerging urban centers and rural characteristics with growth dynamics

also is important to ensuring the threads of the region's history, heritage, and culture are woven into a meaningful whole.

To do this, the following values are adopted as guidance in preparing the RTP ➤

- ❑ **Maintain and enhance the individual character of places that have come to define the region's identity**
- ❑ **Support transportation infrastructure development that embraces a cohesive regional character while sustaining the region's immense natural wildlife habitats, view corridors, and recreational environments**
- ❑ **Embrace the unique cultural identity and heritage of the region**
- ❑ **Promote tourism that takes advantage of the large connected open spaces and unique recreational opportunities**

## GOALS & OBJECTIVES

Preparation of this RTP requires a decision-making framework for guiding definition, evaluation, selection, and implementation of options for improving the region's transportation system infrastructure. This is accomplished in part through establishment of goals and objectives.

This chapter identifies Goals and Objectives established to provide a basis for preparing the CAG RTP. They have been compiled and formulated by reviewing adopted planning documents prepared by Gila and Pinal counties and communities in the CAG Region. Goals and Objectives expressed in these documents were categorized, representing and reflecting 11 separate areas of expressed community hopes, desires, interests, or concerns. This process resulted in a reasonable set of Goals and Objectives that reflect the myriad views of the region's various communities regarding the future of transportation and its roles in community development.

The complete set of Goals and Objectives from all sources was synthesized and restructured to reflect an overarching set of aspirations relevant to conditions and issues facing the region today and supporting the values presented in the previous chapter. Through this "compendium" approach, a melding of concerns, understanding, ideals, issues, and desires of multiple entities within the CAG Region has been attained. The following seven Goals have been identified:

- Establish Regional Identify and Capability
- Foster Regional Economic Development
- Support Community Development and Sustainability
- Provide Multimodal Mobility Options
- Accommodate Anticipated Growth in Travel Demand
- Promote Land Use/Transportation Integration
- Establish Sound Policies for Funding, Financing, and Accountability

This Working Paper provides the CAG member agencies, citizens, stakeholders, and collaborating agencies the opportunity to review and confirm, affirm, blend, or reject the Goals and Objectives presented herein. This activity will give definition and direction to preparation of the CAG Region's first RTP. It also will establish a sound basis for regional coordination and collaboration regarding the development and maintenance of transportation facilities and services needed in the region. These Goals and Objectives may be refined following review of this Working Paper. They also may evolve as evaluation of improvement opportunities and appropriate methods to satisfy the Objectives for each Goal is accomplished.



## GOAL: ESTABLISH REGIONAL IDENTITY AND CAPABILITY

*Develop a Regional Transportation System that Enhances Regional Attribute and Supports the Travel Needs of the Tourist Industry*

- Plan and provide for transportation system improvements that enhance accessibility for rural communities and the Rim Country.
- Establish connectivity through improved transportation linkages (e.g., roads, paths, trails, or services, such as shuttles, guided trips, etc.) between multiple attractions as a strategy to emphasize the CAG Region as a destination for tourists with special attention given to the varied natural resources of the region's high country.
- Develop a framework for making transportation system development decisions that are compatible with environmental standards and guidelines and sustainable with respect to key regional ecosystems and desired lifestyles of the region's communities.



- Establish a program to develop and promote convenient and efficient public transportation as an alternative to automobile.

- Adopt transportation facility design guidelines that assure protection of the environment and ecosystems necessary to maintain the quality of the

region's natural resources and other tourism assets.

- Identify appropriate guidelines for minimizing the potential for noise impacts associated with regional mobility improvements and encourage creation of a comprehensive, integrated system of non-motorized facilities.
- Develop a multi-purpose trail system and trailhead location scheme that is integrated with the region's transportation system and the circulation and access needs of regional points of interest and major recreational sites.
- Engage federal and state transportation authorities in proposals to initiate programs that will assist the development and enhancement of tourism opportunities in throughout the region with special emphasis given to easing constraints on transportation facility development associated with federal, state, and Native American lands.
- Determine through research and surveys which transportation systems should be developed based on tourism experiences.





## GOAL: FOSTER REGIONAL ECONOMIC DEVELOPMENT

*Create a Regional Transportation System that Stimulates and Sustains Economic Development Objectives of the CAG Region*

- Identify and evaluate transportation and transit investments that potentially will provide direct support for economic development initiatives.
- Establish guidelines regarding safety and appropriate access control along highways and major arterials
- Preserve established truck routes and seek opportunities for expanding official truck routes.



- Ensure that land uses surrounding the region's airports (existing and potential future) are compatible with airport operations.

- Ensure industries and potential future industrial developments in the CAG Region have adequate rail service and efficient connectivity with markets outside the region.

- Evaluate transportation system improvements in light of opportunities for diversification and expansion of the region's industrial and manufacturing base.

- Provide transportation facilities and

services that are consistent with and support orderly physical and economic development in the region's identified Growth Centers.

- Develop a financing/funding plan that maximizes the public benefits of available federal and state funding for transportation facilities and services and optimizes the expenditure of those funds for maintenance and construction.
- Identify opportunities for the formation of informal and formal partnerships, as appropriate, to coordinate financing, development, and maintenance of mutually beneficial transportation improvements.
- Develop a transportation system that encourages new development while minimizing publicly-supported capital and long-term maintenance costs.
- Develop a transportation network with adequate accessibility to community airports and surrounding employment areas.

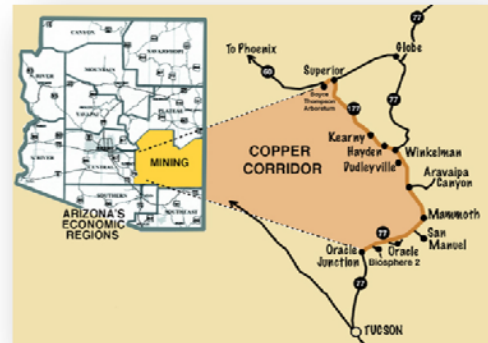


## GOAL: SUPPORT COMMUNITY DEVELOPMENT AND SUSTAINABILITY

### Implement Transportation System Improvements that Support Adopted Community Development Programs

There are several special organizations in the CAG Region established to foster economic growth and improvement in the quality of life. The goal is to assure transportation connectivity between and among the Growth Centers and identify opportunities for enhancing access from outside the CAG Region. Advantages to the following focus areas would be worthy of note when deliberating potential transportation system improvement options and associated benefits and costs.

- Historic Globe Main Street Program
- Payson Regional Economic Development Corporation - *Serving the Payson area*
- Payson Main Street Program
- Southern Gila County Economic Development Corporation - *Serving Globe, Hayden, Miami, San Carlos and Winkelman*
- Copper Corridor Economic Development Coalition - *Serving Aravaipa, Dudleyville, Hayden, Kearny, Mammoth, Oracle, San Manuel, Superior, and Winkelman*
- Apache Junction Main Street Program/Community Development Corporation
- Apache Junction Main Street Program/Community Development Corporation
- Central Arizona Regional Economic Development Foundation (CAREDF) - *Serving Casa Grande, Coolidge, Eloy, and Central/Western Pinal County*
- Economic Development Group of Eloy (EDGE) - *Serving greater Eloy*
- Florence Main Street Program
- North Eastern Pinal Economic Partnership - *Serving Apache Junction, Florence, Pinal County, Queen Creek, and Superior.*



## GOAL: PROVIDE MULTIMODAL MOBILITY OPTIONS

### *Assure Development of Multimodal Transportation Facilities and Services Supportive of Motorized and Non-Motorized Travel Modes*

- Identify opportunities for enhancing the availability of regional public transportation services in areas or markets where unmet transportation needs exist.



- Identify opportunities for providing bicycle and pedestrian pathways and equestrian trails to encourage and support non-motorized modes of travel.

- Create a multimodal transportation infrastructure that offers viable travel alternatives, improved general mobility, and integrated linkages between and among modes.

- Establish a multimodal transportation system that enhances employment opportunities in the CAG Region by encouraging access to and preservation of

adequate suitable locations for employment and industry uses, leading to long-term economic development through support for viable Growth Centers.

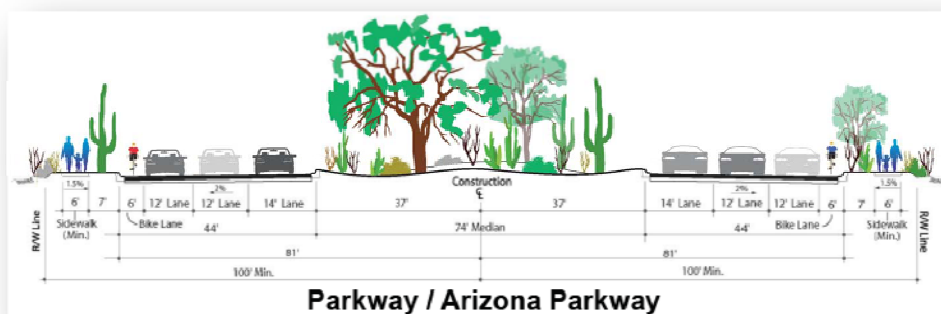
- Develop a safe, accessible multi-use trail system throughout the CAG Region that provides connectivity to a balanced array of passive and active open space and recreational areas.
- Encourage balanced, mixed-use and multi-modal development within designated commercial, employment, and industrial Growth Centers that supports logical extension of the transportation infrastructure.
- Develop a safe, efficient, and cost-effective multimodal transportation system that adequately and efficiently supports the region's mobility and access needs.
- Improve multimodal connectivity between residential areas as well as activity and Growth Centers that offer employment, shopping, educational, cultural, and recreational opportunities.
- Provide an appropriate array of modal options necessary to support the essential daily activities of the region's residents and assure equitable access to the region's opportunities.



## GOAL: ACCOMMODATE ANTICIPATED GROWTH IN TRAVEL DEMAND

*Develop a Regional Transportation System that Supports the Travel Needs of Residents, Businesses, and Visitors Alike*

- Establish a regional, unified vision for a multimodal transportation system directed toward improved connectivity within the CAG Region and additional travel options to and from the Phoenix and Tucson metropolitan areas.
- Provide a regional transportation system capable of accommodating anticipated travel demands of the cities, towns, and communities of the CAG Region by integrating system development with established land use and growth plans.
- Identify improvements to the region's highways and major arterials that will accommodate anticipated travel demand related to future land use and growth patterns in the CAG Region.
- Adopt highway and major arterial design standards that accurately reflect travel functions and anticipated travel volumes based upon expected future development density and intensity.
- Identify the need for and implement policies to secure adequate rights-of-way for future highways and major arterials critical to the regional transportation system based on forecast future travel demand.
- Maintain acceptable and reliable levels of service for all transportation modes serving the region by establishing a set of mode-specific performance measures.
- Assure the integrity of local and regional/intercity freight corridors, as well as transload and intermodal zones/facilities by maintaining reasonable and reliable travel times for freight movements into, through and within the region, as well as provide high-quality access between intercity transportation corridors and freight facilities.





## GOAL: PROMOTE LAND USE/TRANSPORTATION INTEGRATION

*Develop a Multimodal Transportation Infrastructure that Provides a Safe and Secure Traveling Environment by Promoting Integrated Planning of Transportation Facilities with Land Use Patterns*

- Integrate proposed transportation system improvements with community growth management efforts in the region to ensure adequate transportation facilities and services are available to support anticipated travel demand.
- Develop a safe, efficient, and balanced multimodal transportation system to facilitate the flow of people and goods throughout the region with emphasis on connectivity between existing and planned Growth Centers.



- Prepare regional guidelines for integrating land use planning, transportation system planning, and economic development to minimize travel time in support of air quality and other environmental goals, and improved quality of life.

- Develop a roadway classification system that is responsive to existing and projected traffic access and mobility demands and complements the region's general land use and economic development patterns.

- Encourage policies and practices that correlate land use and growth planning with regional travel patterns and transportation infrastructure design.
- Assure coordination of transportation and transit improvement and enhancement projects with land use and growth planning.
- Provide regional transit services designed for the current and future needs of the CAG Region's residents, workers, and visitors with connectivity to existing and planned Growth Centers and representing a viable alternative for commute trips within the region and to the Phoenix and Tucson metropolitan areas.
- Carefully manage and guide growth in a manner that promotes economic development, integrates current and future multimodal transportation systems, and is responsive to environmental resources.



## GOAL: ESTABLISH SOUND POLICIES FOR FUNDING, FINANCING, & ACCOUNTABILITY

*Establish and Maintain a Rationalized Set of Priorities and Strategies to Maximize the Benefits of Funding Limitations and Make Efficient Use of Public Resources*

- Coordinate land use and growth management with transportation planning and decision-making to achieve the most efficient and effective transportation system possible based on assessment of the region's financial resources.
- Identify future funding needs and implement policies to secure appropriate financing to meet the CAG Region's transportation priorities, including capital cost, operating and maintenance costs, and replacement costs.
- Investigate improved methods and processes for financing transportation system improvements.



- Implement policies to assure transportation facility investments are sustained for the future.
- Institute guidelines for performance-based planning in support of transportation system investment decisions that depend on public financing and other resources.
- Identify federal and state revenue sources and mechanisms available to support funding regional transportation system improvements to meet accessibility and mobility needs.
- Establish a framework for the equitable distribution of transportation system investment funds based on a balance of geography, cost/benefit analysis, and regional relevance.
- Develop a prioritized improvements schedule and implementation strategy that takes advantage of available federal and state funding opportunities.
- Give appropriate consideration to previously planned and authorized transportation improvement projects adopted through recognized planning processes.
- Establish and maintain a broad-based public participation program that permits CAG members and other stakeholders to review, evaluate, and comment on needed transportation infrastructure investments and resources identified for continuing operations of transportation facilities and services in the region.

