

# Apache Junction Transit Feasibility Study Update

June 2012

Prepared for the:  
Arizona Department  
of Transportation



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# **APACHE JUNCTION TRANSIT FEASIBILITY STUDY UPDATE**

## **Final Report**

June 2012

Prepared For:



Prepared By:



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# 1. INTRODUCTION

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## PURPOSE OF THE STUDY

As an edge city of the rapidly growing Phoenix metropolitan area, Apache Junction has been experiencing a rapid rate of population growth. Since incorporation, the City has also added tens of square miles to its jurisdiction through annexation. In addition, significant growth is anticipated in the Portalis area, located in the southern portion of the City, which could result in population growth, economic development, and increased traffic volumes. As the City expects to continue to grow both in population and in area, the City Council wishes to ensure that Apache Junction residents maintain a level of mobility consistent with preservation of the area's quality of life and economic potential.

The City, in cooperation with the Arizona Department of Transportation (ADOT) retained Jacobs Engineering Group, Inc., (Jacobs) to conduct the Apache Junction Comprehensive Transportation Study to develop a long-range multimodal transportation plan that will address the City's most critical current and future transportation needs. This Transit Feasibility Study, an update of a study conducted by Lima & Associates in 2005, is an element of the Apache Junction Comprehensive Transportation Study. The Transit Feasibility Study Update examined the various modes of public transportation that could be implemented both within Apache Junction and between Apache Junction and other areas. The study recommends levels of transit service to be implemented at the 60,000, 75,000, and 130,000 population thresholds used in the Comprehensive Transportation Study.

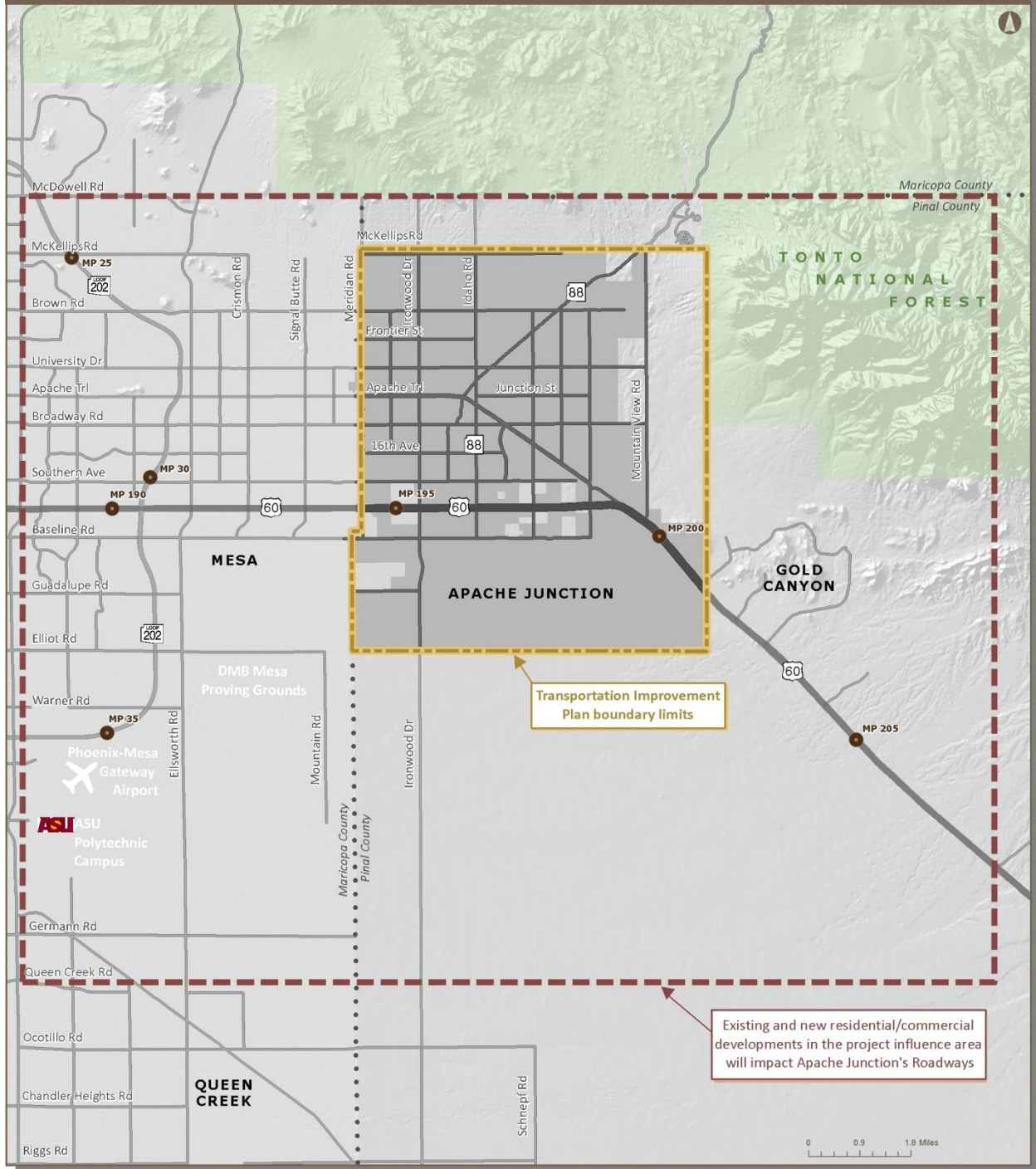
## STUDY AREA

Figure 1.1 shows the study area boundary along with the project influence area. The study area represents the Transportation Improvements Plan boundary limits while the project influence area represents a geographic area beyond the study boundary that directly affects the study area. The project influence area is needed to identify and accurately quantify the impact of traffic generated outside the study area within the City's transportation system. The extents of the study area and project influence area were identified per input from the Technical Advisory Committee.

When—or whether—to begin providing a particular mode of transit within a specific area or along a specific corridor depends upon a number of factors, including the residential density of the population in the area or corridor to be served, as well as both the density and absolute



**FIGURE 1.1: STUDY AREA**



**LEGEND**

- Study Area
- Influence Area
- City Limits
- Study Roadways
- Other Major Roadways
- County Line

Data Sources: City of Apache Junction, ALRIS, ADOT



numbers of sub-populations likely to be transit dependent. These populations include persons who are too young to drive an automobile, have physical characteristics that limit their ability to drive, or who cannot afford to own and maintain a car. Of similar importance is the employment density, or number of jobs per square mile, in an area or along a corridor.

### History of The Area

The City of Apache Junction is located approximately 35 miles east of Phoenix in Northern Pinal County at the junction of Old US Highway 80 and State Route 88. The elevation of the City itself is 1,715 feet above sea level, and that of Superstition Peak, the highest in the adjacent Superstition Mountain range, is 5,057 feet above sea level. Mining activity has taken place in the area since the late 19th Century, and thrill-seekers still search for the “lost mine” supposed to have been discovered in the 1870s by the “Dutchman,” Jacob Waltz. The nearby ghost town of Goldfield, now an Old West theme park, was once home to as many as 5,000 residents during the “Arizona Gold Rush” of the 1890s.

Shortly after the turn of the 20th Century, the amount of agricultural acreage in the Salt River Valley had grown to where a more dependable source of year-round water than that supplied by the naturally-flowing Salt River was needed. The Salt River Valley Water Users’ Association—later the Salt River Project—was formed, and federal funds were procured to construct a dam and create a reservoir at the confluence of the Salt River and Tonto Creek northeast of the Valley. A construction road was built from the railhead at Mesa to the construction site in 1905, and in 1911 former President Theodore Roosevelt traveled over the road to dedicate the completed dam and reservoir which had been named in his honor.

The construction road was both scenic and challenging to drive, and was soon a favorite with tourists. It became known as the “Apache Trail” and was promoted as a side trip to transcontinental rail travelers by the Southern Pacific Railroad. After the Phoenix - Globe Highway via Superior was completed through the area in 1922, the location of the junction of that highway with the Apache Trail became known as Apache Junction.

In 1923, George Cleveland Curtis, a traveling salesman, homesteaded in the area and built the Apache Junction Inn. After World War II, winter visitors began building residences in the area and staying in recreational vehicle parks. Area population has increased steadily since then, and the City was incorporated in 1978.



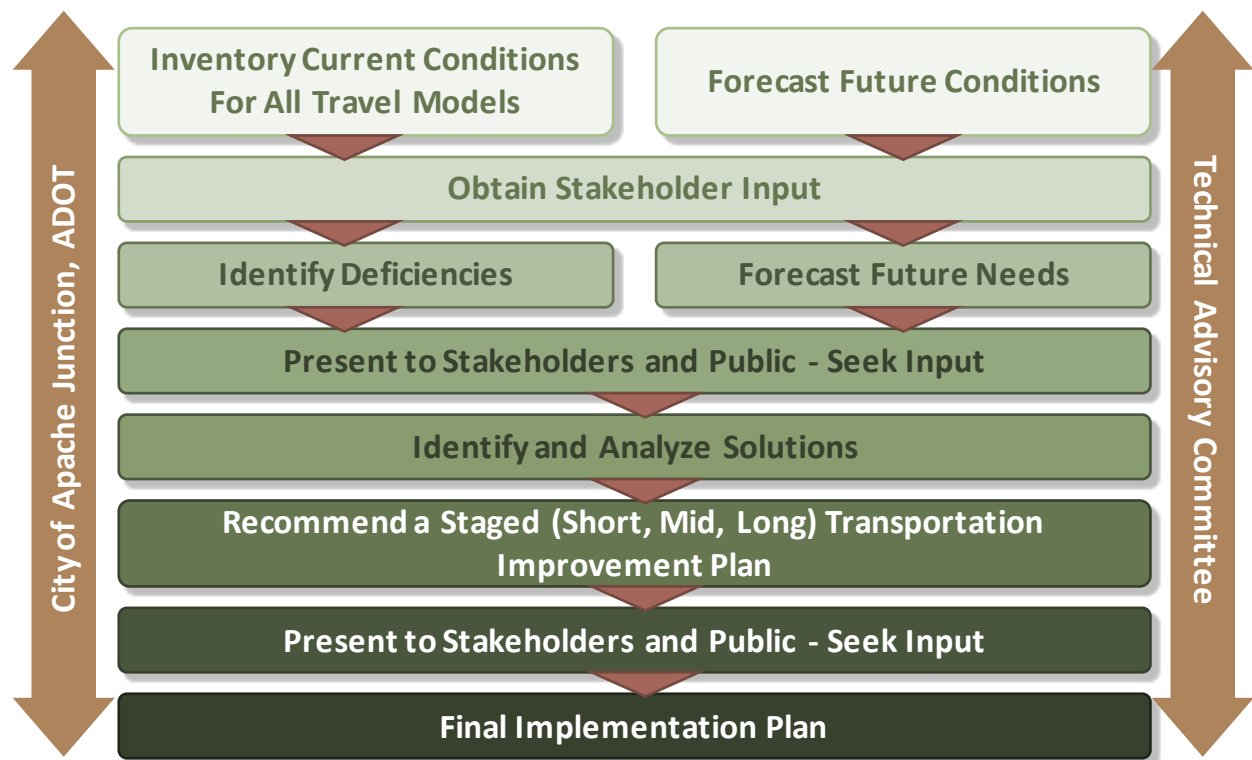
## STUDY PROCESS

The study was guided by a Technical Advisory Committee (TAC) that included representatives from:

- ◆ City of Apache Junction
- ◆ ADOT
- ◆ Pinal County
- ◆ CAAG
- ◆ City of Mesa
- ◆ Arizona State Land Department (ASLD)
- ◆ Maricopa County Department of Transportation (MCDOT)
- ◆ Bureau of Land Management (BLM)
- ◆ Town of Queen Creek
- ◆ Maricopa County Flood Control District (MCFCD)

The role of the TAC was to provide guidance, support, advice, suggestions, and recommendations, and to perform document reviews throughout the study process. The First Public Open House was conducted in March 2011 to present existing and projected transportation conditions and issues. The second round of public input involved extensive outreach through online social media and a presentation was given to the City Council of recommended transportation improvements. The study process is illustrated in Figure 2

**FIGURE 2: STUDY PROCESS**





## 2. EXISTING SOCIOECONOMIC AND TRANSPORTATION CONDITIONS

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### EXISTING LAND USE AND SOCIOECONOMIC CONDITIONS

This section summarizes current land use, socioeconomic conditions, characteristics of the physical and natural environments, environmental justice population review (Title VI), and cultural resources inventory for the study area.

#### Land Ownership Status

The Apache Junction planning boundary covers approximately 44 square miles of land area. Approximately 53% of the land is privately owned, 35% is managed by ASLD, 9.4% is managed by the BLM, and less than 2% is managed by the Bureau of Reclamation. Figure 2.1 displays the current land ownership status in the study area.

#### Socioeconomic Conditions

Creating an inventory of the study area's socioeconomic characteristics and understanding this data is a critical element for any transportation planning study. Socioeconomic data is one of the primary inputs to the travel demand modeling process that is used to forecast traffic volumes in the study area. Below is a list of key statistics for the study area:

- ◆ Land Area: 44.04 square miles
- ◆ Population (Year 2010): 43,474
- ◆ Total Housing Units (Year 2010): 27,137
- ◆ Occupied Housing Units (Year 2010): 18,978
- ◆ Median Age: 47.3\*
- ◆ Median Household Income: \$39,467\*
- ◆ Below Poverty Percentage (Year 2000): 11.35%
- ◆ Principal Economic Activities: Recreation and retirement

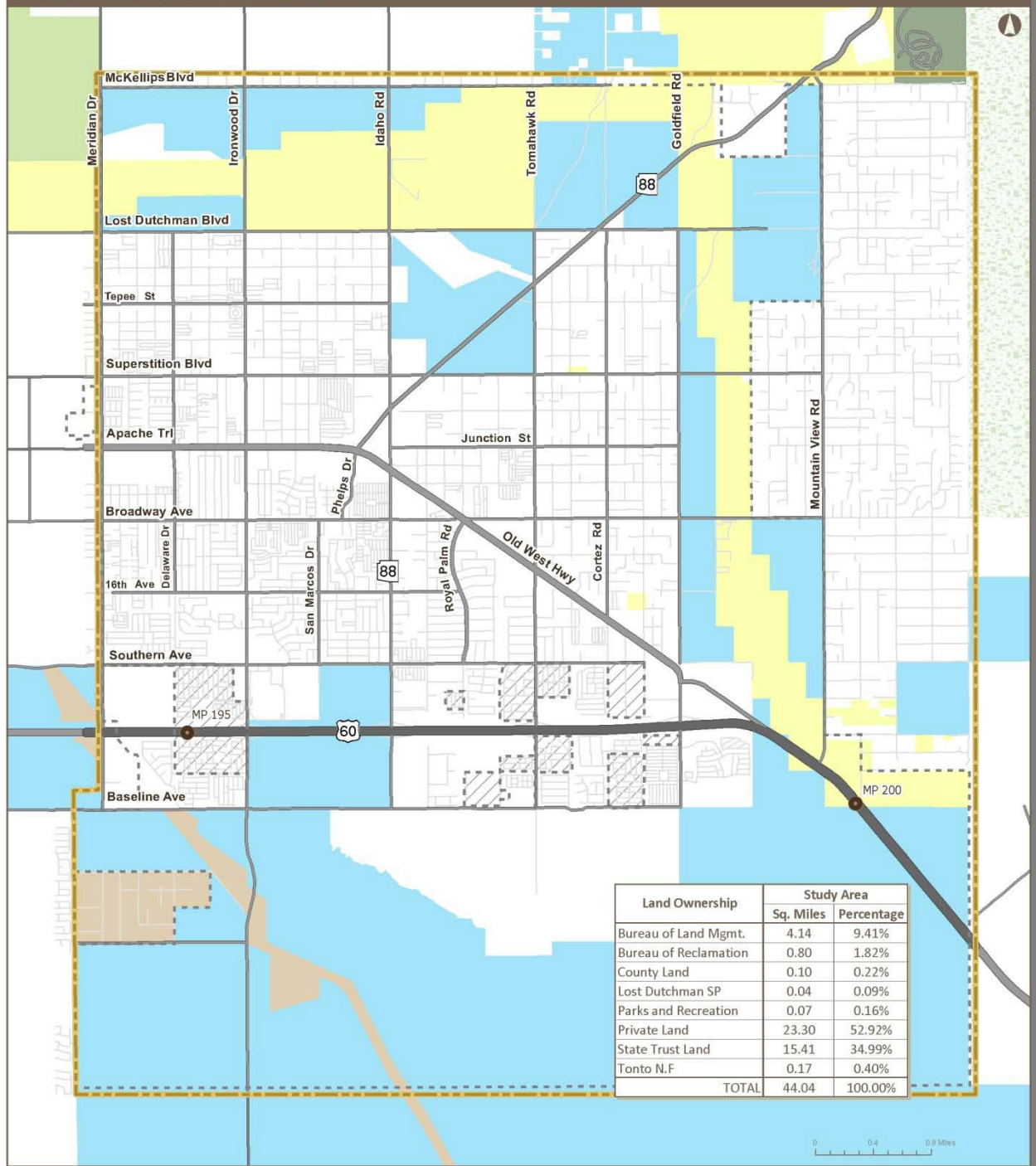
*\* Source: U.S. Census Bureau, 2006-2010 American Community Survey*

#### Population and Housing Unit Growth Trends

According to the 2000 U.S. Census, the study area had a population of approximately 38,095 people. Since 2000, the study area has experienced a population growth rate of 1.41% per year, which is lower than the average statewide growth rate of 2.46% per year and significantly lower than the Pinal County growth rate of 10.91% per year. Table 2.1 lists the population and housing growth trends from 2000 to 2010.



**FIGURE 2.1: LAND OWNERSHIP**



The study area also had a 0.31% per year housing unit increase since 2000; the 2000 U.S. Census counted 26,321 housing units in the study area and in 2010 approximately 27,137 housing units are within the study area boundary.

**TABLE 2.1: POPULATION AND HOUSING UNIT GROWTH TRENDS**

Geographic Area	Population		Population Growth Rate	Housing Units		Housing Units Growth Rate
	2000	2010		2000	2010	
Study Area	38,095	43,474	1.41%	26,321	27,137	0.31%
Pinal County	179,727	375,770	10.91%	81,154	159,222	9.62%
State of Arizona	5,130,632	6,392,017	2.46%	2,189,189	2,844,526	2.99%

Source: U.S. Census Bureau, Arizona Department of Commerce

### Employment Overview

Recreation, in-migrating retirees, and seasonal residents are the primary drivers of Apache Junction's economy. Currently, the City of Apache Junction has approximately 9,600 jobs. Major employers in the community include City and County governments, the local school district, local industrial facilities, and several grocery and merchandise stores. In addition, Pinal County is a major employer at the Apache Junction Government Complex and the Pinal County Sheriff's Office (PCSO) sub-station located just outside the study limits along King's Ranch Road. Within the study area there are 10 schools: three elementary schools, two middle schools, one high school, three charter schools, and one community college. Table 2.2 lists the major employers within the study area.

**TABLE 2.2: MAJOR EMPLOYERS**

Major Employers	Employees
Apache Junction Unified School District	607
Wal-Mart Supercenter Store #1831	352
Mountain Health & Wellness*	238
City of Apache Junction	221
Apache Junction Fire District	81
Apache Junction Medical Center	80
United States Postal Service	75
Empire Southwest	53
Fry's Food Stores	49
Central Arizona College – Superstition Mountain Campus	41
Safeway Stores	33

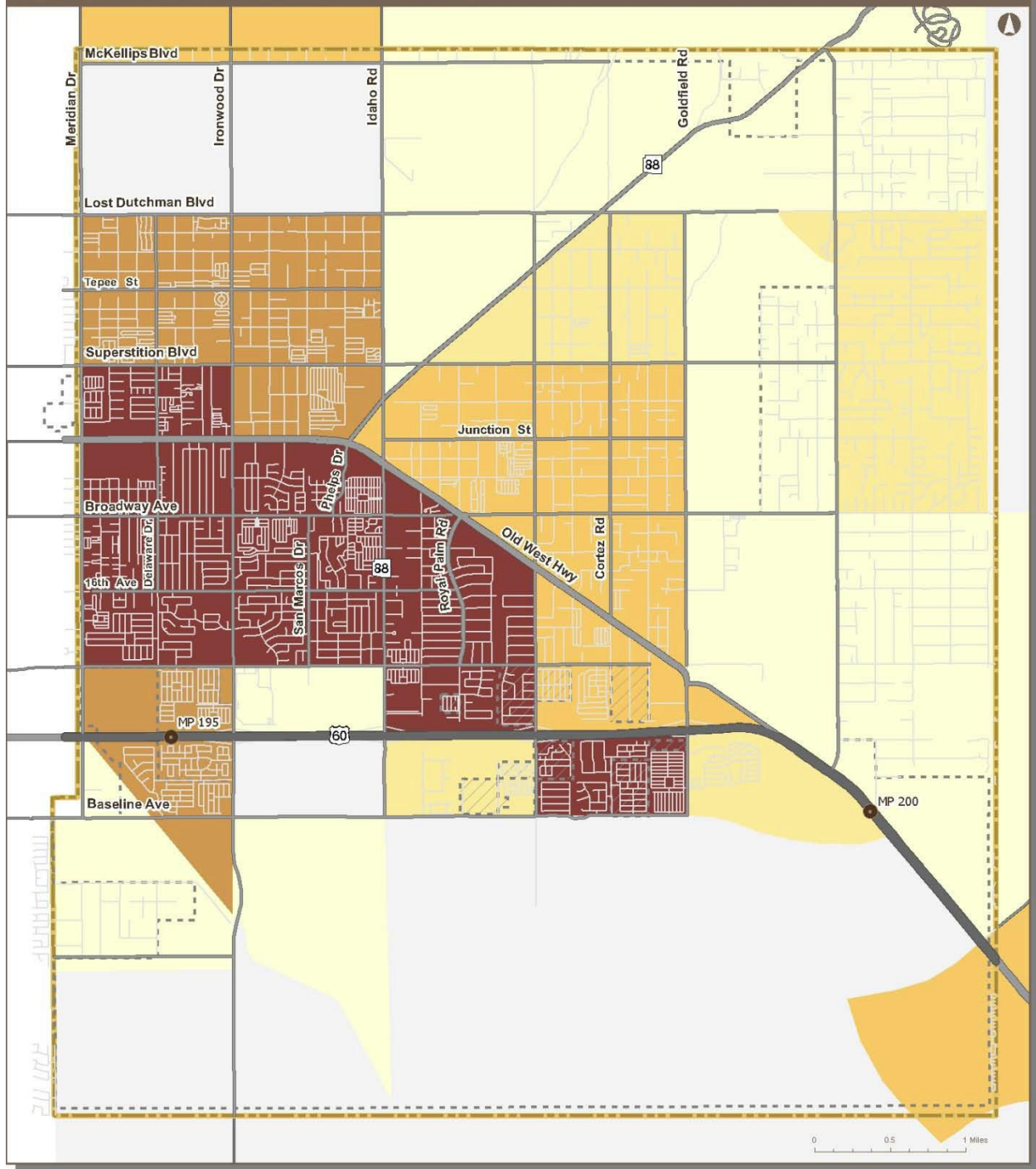
Source: City of Apache Junction, June 2011



Population, housing units, and various types of employment categories were inventoried for each Traffic Analysis Zones (TAZ) in the study area. TAZs are geographic subdivisions of the study area bounded by roads, political boundaries, natural and man-made geographical constraints (such as rivers, washes, etc.). For this study, Pinal County's countywide travel demand model was used. Forty-three TAZs included in the Pinal County travel demand model are within the Apache Junction study limits. Figure 2.2 illustrates the population density per TAZ and Figure 2.3 illustrates the occupied housing units and employment estimates and distribution at the TAZ level.

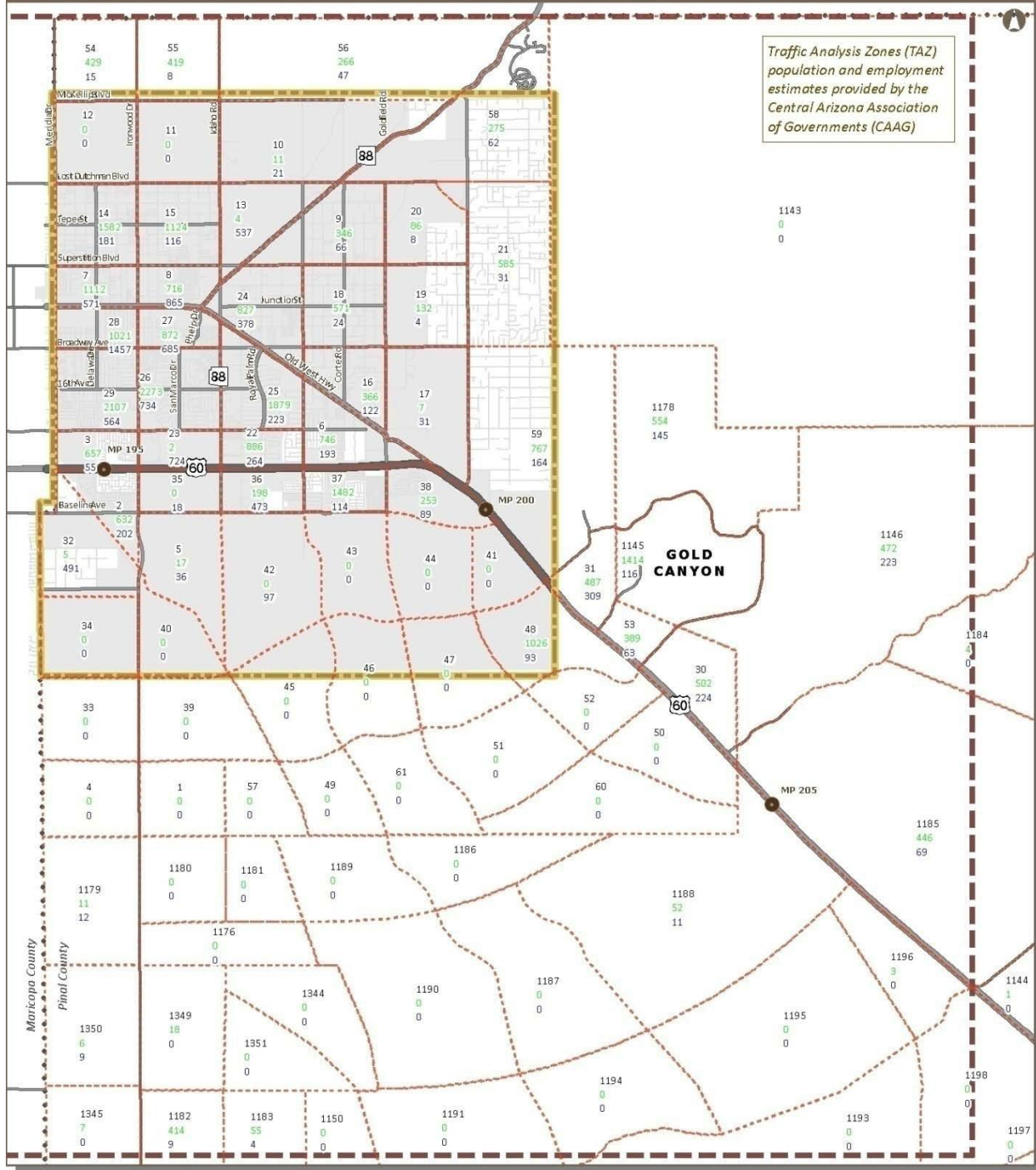


**FIGURE 2.2: POPULATION DENSITY BY TAZ**





**FIGURE 2.3: OCCUPIED DWELLING UNITS AND EMPLOYMENT BY TAZ**



**LEGEND**

XX TAZ Number

XX Occupied Dwelling Units

XX Total Employment

Freeway

Study Roadway

Local Roadway

TAZ Boundary



Study Area



Influence Area



County Line



City Limits

0 0.7 1.4 Miles

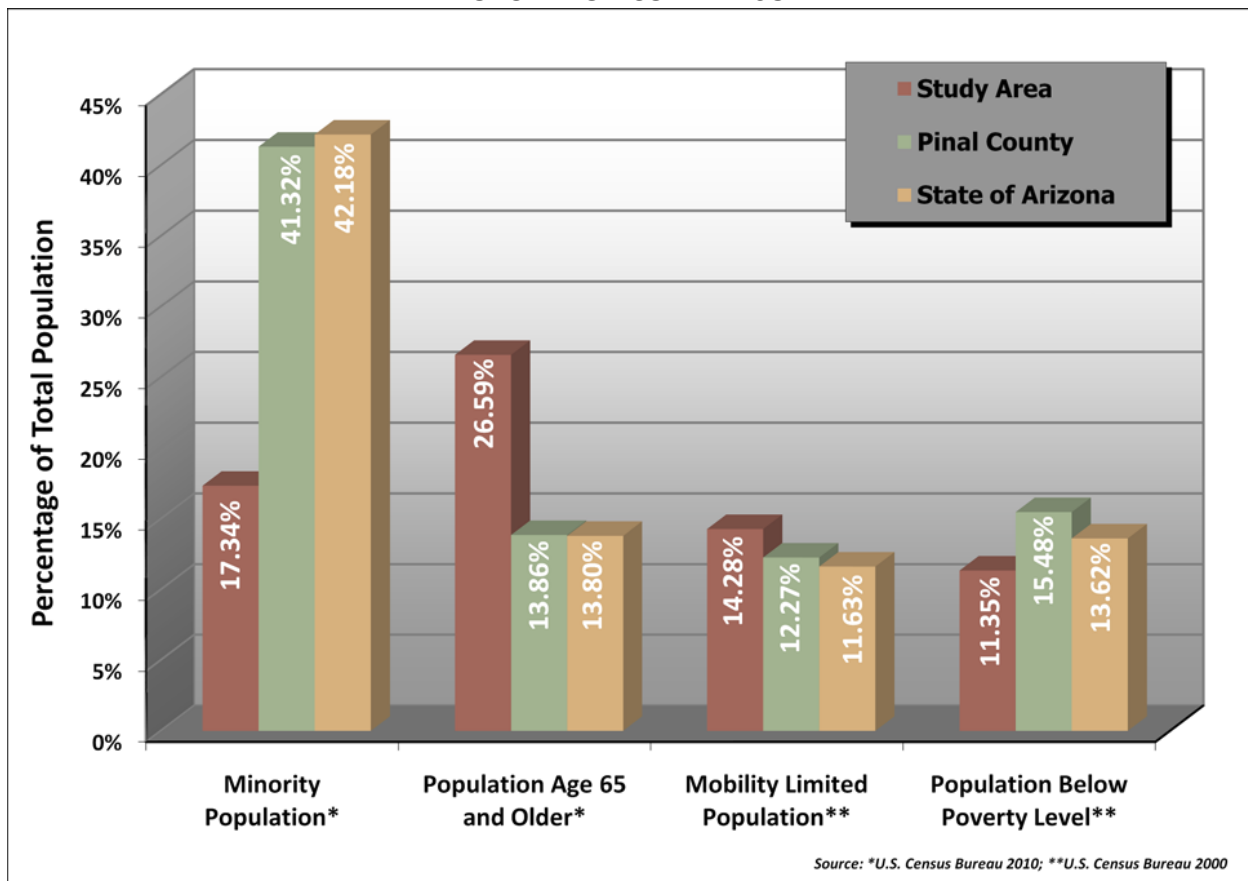
Data Sources: City of Apache Junction, ALRIS, CAAG, ADOT



## Environmental Justice Review (Title VI)

Title VI of the Civil Rights Act of 1964 and related statutes require that individuals are not discriminated against based on race, color, national origin, age, sex, or disability. Executive Order 12898 on Environmental Justice dictates that any programs, policies, or activities to be implemented are not to have disproportionately high adverse human health and environmental effects on minority populations. Thus, in relation to this study, transportation improvements should not adversely impact such groups disproportionately. In addition to assuring that these policies are adhered to, a variety of possible alternatives should be developed and considered in order to make sure all groups are fairly represented in the amount and type of transportation services provided. Figure 2.4 compares the Title VI data reviewed for the study area, Pinal County, and the State of Arizona.

**FIGURE 2.4: MINORITY, AGE 65 AND OLDER, MOBILITY LIMITED, AND BELOW POVERTY POPULATION COMPARISON**



### Minority Population

Minority population consists of individuals who are members of the following population groups: Native American or Alaskan Native, Asian or Pacific Islander, Black, and Hispanic. According to the 2010 U.S. Census data:

- ◆ 17.3% of the population is minority, with Hispanics as the largest minority group.
- ◆ Minority population is significantly less than the countywide and statewide estimates.

Figure 2.5 illustrates the minority population concentrations throughout the study area.

### Population Age 65 and Over

According to the 2010 U.S. Census data:

- ◆ Median age in the City of Apache Junction is 47 years old
- ◆ Within the study area approximately 26.6% of the population is over 65 years of age.
- ◆ Population over 65 years of age is higher than the countywide and statewide estimates.

Figure 2.6 displays the age 65 and over population concentrations.

### Below Poverty Population

The Census Bureau uses a set of income thresholds that vary by family size and composition to determine below poverty population. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The 2000 U.S. Census data shows that:

- ◆ 11.3% of the total population in the study area is classified as below poverty.
- ◆ Below poverty status is lower than the countywide and statewide estimates.

Figure 2.7 illustrates the below poverty population concentrations.

### Mobility-Limited Population

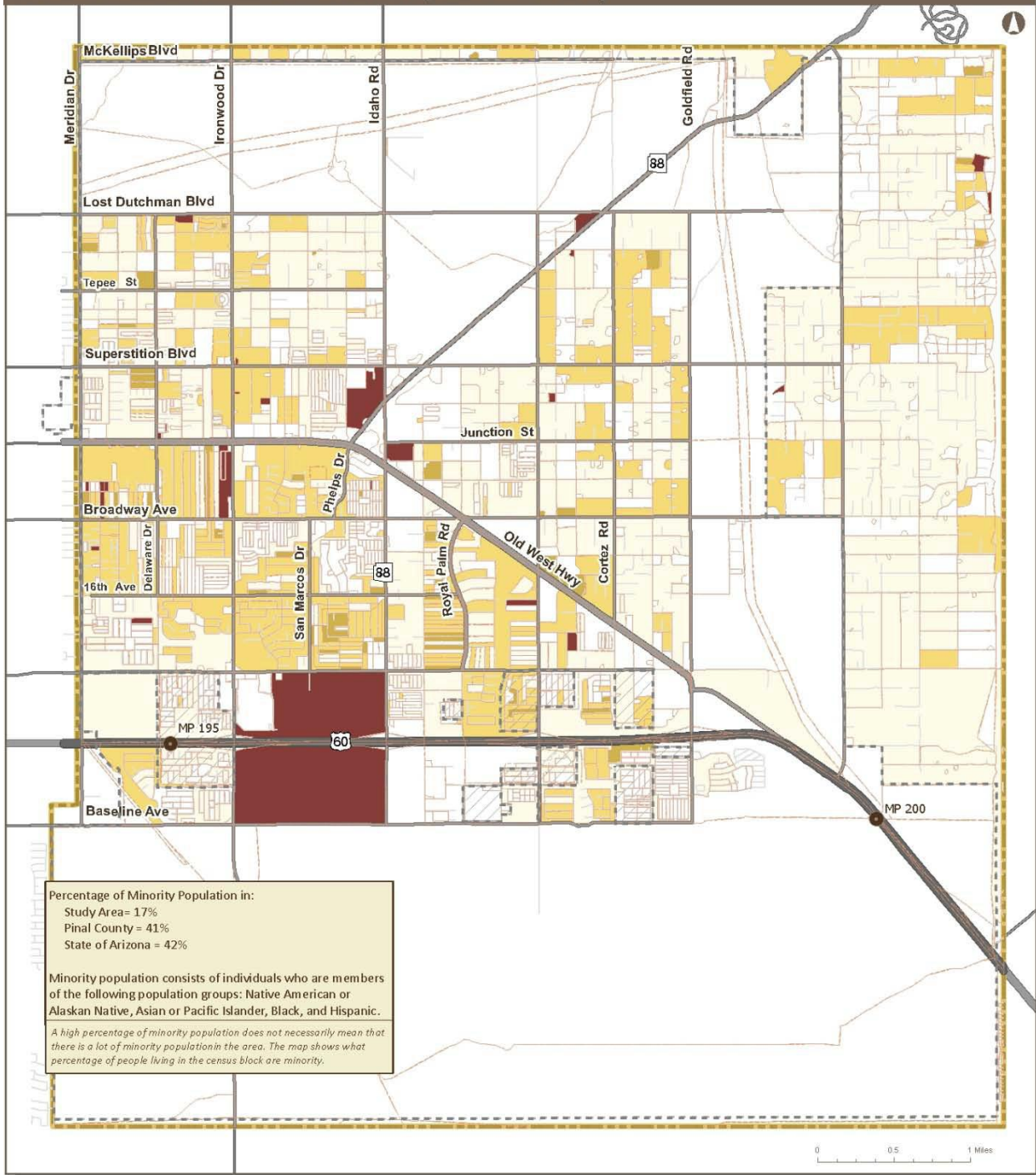
The mobility-limited population is made up of individuals who have a physical or mental disability that prohibits them from operating an automobile. In general, mobility-limited population group requires access to public transportation and hence for transportation planning purposes, it is critical to identify the locations with high concentration of this population group. According to the 2000 U.S. Census:

- ◆ 14.3% of the total population in the study area is mobility-limited
- ◆ The study area's mobility limited population is higher than both the statewide and county's estimate of 11.6% and 12.3%.

Figure 2.8 shows the mobility-limited population concentrations in the study area.



**FIGURE 2.5: MINORITY POPULATION (CENSUS BLOCK)**



**LEGEND**

**Minority Population Percentage By Census Block**

Below Study Area Average	Above Study Area Average
0.0%	17.1% - 43%
0.1% - 17%	43.1% - 69%
	> 70%

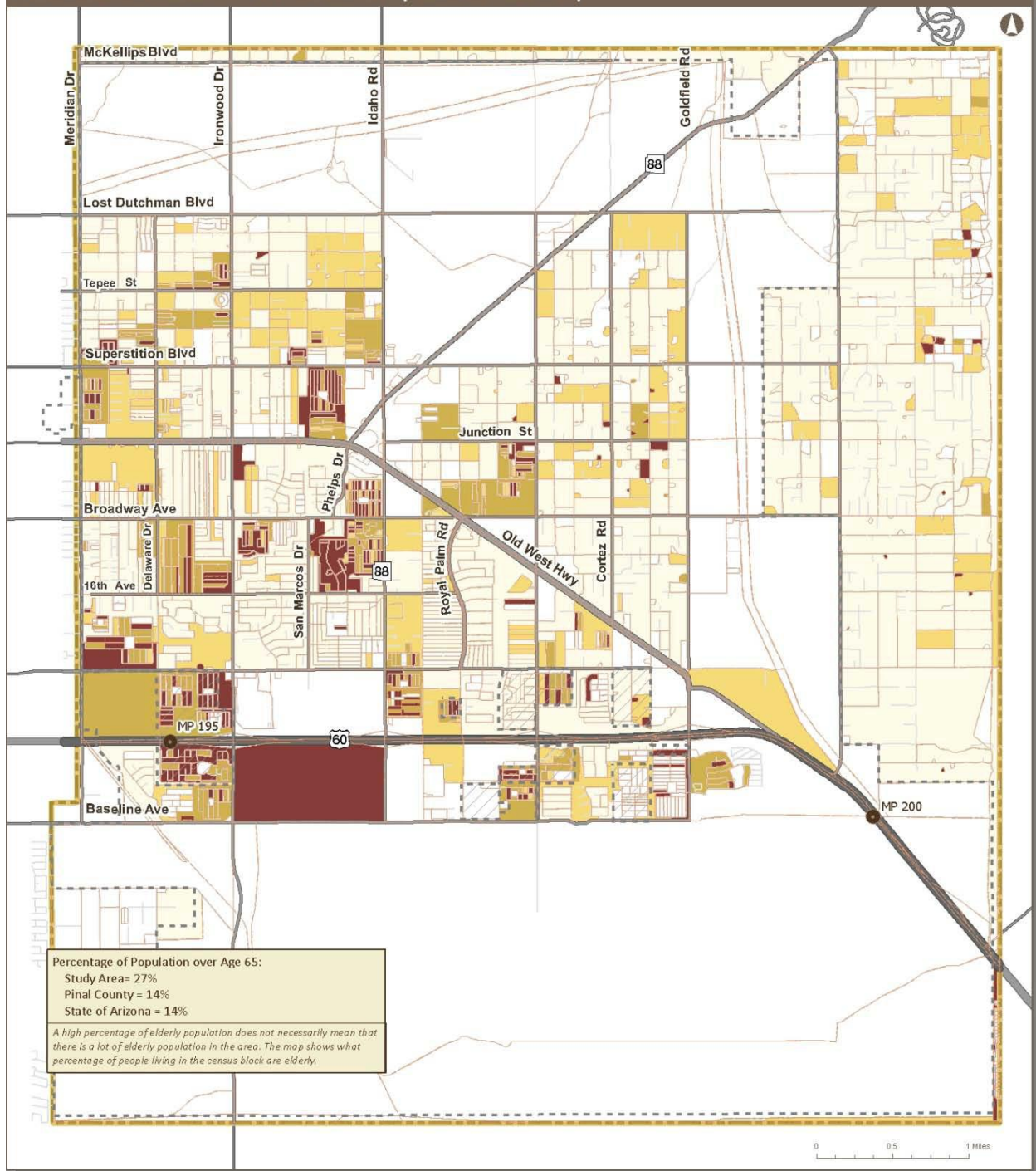
	Freeway		Study Area
	Study Roadway		City Boundary
	Local Roadway		County Island

Data Sources: City of Apache Junction, Census Bureau, Census of 2010 Summary 1 Data





**FIGURE 2.6: ELDERLY POPULATION (CENSUS BLOCK)**



**LEGEND**

**Elderly Population Percentage By Census Block**

Below Study Area Average

- 0.0%
- 0.1% - 27.0%

Above Study Area Average

- 27.1% - 50%
- 50.1% - 75%
- > 75.1%

- Freeway
- Study Roadway
- Local Roadway

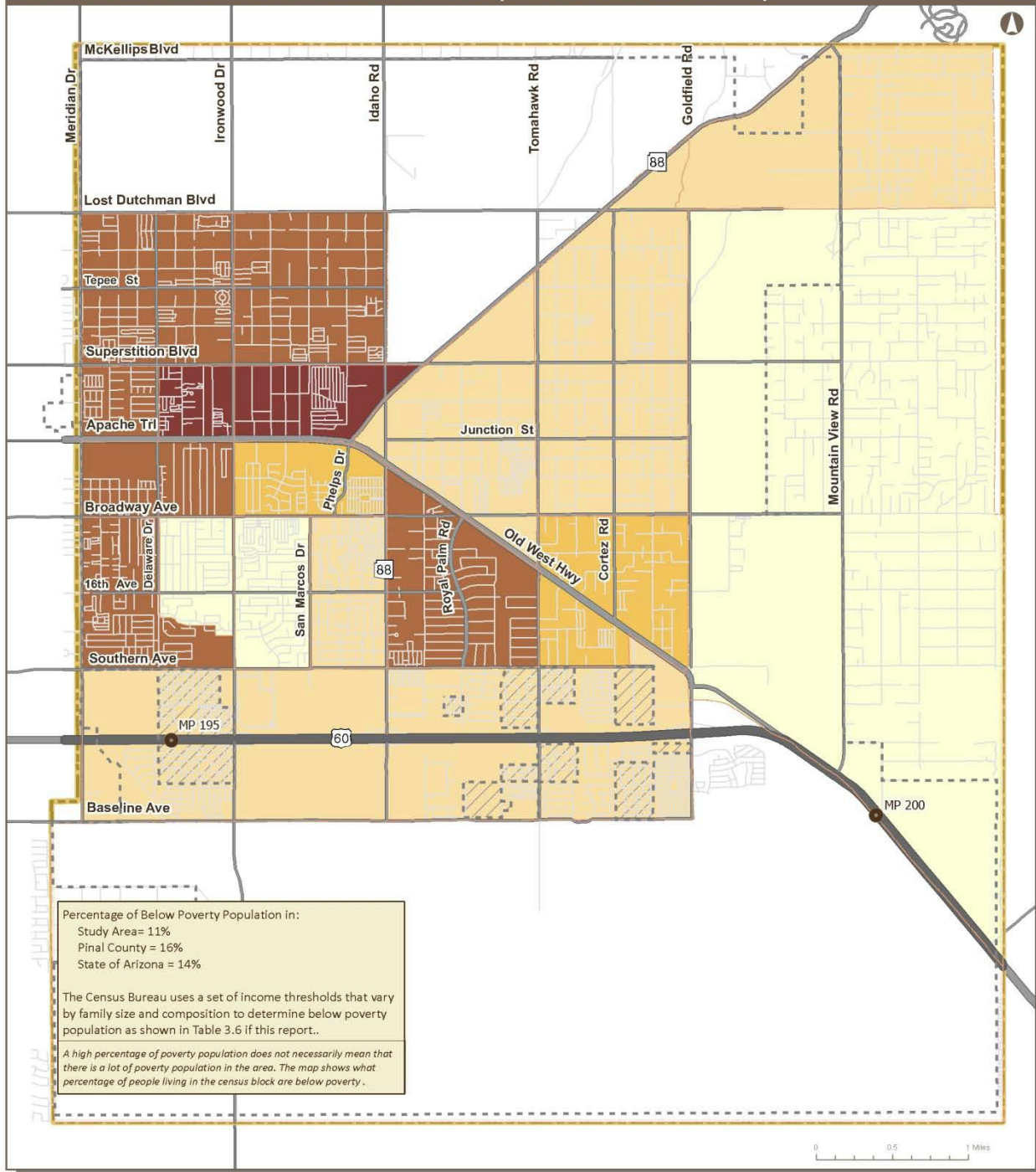
- Study Area
- City Boundary
- County Island

Data Sources: City of Apache Junction,  
 Census Bureau, Census of 2010 Summary 1 Data

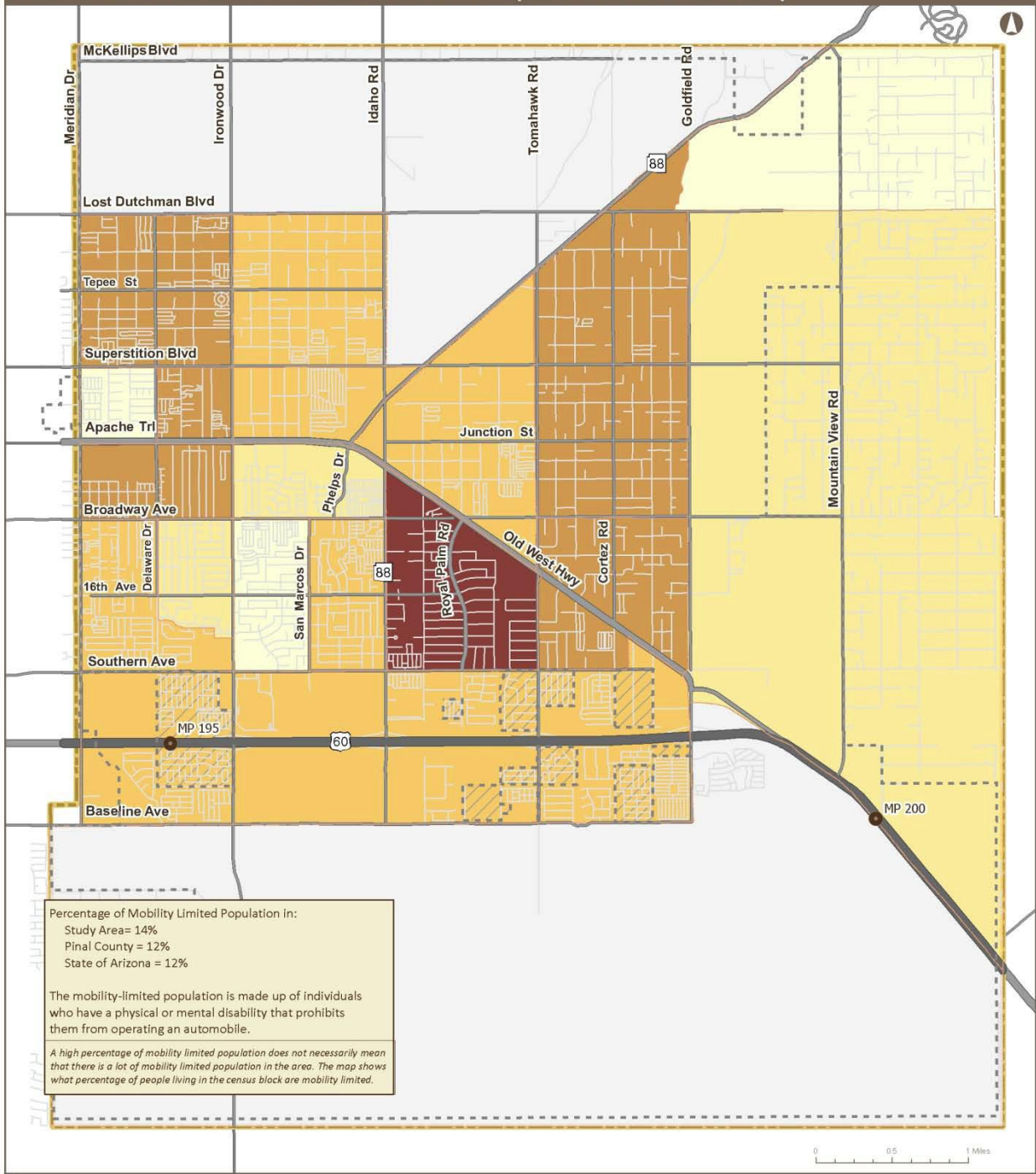




**FIGURE 2.7: BELOW POVERTY POPULATION (CENSUS BLOCK GROUP)**



**FIGURE 2.8: MOBILITY LIMITED POPULATION (CENSUS BLOCK GROUP)**



## EXISTING TRANSPORTATION CONDITIONS

This section inventories major elements of the existing transportation system and documents the status/condition of each element. Major elements inventoried include bridges, pavement condition, crashes, traffic conditions, roadway performance, and other modes of transportation in the study area.

### Existing Roadway System

#### Major Roadways

The study area is comprised of a network of major arterials, collectors, and local roadways. The following is a summary of characteristics of the major roadways that traverse the study area:

- ◆ *US 60* is an ADOT owned east-west highway that serves as a commuter freeway to the Phoenix metropolitan area and as a regional travel corridor.
- ◆ *SR 88/ Idaho Road* is an ADOT owned north-south urban principal arterial that begins at the junction of US 60 and travels northeast along the Superstition Mountains to Roosevelt Lake.
- ◆ *Ironwood Drive* is a major north-south corridor that serves local and regional traffic.
- ◆ *Apache Trail* is an east-west urban principal arterial that serves both local and regional traffic.
- ◆ *Old West Highway* is a northwest-southwest urban principal arterial that connects Apache Trail and SR 88 to US 60.

#### Roadway Functional Classification

Functional Classification is the grouping of streets and highways by the character of service they intend to provide. Table 2.3 lists the functional classification types and definitions for major roadways defined by the City of Apache Junction's General Plan.

Figure 2.9 displays the current FHWA approved functional classification for roadways within the study area. Many of the study roadways shown on the map operate at a classification different than those approved by FHWA in early 1990s. In order to qualify for federal funding, FHWA classification of a roadway should be collector or above.



**TABLE 2.3: ROADWAY FUNCTIONAL CLASSIFICATION DEFINITION**

Classification	Description
Freeways	Freeways are divided highways with four or more travel lanes that are designed to carry large volumes of high-speed traffic and serve long, regional trips. Freeways have full access control, with entry and exit restricted to grade-separated traffic interchanges. All roadways classified as freeways are portions of the State and Federal Highway System and are under the jurisdiction of ADOT.
Parkways	Parkways are high capacity surface streets with substantial access control and potential grade separations that are designed to accommodate regional travel over significant distances. A minimum of six through lanes is the typical width for parkways.
Major Arterials	Major arterials are designed to move high volumes of traffic over substantial distances, but may also provide direct access to adjacent properties. Arterial streets are usually located on one-mile section lines and intersections are at-grade. Six through lanes is the normal width.
Minor Arterials	Minor arterials are similar to major arterials but with somewhat lower design requirements. Four through lanes is the normal width.
Collectors	Collector streets are designed to carry lower traffic volumes for shorter distances than arterials. Collector streets receive traffic from neighborhoods and distribute it to arterials and vice versa. They serve more of a land access function as opposed to providing mobility for long-distance traffic. Two to four through lanes is the typical width.
Local Streets	Local streets provide access directly to local property and are not designed to accommodate through traffic. Two lanes is the usual width.

### Number of Lanes

A field review was conducted to inventory the number of lanes and posted speed limits for major roadways in the study area. In addition, traffic control type (signals, roundabouts, stop signs, etc.) at major intersections was also inventoried. Figure 2.10 displays the number of lanes for each roadway.

### Existing Traffic Conditions

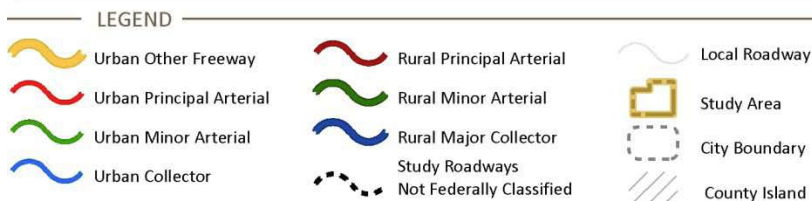
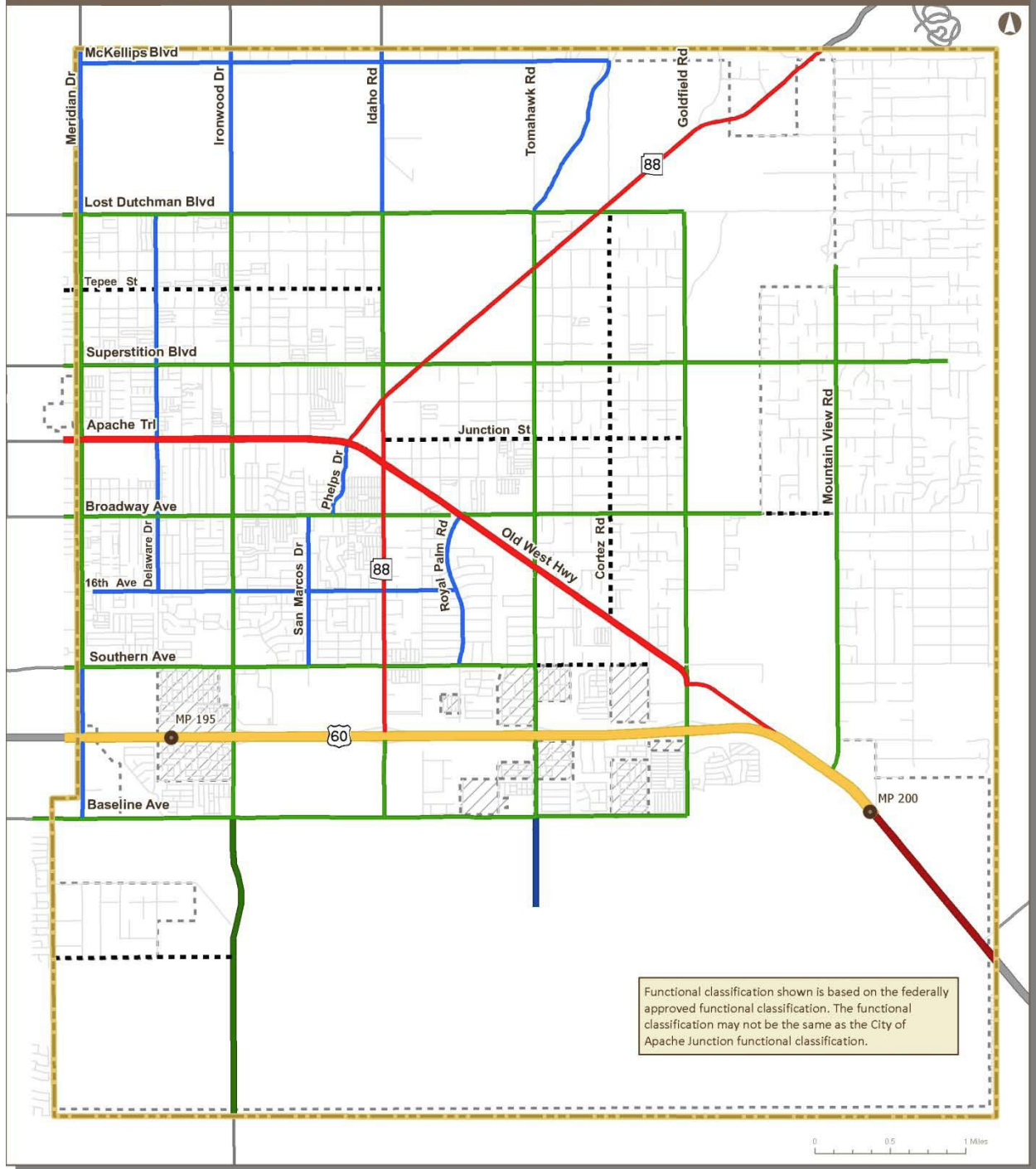
Existing daily traffic count data was obtained from the City of Apache Junction, CAAG, and ADOT. Figure 2.11 displays the existing daily traffic counts. Key observations noted in Figure 4.10 include:

- ◆ US 60 carries the highest amount of traffic, with volumes ranging from 16,700 to 31,500.
- ◆ Ironwood Drive from the southern study area boundary to US 60 carries the highest amount of traffic on a local roadway, with volumes ranging from 11,650 to 25,954.
- ◆ Apache Trail, from the western study area boundary to Superstition Boulevard, carries the second highest amount of traffic on a local roadway, with volumes ranging from 12,029 to 19,316.





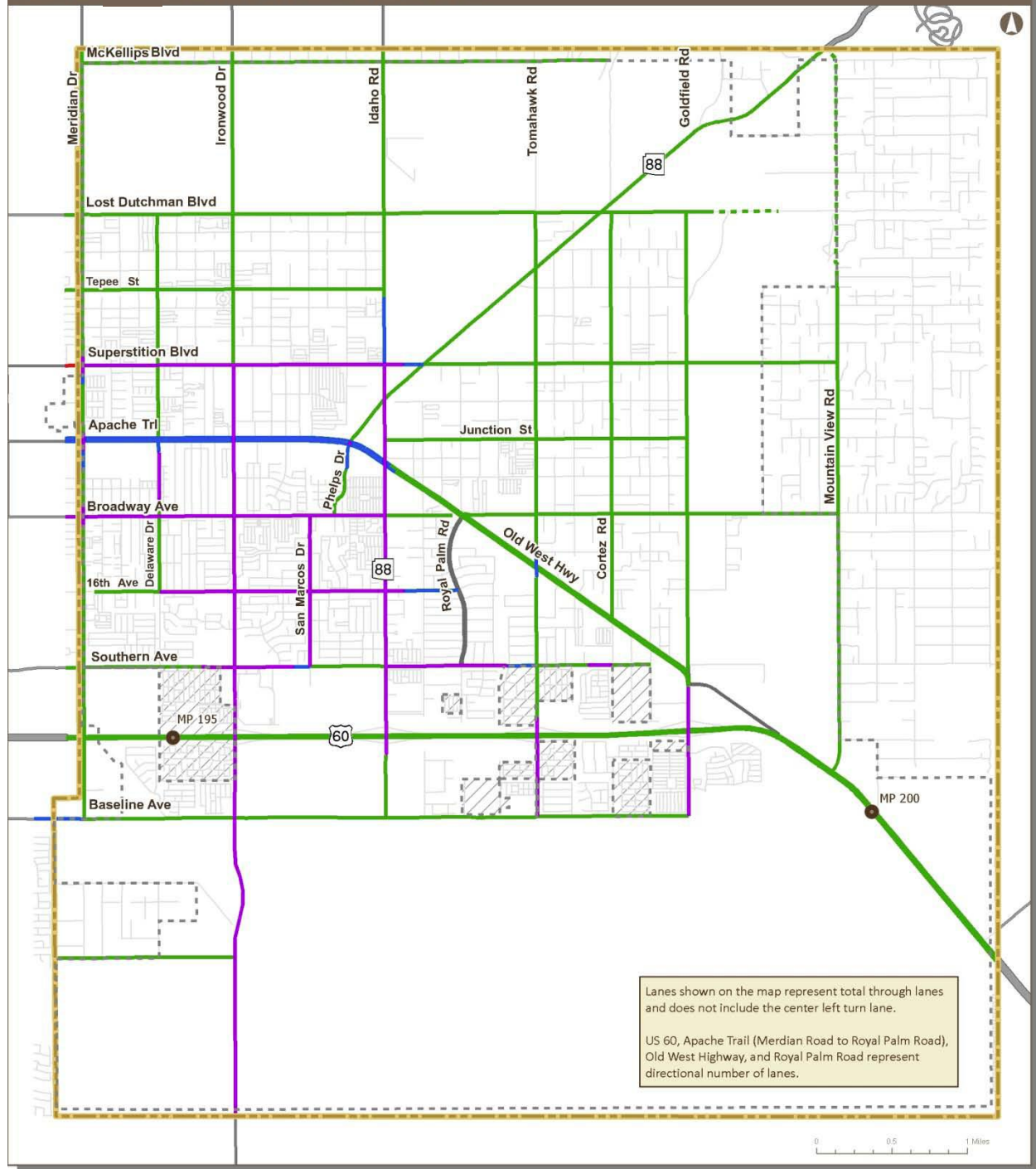
**FIGURE 2.9: EXISTING ROADWAY FUNCTIONAL CLASSIFICATION**



Data Sources: City of Apache Junction, ADOT



**FIGURE 2.10: EXISTING NUMBER OF LANES**

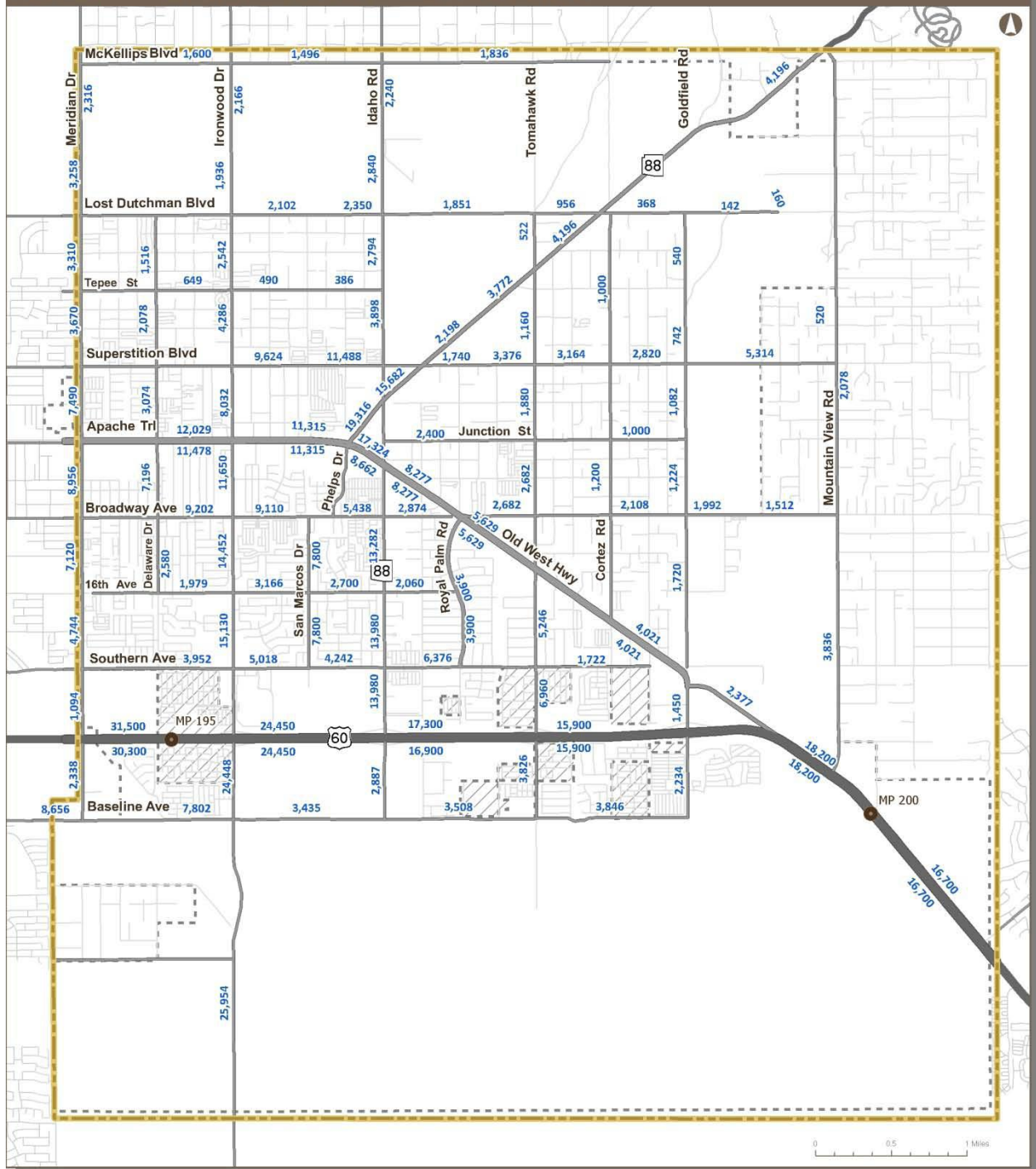


<b>LEGEND</b>		
5 Lanes Paved	2 Lanes Paved	Local Roadway
4 Lanes Paved	2 Lanes Unpaved	City Boundary
3 Lanes Paved	1 Lane Paved	Study Area
		County Island

Data Sources: City of Apache Junction, ADOT



FIGURE 2.11: EXISTING 2010 DAILY TRAFFIC COUNTS



LEGEND

- xxx Traffic Count
- Study Roadway
- Freeway
- Local Roadway
- Study Area
- City Boundary
- County Island

Data Sources: City of Apache Junction, ADOT



### **Non-Motorized Modes of Transportation**

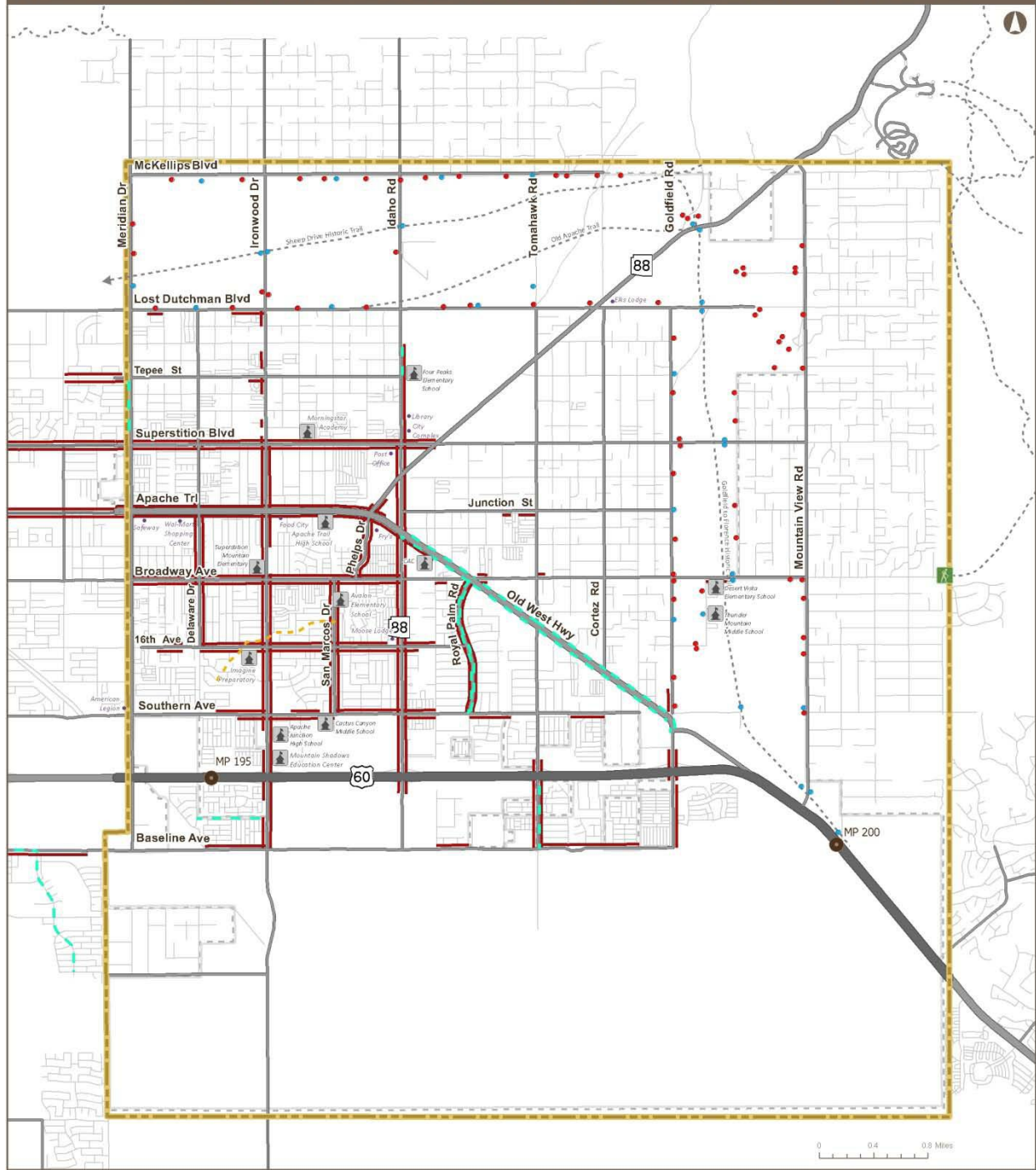
Figure 2.12 illustrates the current pedestrian, bicycle, and trails facilities in the study area. Key observations include:

- ◆ Sidewalks currently exist in the downtown core providing access to activity centers such as schools, shopping centers, post office, and the library.
- ◆ The City has very limited bike paths and bike lanes in both the downtown core and the rural areas.
- ◆ Portions of the study area to the east and the north consist of State and federal lands which are home to several equestrian, hiking, and multi-use trails. Access to these trails is available through several gates along the State and federal lands.





**FIGURE 2.12: STUDY AREA TRAILS WITH EXISTING BIYCLE AND PEDESTRIAN FACILITIES**



**LEGEND**

Trailhead

School

Combination Vehicle/  
Equestrian Gate

Hiking/Equestrian Gate

Existing Multi-Use Path

Multi-Use Trail

Existing Sidewalk

Bike Lane

Freeway

Study Roadway

Local Roadway

Study Area

City Boundary

Data Sources: City of Apache Junction, ALRIS,  
ADOT, USFS, City of Mesa



## Means of Transportation to Work

Table 2-4 shows the means of transportation to work for Apache Junction residents. The percentage of persons who carpool to work in most parts of Arizona is significantly higher than the national average. Moreover, the percentage of Apache Junction residents who carpool to work is even higher than in other parts of the state.

**TABLE 2-4. MEANS OF TRANSPORTATION TO WORK  
FOR WORKERS 16 YEARS AND OVER**

Numbers of Workers							
Area	Total Workers 16 & over	Car, Truck or Van Drove Alone	Car, Truck or Van Carpooled	Total Public Trans.	Walked	Other Means	Worked at Home
Apache Junction	12,392	9,318	2,293	30	237	238	276
Arizona	2,210,395	1,638,752	340,447	41,105	58,015	50,918	81,158
Maricopa County	1,406,442	1,050,341	214,231	29,461	28,888	31,802	51,719
Pinal County	59,992	44,250	10,766	120	1,698	1187	1,980
Percentage							
Area	Total Workers 16 & over	Car, Truck or Van Drove Alone	Car, Truck or Van Carpooled	Total Public Trans.	Walked	Other Means	Worked at Home
Apache Junction	100.00%	75.19%	18.50%	0.24%	1.91%	1.92%	2.23%
Arizona	100.00%	74.14%	15.40%	1.86%	2.62%	2.30%	3.67%
Maricopa County	100.00%	74.68%	15.23%	2.09%	2.05%	2.26%	3.68%
Pinal County	100.02%	73.76%	17.95%	0.20%	2.83%	1.98%	3.30%

Source: Census 2000 Summary File 3, Table P30

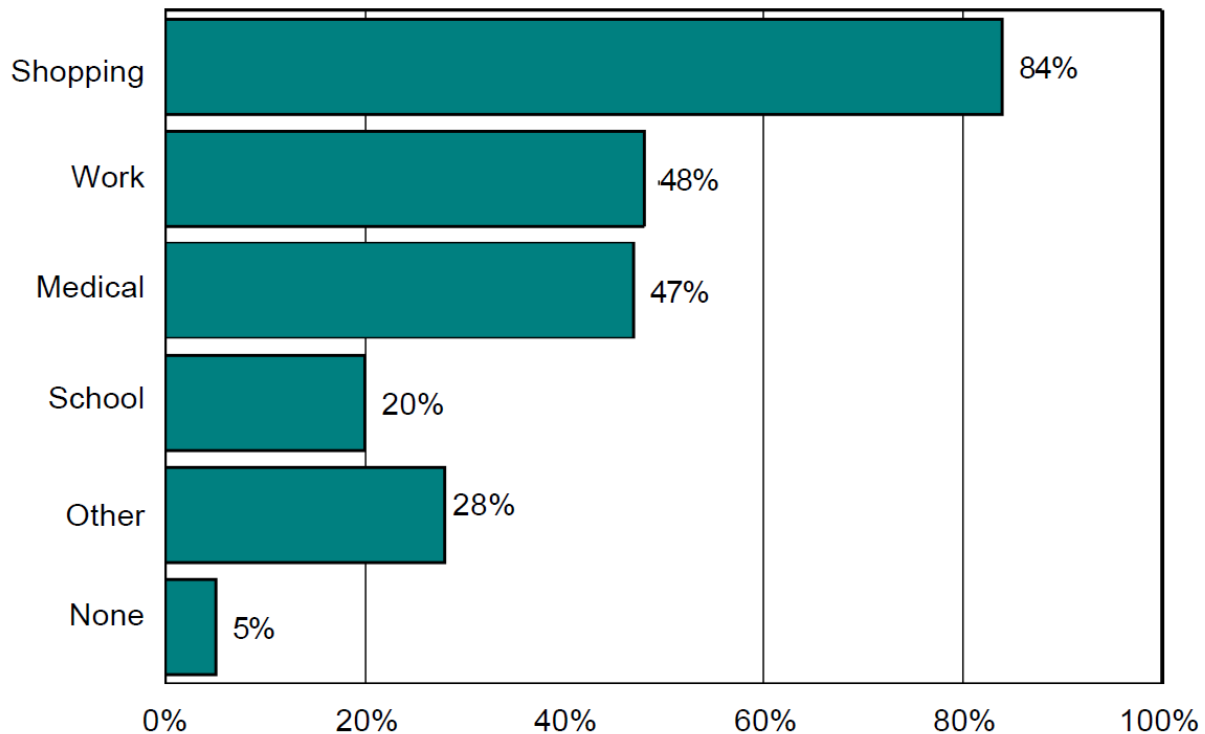
## Types of Trips and Trip Modes

In December, 2003, WestGroup Research was retained by Lima & Associates to conduct a transit preference survey as part of the 2005 Apache Junction Transit Feasibility Study. Most of those who responded to that survey made routine trips for shopping (84%), work (48%), and medical purposes (47%). They usually drove alone or carpool for these trips. About one-fourth routinely carpooled for school, shopping, and school trips. Only 12% of work trips were made by carpool. Respondents were a little more likely to use transit for school trips (48% very or somewhat likely) than other trips – 42% work, 43% shopping, and 45% medical. The consultant believes that, despite, the nine years that have elapsed since the survey was conducted, the results provide an idea of the trip habits of study area residents. Figure



2.13 depicts the survey findings from asking respondents about the types of trips made on a daily or frequent basis.

**FIGURE 2.13:. TYPES OF TRIPS**



Source: WestGroup Research, *Apache Junction Transit Survey*, December 2003

According to WestGroup Research, trips for shopping, work and medical needs were fairly typical of respondents.

- ◆ Shopping trips were spread equally over all demographic sub-groups.
- ◆ Work trips were more prevalent among respondents under the age of 55 (81%), those earning over \$50,000 annually (74%), and those with at least two vehicles (69%).
- ◆ Medical trips were more prevalent among those over age 35 (49%) and those earning less than \$30,000 (55%).
- ◆ School trips occurred more frequently among those under age 35 (56%) and those with at least two vehicles (29%).

Other frequent types of trips include social (12%), errands (8%), church (3%), and visits to family or friends (2%).

Respondents were also asked how they normally made each type of trip. The findings are shown in Table 2.5.



**TABLE 2.5: TRIP MODES**

	Work	School	Shop	Medical
Drive alone	86%	54%	74%	72%
Carpool	12	27	22	23
Walk	1	6	2	1
Bicycle	1	1	1	1
Bus	-	9	-	-
Other	1	-	1	1
Don't know	1	5	1	3

Note: Totals more than 100% due to multiple trip modes in the same household.

Source: WestGroup Research, *Apache Junction Transit Survey*, December 2003

The majority of respondents normally drove alone for all types of trips. Only 12% carpooled for work trips. The bus was used only for school trips (9%).

### POPULATION GROWTH THRESHOLDS

The City of Apache Junction's future growth is a unique situation due to the proposed Portalis Master Plan. If the Portalis Master Plan becomes a reality the population of the City could more than double; however, development time frames for this area are uncertain. To account for this uncertainty, ***Population Growth Thresholds or Population Levels*** have been developed as benchmarks for the transportation plan. These benchmarks will allow the City to plan transportation improvements as each population growth threshold is reached, rather than anticipating improvements for a certain year based on projections that may or may not be accurate.

Three ***Population Levels*** were established based on Central Arizona Association of Governments (CAAG) projections for the study area and Pinal County; and Arizona State Lands Department's build out levels for the Portalis Master Plan area. Table 2.6 outlines the population, number of occupied housing units, and employment numbers for each of the ***Population Levels***.

**TABLE 2.6: POPULATION LEVELS - POPULATION, HOUSING UNITS, AND EMPLOYMENT**

	Population Level 1 (60K)		Population Level 2 (75K)		Population Level 3 (130K)	
	Study Area	Pinal County	Study Area	Pinal County	Study Area	Pinal County
<b>Population</b>	60,000	441,000	75,000	607,000	130,000	1,083,000
<b>Occupied Housing Units</b>	26,000	156,000	31,000	214,000	51,000	380,000
<b>Employment</b>	16,000	108,000	24,000	170,000	43,000	325,000



## EVALUATION CRITERIA AND PROCESS

Transportation system deficiency analysis and input from the public, various stakeholders, and Technical Advisory Committee (TAC) resulted in a comprehensive list of potential transportation improvement options. These options were carefully evaluated using both quantitative and qualitative criteria to identify projects/improvements that best serve the needs of the City of Apache Junction. Table 2.7 summarizes the criteria used in evaluating potential transportation improvement options. In addition, transportation improvements were prioritized and grouped into three categories based on short, mid, and long-term implementation phases.

- ◆ Projects within the short-term phase represent improvements that need to be made as the study area reaches Population Level 1 (60K).
- ◆ Projects within the mid-term phase represent improvements that need to be made as the study area reaches Population Level 2 (75K).
- ◆ Projects within the long-term phase represent improvements that need to be made as the study area reaches Population Level 3 (130K).

Roadway improvement projects were identified by two different categories: capacity related improvement projects and non-capacity roadway improvement projects. Capacity related improvement projects include widening existing roadways and constructing new roadways. Non-capacity related improvements address safety concerns, intersection improvements, and the need to conduct additional planning studies. Capacity-related projects were evaluated using the Countywide TransCAD travel demand model developed for this study.

## EXISTING PUBLIC TRANSPORTATION SERVICES

Subsequent to the completion of the 2005 Study, Greyhound Lines ceased operations along the US 60 corridor in Arizona, including service to Apache Junction. Greyhound intercity bus service in Arizona is currently limited to routes served by interstates. The closest airport to Apache Junction is Phoenix-Mesa Gateway Airport, located less than 16 miles southwest of the City. Driving time to Phoenix-Mesa Gateway Airport is approximately 24 minutes or less, depending upon traffic and the route taken. Phoenix-Mesa Gateway Airport is currently served by Allegiant Airlines only. Allegiant provides less than daily service to most destinations served from Phoenix-Mesa, but does offer competitive fares to many Midwest cities from where Apache Junction's winter visitors originate. A network of freeways connects the Apache Junction area with Phoenix Sky Harbor Airport, and the driving time is approximately 42 minutes, longer at peak travel periods. Sky Harbor is one of the Nation's busiest airports and has frequent flights to a variety of domestic and international destinations. Two



**TABLE 2.7: TRANSPORTATION IMPROVEMENTS EVALUATION CRITERIA**

Evaluation Criteria	Objectives
Safety and Security	<ul style="list-style-type: none"> <li>◆ Reduce vehicle, pedestrian, bicycle collisions.</li> <li>◆ Enhance alternate emergency routes.</li> <li>◆ Reduce emergency response times.</li> </ul>
Congestion/Level of Service	<ul style="list-style-type: none"> <li>◆ Reduce congestion, bottlenecks and travel times for all modes.</li> </ul>
Mobility and Access	<ul style="list-style-type: none"> <li>◆ Improve linkages between transportation modes.</li> <li>◆ Facilitate efficient internal traffic circulation options within the study area.</li> <li>◆ Maintain travel reliability.</li> </ul>
Economic Development Opportunity	<ul style="list-style-type: none"> <li>◆ Promote transportation choices that support economic growth.</li> </ul>
Environmental Impacts	<ul style="list-style-type: none"> <li>◆ Protect and enhance natural, historical, and cultural environment by minimizing potential adverse impacts associated with transportation system development.</li> </ul>
Infrastructure Preservation/Maintenance	<ul style="list-style-type: none"> <li>◆ Preserve and maintain existing transportation infrastructure.</li> </ul>
Cost Efficiency and Implementation Feasibility	<ul style="list-style-type: none"> <li>◆ Minimize capital cost of transportation facilities, including preservation of ROW.</li> <li>◆ Obtain additional ROW.</li> </ul>
Regional Connectivity	<ul style="list-style-type: none"> <li>◆ Enhance connectivity between the study area and nearby communities.</li> </ul>
Transportation choices	<ul style="list-style-type: none"> <li>◆ Promote transportation choices such as pedestrian, bicycle ways, multi-use paths, and transit.</li> </ul>

limousine and shuttle services in the area provide service to and from both Phoenix-Mesa and Sky Harbor and also provide service to medical facilities, sporting events, and special occasions. Valley Metro, the metropolitan area transit system, currently operates no closer to Apache Junction than Power Road, six miles west of the City.

### Limousine and Shuttle Services

- Two Apache Junction-based private-sector operators, Cricket's Shuttle and Cactus Shuttle, currently provide demand-response public transportation service in the area. Both shuttles offer service to either Phoenix Sky Harbor or Phoenix Mesa Gateway Airport, as well as local service to Wal-Mart, Superstition Springs Mall, and a variety of medical appointments. Cricket's Shuttle has been in business for five years and now has five vehicles and six drivers. Business has been growing steadily. Cactus Shuttle has been in business for two years and has one vehicle and two drivers.



- Many of the manufactured home communities operate their own shuttles for the convenience of full-time and seasonal community residents. Such trips include shopping and medical trips, as well as tours to concerts, sporting events, and other special events. A variety of vans and cutaway buses are used for these services.
- Three assisted living facilities, Aurora House, Beehive House, and Horizon Bay, are located within the Study Area. These provide or arrange for medical and other transportation services for their residents. Triple R Behavioral Health maintains a Club House in the Study Area, and provides transportation to and from the Club House for clients.
- The Apache Junction Senior Center provides multi-service transportation to persons who no longer drive. Van service is available to and from the Center, as well as for medical appointments and grocery shopping. The Center also provides “meals on wheels” for persons who are unable to travel to the Center.

### **Services for Older Adults and Persons with Disabilities**

East Valley Senior Services (EVSS) operates three human service transportation programs that are funded by the City of Apache Junction. These programs are: Ride Choice, Coupons for Cabs, and van service.

**Apache Junction RIDE Choice**, (AJRC) offers Mileage Reimbursement for qualified residents of Apache Junction. The program is designed to provide those who are no longer able to drive with a means of reimbursing volunteer drivers of their choosing for driving them to medical appoints and other essential travel. The AJRC does not provide drivers.

Under the **Coupons for Cabs** program, qualified participants may request coupon booklets for a nominal co-pay of \$2.50 for one book having a retail value of \$10. The coupons may be applied toward the cab fare of a participating taxicab company.

In order to qualify for either the RIDE Choice or the Coupon for Cabs programs, an applicant must be a permanent resident of the City of Apache Junction, and either age 60 and over, or an adult between the ages of 18 and 59 with a disability certification and no longer driving.

### **Shopping & Medical Transportation**

The EVSS operates a 9-passenger, accessible van for the benefit of qualified City residents. On Monday, Wednesday, and Friday afternoons, clients will be driven to medical appointments





within the area and as far west as Higley Road in Mesa. On Tuesday mornings, clients are taken to the Southeast Veterans Affairs Health Care Clinic, which is located in the former Williams Air Force Base Hospital (near the Phoenix-Mesa Gateway Airport). Persons with disabilities under age 60 are charged \$2.00, and persons aged 60 and over are encouraged to make a \$2.00 donation for these services.

On alternate Tuesdays, clients are driven to either Fry's or Safeway for grocery shopping. On alternate Thursdays, these trips are made to either Basha's or Wal-Mart. In each case, the driver waits for approximately 90 minutes to allow clients to purchase their groceries before taking them to their homes. The EVSS also transports clients to and from the Senior Center for midday meals.

In addition several providers offer transportation services that are reimbursed through Medicare and other health care insurance mechanisms. These services include AAA Medex and AZ ASSIST Transport, both of which are based in Tempe.



### 3. PREVIOUS STUDIES AND PLANS

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This chapter presents a summary of the recommendations of the Apache Junction Transit Feasibility Study conducted in 2005 by Lima & Associates (2005 Study), together with summaries of pertinent studies that have been conducted subsequent to the 2005 Study,

#### RECOMMENDATIONS OF THE 2005 STUDY

Lima & Associates recommended that the City hire or designate a city transportation coordinator to develop a rideshare program, serve as a clearing house for local and regional public transportation information, and manage the implementation and operation of the transit service. The rideshare program could have two key components, a carpool program and a vanpool program.

The 2005 Study recommended that a deviated fixed route service be implemented in an initial transit service area. Key elements, estimates, and projections relating to the recommended system were:

- Fourteen-mile loop system providing service every half-hour, Monday through Friday to start, nine hours per day.
- Three cutaway style minibuses would be required: two to operate the route and one back-up vehicle. A cutaway is comprised of a minibus body constructed on a recreational vehicle or elongated van chassis.
- Start-up capital costs including the vehicles, stops and shelters, a maintenance facility, and a transit center were estimated at \$943,205, \$149,641 of which would be provided by the City. Significant cost savings could result if an existing maintenance facility is used, or if the transit center is programmed for construction at a later date.
- First-year operating and administration costs were estimated at \$423,072; of this, \$154,252 would be a local match.
- First-year ridership was estimated at 60,205.
- When Valley Metro fixed routes expand into the area, the initial service could be restructured as one or more neighborhood or commercial area circulators providing both local service and connections to the regional routes.
- The Americans with Disabilities Act requires that complementary paratransit service be operated in conjunction with fixed route service. The City may want to consider becoming a partner with other East Valley Cities that currently contract with East Valley Dial-a-Ride for this service.
- The concept of establishing a regional transit center should be examined. One



possible location for this center would be near the traffic interchange of US 60 and Idaho Road.

- As outlying developments reach population and density levels that warrant transit service, transit could be introduced to these areas in the form of peak-hour express or commuter buses that would connect with other local or regional services at the transit center.
- Candidate locations for future park-and-ride lot facilities have been suggested.

#### **PERTINENT STUDIES AND PLANS THAT HAVE TAKEN PLACE SUBSEQUENT TO THE 2005 STUDY**

The 2005 Study contained summaries of the following studies and plans that had been conducted before that study:

- ◆ *Apache Junction General Plan, 1999*
- ◆ *Apache Junction Transportation/Transit Study, 1998*
- ◆ *Southeast Maricopa/Northern Final County Area Transportation Study, 2003*
- ◆ *MAG High Capacity Transit Study, 2003*
- ◆ *Valley Metro Regional Transit Systems Study, 2003*

Summaries of area studies that have been conducted subsequent to the 2005 Study follow:

#### **Pinal County Transit Feasibility Study, April 2011**

The Pinal County Transit Feasibility Study was conducted by Nelson Nygaard Consulting Associates in association with Jacobs Engineering Group. The Study evaluated local and regional transit options for the County as a whole as well as for major urban areas within the County including Apache Junction. The Study recommended the following for the Apache Junction area: (See Figure 3.1)

- ◆ **Transit center near the intersection of Apache Trail and Ironwood Road.** According to the Pinal County study, this location would function as a park-and-ride facility and a terminal for arterial BRT service between Apache Junction and the end of the Metro light rail line in Mesa. This park-and-ride facility could also serve as a stop on an express bus route between San Tan Valley and Phoenix via Apache Junction, as well as a transfer point to/from local services within Apache Junction.
- ◆ **Express bus service between San Tan Valley and Phoenix via Apache Junction.** This service would originate at a San Tan Valley park-and-ride facility, entering the Apache Junction area on Ironwood Road from the South. From Apache Junction, this service would travel on the Superstition Freeway to the Superstition Springs Transit Center, where it would connect with arterial BRT and express routes into the Phoenix area.



**FIGURE 3.1: AREA SERVICES PROPOSED BY PINAL COUNTY TRANSIT FEASIBILITY STUDY**

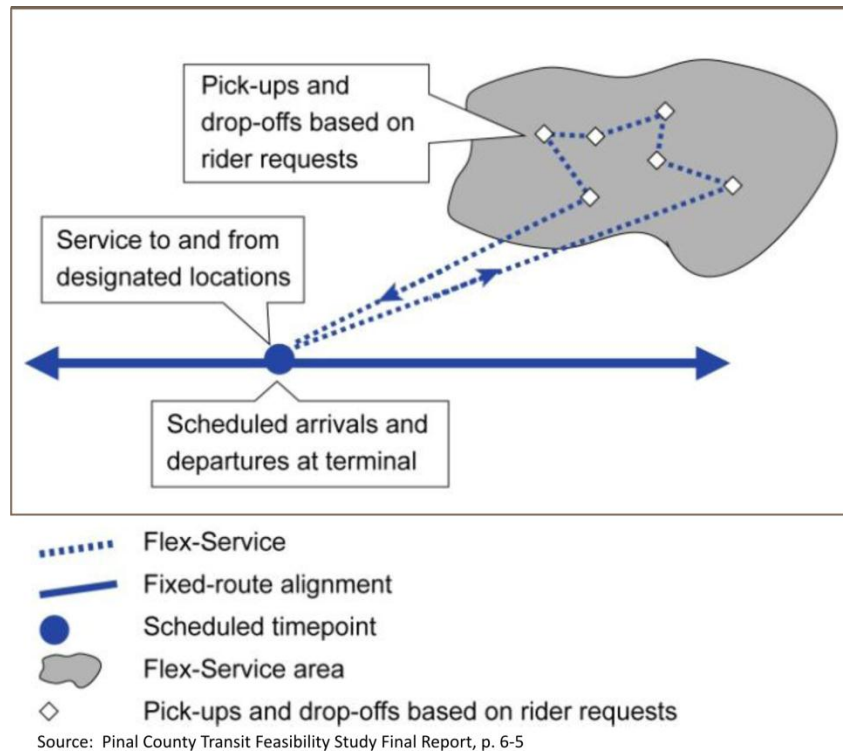


Source: Pinal County Transit Feasibility Study, Figure 6.4 Detail

◆ **Regional and local bus service to, from, and within Apache Junction:**

- ✓ Extension of Valley Metro Route 40, which currently operates between the Tempe Transit Center and the Superstition Springs park-and-ride, east along Main Street/Apache Trail to Apache Junction.
- ✓ Within Apache Junction, the Pinal Transit Study recommends “flex service” that would function like deviated fixed route service within a defined service area. (See Figure 3.2) The service area recommended by the Study would be bounded by Lost Dutchman Road on the North, Idaho Road on the East, Superstition Freeway on the South, and the Apache Junction city limits (Meridian Road) on the West. Flex service would serve the transit center where connections could be made with arterial BRT and the express bus route.

**FIGURE 3.2: PINAL COUNTY TRANSIT FEASIBILITY STUDY FLEX ROUTE CONCEPT**



### **Pinal County Small Area Transportation Study, Transit Element, 2006**

The Pinal County Small Area Transportation Study was conducted by Kirkham Michael Consulting Engineers in association with Lima & Associates. The Transit Element was completed in August 2006. Existing transit needs as of that date were documented in the Transit Element as follows:

- ◆ Unmet needs for transit service within local jurisdictions in Pinal County, as well as regional service throughout the County, exist due to the large numbers of potentially transit dependent persons living in the area and the high number of persons who carpool to work.
- ◆ A future unmet need for commuter bus and/or rail service between Pinal County communities and Phoenix and Tucson may exist, and such service has already been identified in several area general plans including the Town of Florence, the City of Maricopa, and the Town of Queen Creek.
- ◆ As the populations of the local jurisdictions themselves increase, cities such as Apache Junction and Maricopa may choose to follow Coolidge's lead and provide local circulator service.
- ◆ A coordinated effort is needed to address transit needs identified in previous studies.

- ◆ Existing local fixed route transit services are needed. Of all the local jurisdictions within the County, only the City of Coolidge operates a scheduled transit service. Transit feasibility studies for the City of Apache Junction and City of Casa Grande indicated a need to implement local public transit service in the two communities.
- ◆ Additional regional and intercity transit services are needed. Existing carriers such as Greyhound have cut back services to County communities, and no new carriers have entered the market.
- ◆ Existing Amtrak service through the County is infrequent and seldom runs on schedule.

Findings with respect to future conditions in Pinal County were summarized as follows:

- ◆ Within the next twenty years, due to population growth both within Pinal County itself and the Phoenix metropolitan area, the County will likely need both transportation demand management and several forms of public transportation
- ◆ Opportunities in the County include the potential for using senior-oriented programs for initial transit services, the development of a ride-sharing program, and the development of multimodal transit centers
- ◆ Constraints include auto-oriented developments and the uncertain futures of existing carriers such as Greyhound and Amtrak
- ◆ Portions of County urban areas will meet or exceed accepted demographic thresholds for implementing bus service by 2025
- ◆ Sunbelt counties with populations and demographics resembling those forecasted for Pinal County in 2025 offer a wide variety of transit services including local, regional, and express bus services, and commuter rail service.
- ◆ Proactively plan for the introduction of future transit services.
- ◆ A variety of federal, state, and local programs exist for funding transit improvements

The study described future transit deficiencies and needs, as well as demographic thresholds that would lead to the implementation of transit service. The need for transit centers and the encouragement of more transit-friendly residential development were discussed, and scenarios for local circulator service and regional bus and rail services were presented. The findings and recommendations of this Transit Element led to the County's decision to move forward with a comprehensive transit study, which is currently being conducted by Nelson Nygaard in association with Jacobs.



## Pinal County Comprehensive Plan Update

The *Pinal County Comprehensive Plan Update* was adopted November 18, 2009. Lima & Associates was associated with the project and was responsible for the Mobility and Connectivity Element of the plan. The plan surveyed existing multimodal conditions within the County, anticipated future conditions based on the rapid rate of growth that had occurred in the County prior to the onset of the recession, and recommended multimodal goals, objectives, and policies for adoption by the County as follows:

### 4.2 Goal: Create a comprehensive multimodal system.

#### 4.2.1 Objective: Develop additional transportation modes for a balanced mobility system.

##### Policies:

- 4.2.1.1 Conduct studies to determine the appropriate type(s) and timing of transit within identified corridors as appropriate population and employment density thresholds are reached.
- 4.2.1.2 Provide an enhanced public transportation system (local transit, carpool and park-and-ride lots, express bus or BRT, intercity bus, and commuter/intercity rail) that provides connections within the County and throughout the region.
- 4.2.1.3 Support implementation of Phoenix-Tucson intercity passenger rail service.
- 4.2.1.4 Work with ADOT and UPRR to identify appropriate Pinal County passenger/commuter rail station location(s).
- 4.2.1.5 Preserve sites for a suitable array of transit centers in the unincorporated County areas and coordinate with the cities and towns development of other transit centers.
- 4.2.1.6 Work with ADOT, UPRR, Maricopa Association of Governments (MAG), Pima Association of Governments (PAG), Central Arizona Association of Governments (CAAG) and other stakeholders to add commuter rail service from Pinal County to locations in both the Phoenix and Tucson metropolitan areas.
- 4.2.1.7 Encourage Pinal County's development patterns to support a diverse range of travel modes (single-occupant vehicle, multi-occupant auto, pedestrian, bicycle, and public transit), and that the system is designed to effectively meet regional and local mobility needs.
- 4.2.1.8 Provide connectivity between cities and towns, the Aviation-Based Commerce Center and other major activity centers.
- 4.2.1.9 Provide safe and efficient connections between modes to maximize opportunities for Pinal County.
- 4.2.1.10 Act now to preserve sufficient rights of way for adequate corridors to be constructed as regionally significant roadways, high capacity transit routes, or multimodal alignments as demand warrants.
- 4.2.1.11 Work with the ASLD to protect the site of the potential commercial airport for future use.
- 4.2.1.12 Develop and implement an action plan that outlines the planning process to study the feasibility and development of the commercial airport.





- 4.2.1.13 Require provision of sufficient right of way on major arterials, particularly those deemed to be of regional significance, for the future addition of high capacity vehicle lanes or transit corridors.
- 4.2.1.14 Require provision of sufficient right of way on collector streets for bicycle lanes and multi-use paths.
- 4.2.1.15 Encourage shade and landscaping along sidewalks and multi-use paths, as opposed to bare block or stucco walls that radiate more heat at pedestrian and bicyclist level.
- 4.2.1.16 Provide bus benches and shelters in areas to be served by local routes.
- 4.2.1.17 Strive for a “seamless” multimodal network providing convenient linkages and connectivity between all modes.

### **Statewide Transportation Planning Framework Study, 2010**

The Statewide Transportation Planning Framework Study was initiated in response to the Governor’s Executive Order 2007-02: Expanding Arizona’s Transportation Options. The study developed new strategies and investments needed to improve the mobility of Arizona residents and visitors through urban and rural highway, transit, and rail programs. To respond to the intent of the Executive Order, broad program categories were developed. Those pertinent to the City of Apache Junction are as follows:

- ◆ Mass transit –bus and bus related programs
  - ✓ Connecting Communities
  - ✓ Enhancing Rural Transportation Programs
  - ✓ Serving Elderly/Disabled and Tribal populations
  - ✓ Sharing rides and Vanpooling
  - ✓ Building State Infrastructure
  - ✓ Planning, Marketing, and Other Programs

Apache Junction lies within in Pinal County, of which the transportation needs were addressed in the Central Arizona Framework Study. However, the City is on the edge of the Phoenix Metropolitan Area, whose transit needs were examined in the MAG Regional Transit Framework Study. The highlights of the recommended scenario for both these regions are listed in Table 3-1.



**TABLE 3.1: HIGHLIGHTS OF RECOMMENDED SCENARIO BY REGION**

Proposed Transit and Rail Improvements	Region
New express bus route system	Central
Intercity bus routes connecting communities	Statewide
Transit centers in strategic locations	Statewide
Develop or improve local transit systems in urban areas	Statewide
Phoenix-Tucson intercity rail, connecting to commuter rail in MAG and PAG areas	Sun Corridor

Source: ADOT Statewide Transportation Planning Framework Study

### Valley Metro 2007 Origin And Destination Study

This study was conducted by Valley Metro with consultant support from NuStats. A total of 7,600 surveys of riders of fixed-route bus services were conducted from October 8 through December 18, 2007. The objectives of the study were to examine ridership demographics together with travel behavior characteristics. Some key findings of the study were:

- ◆ Transit Riders are more likely to be from low-income households. Almost three in four riders belong to households earning less than \$35,000.
- ◆ About half of all transit riders are transit-dependent, i.e., they belong to households that do not own any vehicles.
- ◆ Two out of every three riders are employed.
- ◆ Riders are primarily in the 25 to 54 years of age; young riders in the age range of 18-24 form the second largest group.
- ◆ The majority of trips made by riders originate or end at home or work; 44% of riders make home-based work trips using transit, while 40% make home-based non-work trips.
- ◆ Walking is the dominant access and egress mode for all riders; more than three-fourths of the riders walk access and egress.
- ◆ Nearly two-third of riders make at least one transfer to complete their one-way trip.
- ◆ In the absence of transit service, almost one-third of the riders report that they would not make the trip.
- ◆ Bus Book is the primary source of bus schedule information used by two-third of the riders.

The demographics of Valley Metro riders were compared with those of the general population residing in the study area. Key findings from this comparison were:

- ◆ Transit riders are more likely to be from larger, low-income, and zero-vehicle households.



- ◆ Riders are more likely to be employed.
- ◆ Riders are more likely to be 18 to 54 years of age.

The study also found that riders were more transit-dependent in 2007 than in 2000 due to declining automobile ownership and use of transit for a wider variety of destinations other than home or work.

### **Valley Metro Regional Paratransit Study, 2006**

The Regional Paratransit Study was conducted in October, 2006 for Valley Metro by TranSystems Corp., RLS & Associates, Inc., and Gunn Communications, Inc., and was a comprehensive study of the region's paratransit services. The goals of the study were to:

- ◆ Assess each of the paratransit programs in the region, as well as the taxi subsidy and mileage reimbursement programs, identify ADA and non-ADA operational issues and needs, and propose operational or policy recommendations that serve to reduce or contain costs, improve service levels and meet ADA, non-ADA and other specialized transportation needs.
- ◆ Define the operational and administrative characteristics of a regional paratransit program, and identify the potential benefits and corresponding challenges of development of a regional program to RPTA, its members and system users.

Field views of the eight major community and county-based paratransit programs were conducted and service data on fare policies, reservation policies, ridership demographics, operating costs, sources of funding, and other aspects of each service was gathered and analyzed. (See Table 3-2) Paratransit service data was also gathered from 11 peer systems for comparison. Stakeholder outreach was conducted to identify unmet needs for each of the eight service areas. Service hour gaps and other service needs for the East Valley are depicted in Table 3-3.

### **Flagstaff Five Year Transit Plan, 2005**

The Flagstaff Five Year Transit Plan was conducted by Nelson-Nygaard Consulting Associates prior to the implementation of the Northern Arizona Intergovernmental Public Transit Authority (NAIPTA) and a significant expansion of Flagstaff's Mountain Line transit service. The study recommend a five-year Transit Improvement Plan for fiscal years 2005/06 through t009/10. Unmet transit needs in the study area were identified, and the operations of the Mountain Line fixed route bus system, the VanGo paratransit service, and the NAU circulator service were



**TABLE 3.2: DIAL-A-RIDE PROGRAM AND STS COST PERFORMANCE INDICATORS, FY2006**

	East Valley DAR	El Mirage DAR	Glendale DAR	Peoria DAR	Phoenix DAR	STS	SCAT	Surprise DAR	TOTALS
Total operating cost	\$6,717,959	\$81,486	\$2,387,554	\$977,312	\$12,439,977	\$1,545,686	\$689,473	\$391,804	\$25,231,251
Total boardings	220,153	1,466	89,055	42,560	409,037	82,025	57,091	12,578	913,965
Total trips	207,582	1,466	84,606	42,560	376,883	82,025	57,091	12,578	864,791
Total vehicle revenue hours	121,607	1,613	29,594	12,038	283,516	49,313	21,802	6,554	526,037
Total vehicle revenue miles	1,796,728	12,284	390,561	159,903	4,235,962	763,018	230,472	86,045	7,674,973
Operating cost per boarding	\$30.51	\$55.58	\$26.81	\$22.96	\$30.29	\$18.84	\$12.08	\$31.15	\$27.61
Operating cost per trip	\$32.36	\$55.58	\$28.22	\$22.96	\$32.87	\$18.84	\$12.08	\$31.15	\$29.18
Operating cost per veh. rev-hr.	\$55.24	\$50.52	\$80.68	\$81.19	\$43.70	\$31.34	\$31.62	\$59.78	\$47.96
Operating cost per rev-mile	\$3.74	\$6.63	\$6.11	\$6.11	\$2.92	\$2.03	\$2.99	\$4.55	\$3.29
Productivity (boardings/rev-hr)	1.8	0.9	3.0	3.5	1.4	1.7	2.6	1.9	1.7
Rev-Miles per trip	8.7	8.4	4.6	3.8	11.3	9.3	4.0	6.8	8.9

Source: Valley Metro Regional Paratransit Study



**TABLE 3.3: EAST VALLEY DIAL-A-RIDE SERVICE HOUR GAPS AND POTENTIAL NEEDS**

Community	Hours Sufficient for Basic Shop/Personal (some reasonable weekday hours)		Hours Sufficient for Basic Employment (M-F, 6am to 6pm)		Weekday Evenings		Saturdays		Sundays	
	ADA Areas and Riders	Other Areas and Riders	ADA Areas and Riders	Other Areas and Riders	ADA Areas and Riders	Other Areas and Riders	ADA Areas and Riders	Other Areas and Riders	ADA Areas and Riders	Other Areas and Riders
Chandler	●	●	●	●	●	○	●	●	○	○
Gilbert	●	●	●	●	●	○	●	●	○	○
Guadalupe	●	○	●	○	●	○	●	○	●	○
Mesa	●	○	●	○	●	○	●	○	●	○
Scottsdale	●	●	●	●	●	●	●	●	●	●
Tempe	●	●	●	●	●	●	●	●	●	●

Source: Valley Metro Regional Paratransit Study





assessed and improvements recommended. Financial plans for the three services were developed, together with plans for County-funded commuter express and vanpool operations.

Over the five-year period (2001-2005) examined by the study, Mountain Line's average passengers per hour increased by nearly 75 percent. During the same period, Mountain Line's farebox recovery ratio (FBR) increased from 10.3 percent to 14.8 percent.

#### **Valley Metro Short Range Transit Program—FY 2009/10 – 2014/15**

Valley Metro developed the Short-Range Transit Program (SRTP) to identify regional transit service and capital improvements programmed for Fiscal Years 2009 through 2014/15. The Program also supports regional transit projects included in MAG's Regional Transportation Plan (RTP). The objectives of the SRTP include:

- ◆ Document transit service performance from the previous fiscal year;
- ◆ Maintain an inventory of the region's transit capital infrastructure; and,
- ◆ Identify considerations for service adjustments and capital facility needs based on the programmed regional transit investments identified in the RTP and TLCP.



## 4. TRANSIT CHARACTERISTICS OF PEER COMMUNITIES

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This chapter summarizes the review and analysis of data from peer communities that currently operate some form of fixed route transit service. In reality, each community has differences in demographics, density, setting, and topography that make it unique. However, reviewing the transit services provided by cities that are in the same population and square mileage range as Apache Junction is one approach for developing baselines for parameters such as service hours, fleet size, capital and operating costs per capita, and so forth. None of these peer cities currently operates any light rail or streetcar service.

Note that some of these peer cities are “stand-alone” communities and not located in or near a large metropolitan area. The consultant endeavored to identify additional peer communities whose location within or near a large metropolitan area was more analogous to that of Apache Junction. However virtually all such cities provide funding to a regional transit system to obtain service—just as Apache Junction may participate in Valley Metro RPTA in the future—and meaningful disaggregated data regarding specific transit routes or route segments for peer evaluation was not available from the National Transit Database.

As discussed in Chapter 2, although Apache Junction has grown in size as well as population since incorporation, nearly all of the population is concentrated in a 15.67 square mile core area. For comparison with the peer city data, Apache Junction metrics are restated in Table 4-1.

**TABLE 4.1. APACHE JUNCTION METRICS FOR COMPARISON**

Estimated 2010 Study Area Population	50,964
Study Area Square Miles	44.06
Study Area Population Density per Square Mile	1,157.00
Metropolitan Statistical Area (MSA)	Phoenix-Mesa-Scottsdale, AZ
Population of MSA (July 2009)	4,364,094
Distance of Study Area from Center of MSA (miles)	35

Data presented in this chapter was obtained from the National Transit Database for 2008. This database, in turn, reflects data reported by transit operating agencies to the Federal Transit Administration (FTA) as a provision for qualifying for federal assistance administered by the



FTA. Table 4.2 lists the key fixed-route service characteristics of each peer city service, and Table 4.3 lists the key service performance measures.

**TABLE 4.2: PEER COMMUNITY COMPARISON –  
KEY FIXED ROUTE TRANSIT SERVICE CHARACTERISTICS**

	Service Area Population 2000	Service Area Sq. Mi.	Total Operating Expense 2008	Passenger Miles 2008	Unlinked Trips	Vehicle Revenue Hours	Vehicle Revenue Miles	Fares Collected
Beloit, WI-IL	35,573	16	\$1,852,116	1,326,588	314,346	21,464	323,787	\$217,786
Bettendorf, IA	30,976	21	\$1,096,565	707,948	178,438	21,049	298,800	\$64,270
Danville, VA	53,056	44	\$1,170,441	1,193,796	229,905	22,085	263,833	\$228,172
Grand Forks, ND	49,425	14	\$2,090,786	1,365,452	358,685	60,871	374,692	\$309,577
Jackson, TN	52,810	40	\$2,793,110	2,565,090	535,656	56,598	555,425	\$585,348
Logan, UT (2007)	35,000	18	\$2,395,607	3,620,708	1,119,314	43,778	574,672	\$0
Longview, WA-OR	46,210	21	\$2,376,194	1,673,714	408,151	32,561	214,747	\$131,521
Parkesburg, WV-OH (2003)	49,910	14	\$1,728,639	778,921	273,899	36,904	443,880	\$137,076
Rome, GA	30,326	24	\$2,810,487	4,494,874	674,465	46,482	472,359	\$625,746
San Luis Obispo, CA	50,305	12	\$3,380,541	10,006,839	1,003,695	33,760	381,608	\$516,397
Wausau, WI	44,475	25	\$4,024,997	3,343,372	884,689	60,298	569,706	\$635,294

Source: 2008 National Transit Database

**TABLE 4.3: PEER COMMUNITY COMPARISON –  
KEY FIXED ROUTE TRANSIT SERVICE PERFORMANCE MEASURES**

	Passengers per Revenue Mile	Passengers per Revenue Hour	Service Hours per Capita (in Service Area)*	Boardings per Capita (in Service Area)*	Cost per Hour	Cost per Boarding	Farebox Ratio
Beloit, WI-IL	1.03	14.65	1.66	8.84	\$86.29	\$5.89	11.76%
Bettendorf, IA	1.67	8.48	1.47	5.76	\$52.10	\$6.15	5.86%
Danville, VA	1.15	10.41	2.40	4.33	\$53.00	\$5.09	19.49%
Grand Forks, SD	1.04	5.89	0.81	7.26	\$34.35	\$5.83	14.81%
Jackson, TN	1.04	9.46	0.93	10.14	\$49.35	\$5.21	20.96%
Logan, UT (2007)	0.51	25.57	0.80	31.98	\$54.72	\$2.14	0.00%
Longview, WA-OR	0.53	12.53	1.42	8.83	\$72.98	\$5.82	5.53%
Parkesburg, WV-OH (2003)	1.62	7.42	1.35	5.49	\$46.84	\$6.31	7.93%
Rome, GA	0.70	14.51	0.65	22.24	\$60.46	\$4.17	22.26%
San Luis Obispo, CA	0.38	29.73	1.49	19.95	\$100.13	\$3.37	15.28%
Wausau, WI	0.64	14.67	0.74	19.89	\$66.75	\$4.55	15.78%

\*Number of service Hours or number of boardings per service area population

Source: Calculated from 2008 National Transit Database data

Note that the latest year for which data was available for Logan, Utah, was 2007, and that for Parkersburg, West Virginia, was 2003. Not surprisingly, Logan, a university town which does



not charge riders for its service, had the highest number of unlinked trips, as well as the highest number of boardings per capita. The Danville, Virginia, and Jackson, Tennessee, systems, which serve an area as large as the study area, had two of the higher farebox recovery ratios—the percentage of the total cost of operating the systems that is covered by the fares collected.

### **The Danville Experience**

The consultant corresponded with Marc Adelman, the Transportation Services Director for the City of Danville, Virginia. A study conducted for the City in 2009 confirmed that Danville Transit maintained a high farebox recovery ratio compared to other cities surveyed by the study. According to Mr. Adelman, this is true because the “transit system is extremely cost effective due to staffing levels and vehicle use.” (*E-mail from Marc Adelman to Robert H. Bohannon, June 7, 2012*) In addition to managing the transit system, Mr. Adelman also manages the City’s airport, for example. He further explains:

Also, the system maintains a very small administrative staff. We have one (1) full time supervisor, one (1) operations assistant, one (1) account clerk and one (1) clerical supervisor who splits her time between transit and the airport as well. All of us multi-task to accomplish daily responsibilities. The operations assistant, account clerk and supervisor answer the phone, dispatch and work with automated scheduling software simultaneously. Also, another important factor with cost containment is the fact that our paratransit service has declined greatly since FY93 when I arrived in Danville. This is partially due to the fact that Danville’s population has declined over the last 10 years and persons with disabilities sometimes opt to use the Senior Transportation service which is funded primarily with Aging funds. On the vehicle side, we previously operated heavy duty coaches but began replacing them with light and medium duty body on chassis buses in 1995. This arrangement has helped out with fuel costs significantly and maintenance cost as well since we replace two to four vehicles each year. Also, some of the vehicles have aided with our spare ratio situation because we can use 20 passenger buses in both fixed route and demand response service. We operate 20 and 28 passenger body on chassis buses. (*Ibid., June 7, 2012*)

On the revenue side, passenger revenue has increased from \$230,000 in FY09 to \$300,000 + (estimated) for FY12. ...[M]any variables are involved with increasing revenue. Last fiscal year (FY11) our revenue was \$274,000 and in October of this fiscal year we increased our dial a ride fare from \$3 to \$4 and fortunately did not lose any passenger trips. The dial a ride service began in 2000 with the aim of supplementing



fixed route service hours (6 am – 6 pm). This was the first fare increase since 1995. Over the past 12 years we have maintained fixed route service hours but expanded the dial a ride service greatly which now operates 21 hours a day, six days a week. In 2000 we operated the dial a ride service just in the early morning from 4 – 6 am and from 5 pm until 1 am. For FY10 and FY11, passenger revenue increased to \$253,000 and again to \$274,000 by keeping the fixed route fare constant while fuel prices spiked and a significant increase in demand for dial a ride service contributed to this situation. It is important to note that the success of the dial a ride service is related to the fact that the vast majority of trips are work trips. Also, since the major employer closed its doors several years ago new industry and business have developed in remote areas of Danville which has aided in spurring demand for door to door service. (*Ibid.*, June 7, 2012)

For FY13, we are merging with Senior Transportation and by FY14 we will become a 5311 property since we are no longer an urbanized area. Our ability to merge with the senior program is due to the fact that we built out our dial a ride service over the last 10 years. The merger will also be supported by our use of automated scheduling software.

Table 4.4 presents a summary of the funding sources for the peer communities. These include both annual operating expenses and annual capital improvement programs. Note that Logan, Utah, receives no state assistance. The Utah Department of Transportation administers the Federal Transit Administration grant programs for that state just as ADOT administers them for Arizona. The database does not specify what sources are included in “Other”—in the case of San Luis Obispo, this source appears to be the Regional Transit Authority of San Luis Obispo County.

**TABLE 4.4: PEER COMMUNITY TRANSIT FUNDING SOURCES**

	Federal	State	Local	Other	Total
Beloit, WI-IL	\$637,097	\$493,203	\$506,578	\$350,552	1,987,430
Bettendorf, IA	\$218,406	\$197,550	\$616,521	\$76,595	1,109,072
Danville, VA	\$708,294	\$240,778	\$355,689	\$276,697	1,581,458
Grand Forks, SD	\$788,263	\$206,596	\$611,203	\$509,159	2,115,221
Jackson, TN	\$708,767	\$669,780	\$1,008,584	\$635,182	3,022,313
Logan, UT (2007)	\$203,247	\$0	\$2,054,432	\$137,928	2,395,607
Longview, WA-OR	\$1,112,114	\$67,763	\$1,116,490	\$183,416	2,479,783
Parkesburg, WV-OH (2003)	\$629,010	\$2,226	\$808,591	\$144,406	1,584,233
Rome, GA	\$1,278,537	\$60,811	\$1,460,241	\$644,012	3,443,601
San Luis Obispo, CA	\$770,000	\$1,598,100	\$0	\$1,012,440	3,380,540
Wausau, WI	\$1,264,799	\$1,198,039	\$888,816	\$690,620	4,042,274

Source: 2008 National Transit Database



Other than San Luis Obispo, the lowest amount of local funding provided in Fiscal 2008 was \$355,689 in Danville, Virginia. The highest amount of local funding was \$2,054,432 provided by Logan, Utah, which receives no state support and does not charge fares.

### PEER CITY OPERATING PRACTICES

Additional research was conducted to identify some of the key operating practices of peer cities prior to the development of a hypothetical system for Apache Junction, including the headway, or frequency with which the buses operate, the hours of service, and the days of the week when service is provided. The findings from this research are presented in Table 4-5. In addition, during a visit to one of the peer cities, Bettendorf, Iowa, the consultant conducted a field view of their transit operation and interviewed the transit director.

Standard practice among transit systems serving communities the size of Apache Junction is to provide service approximately 12 hours per day, Monday through Saturday. Service is not provided on Sundays, nor on major holidays such as New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. Nor is evening service provided, although the consultant believes that the provision of evening service is a significant factor in attracting choice riders to the system.

Practices of peer city operations with respect to how transfers between buses are handled varies: Some provide free transfers; some do not. One operation, in Logan, Utah, charges no fares at all. Most systems charge nominal fares, with steep discounting for seniors and students. Peer transit systems tend to operate hub and spoke—or often “hub and loop”—type route networks as opposed to the grid system operated by Valley Metro. Smaller Arizona operations such as those in Coolidge, Flagstaff, Kingman, and Sierra Vista also operate routes that are loops rather than lines operating up and back the length of a particular roadway. Most peer systems—and smaller Arizona systems—make use of one or more centrally located transit centers or hubs.

As Figure 4.1 shows, Bettendorf, Iowa has a very simple transit center whose furniture consists of a portable toilet and a glass-enclosed shelter. Attractive landscaping is provided. Space constraints do not permit park-and-ride facilities, however the downtown location is within walking distance of commercial and higher-density residential areas. Bettendorf's mini-buses are equipped with bike racks.





**FIGURE 4.1: BETTENDORF, IOWA TRANSIT CENTER**



Source: R. H. Bohannon & Associates



**TABLE 4.5: PEER COMMUNITY COMPARISON –KEY FIXED ROUTE TRANSIT OPERATING PRACTICES**

Peer Agency	Days of Operation	Routes Operated	Typical Peak Hour Headway	First Weekday Trip	Last Weekday Trip	Local Fares Adult/Senior	Transfers
Beloit, WI-IL	Mon. – Sat.	4	40 min.	6:00 AM	5:20 PM	\$ 1.25/\$ 0.60	One per ride
Bettendorf, IA	Mon. – Sat.	5	30 min.	6:00 AM	6:00 PM	\$0.60/\$0.30	No
Danville, VA	Mon. – Sat.	11	70 min.	6:00 AM	5:00 PM	\$1.00/\$0.50	No
Grand Forks, ND	Mon. – Sat.	8	60 min.	6:30 AM	6:30 PM	\$1.50/\$0.60	Free for next bus
Jackson, TN	Mon. – Sat.	8	30 min./60 min.	6:00 AM	10:30 PM	\$1.00/\$0.50	Free
Logan, UT	Mon. – Sat.	11	60 min.	6:00 AM	8:30 PM	Free	Free
Longview, WA-OR	Mon. – Sat.	5	60 min.	7:00 AM	6:00 PM	\$ 1.20/\$ 0.60	No
Parkesburg, WV-OH	Mon. – Sat.	6	30 min.	5:50 AM	6:00 PM	\$0.50/\$0.25	No
Rome, GA	Mon. – Fri.	5	60 min.	5:45 AM	6:30 PM		
San Luis Obispo, CA	Mon. – Sat.	7	30 min./40 min.	6:30 AM	6:30 PM	\$ 1.25/\$ 0.60	Free
Wausau, WI	Mon. – Sat.	7	30 min.	6:00 AM	6:30 PM	\$ 1.25/\$ 0.607	No



## 5. ESTIMATES OF CURRENT TRANSIT DEMAND

Estimated unmet transit demand exists in the Study Area for approximately 300,000 trips per year. The consultant developed this estimate using two widely accepted transit demand models and Year 2000 Census data. The models used were the Burkhardt and Millar Model and the SG & Associates Arkansas Model.

The Burkhardt and Millar method was developed in the 1970s using data gathered from rural and small urban transit operations in Pennsylvania and models the behaviors of persons aged over 65 and persons living in households without automobiles. In the process of calibrating the model, the authors determined that these subpopulations comprise as much as 80 percent of typical transit ridership. The Formula for the model is as follows:

$$UnlinkedPassTrips = \frac{(12 * Population \geq 65 Years of Age) + (19 * Population Zero Car HH)}{0.8}$$

Source: Senior Transportation Connection of Cuyahoga County, *Cuyahoga County Strategic Plan for Senior Transportation Draft Final Report*, “Section 6 - Needs Assessment and Demand Forecasts”, March 2003.

The authors determined by analyzing the gathered data that seniors in their study area made an average of 12 trips per year on transit, while persons living in households without automobiles made an average of 19 trips per year. Dividing the results by 0.8 allows for the 20 percent of the ridership that they observed came from the general public, or from subpopulations other than seniors or persons from households without cars. Applying this model to Study Area demographics results in 317,475 trips per year as shown in Table 5-1.

**TABLE 5.1: BURKHARDT AND MILLAR METHODOLOGY**

Population over 65	X 12	Equals	Plus	Population of Zero Car Households	X 19	Equals	Sum Total	Divided by 0.8	Equals
11,586		139,030		6,050		114,950	253,980		317,475

Source: R. H. Bohannon & Associates

The SG & Associates Arkansas model was developed for the Public Transportation Needs Assessment and Action Plan, prepared for the State of Arkansas. Trip generation factors for specific transit ridership segments were obtained from peer agencies. Trip rates for seniors were obtained from shared-ride program statistical reports for the State of Pennsylvania for the



1985-86 and 1986-87 years. Seniors using this program took an average of 8.4 trips per person per year. Trip rates for mobility-limited persons under age 65 were determined from Dayton, Ohio data. The Dayton data suggested trip rates of 26.35 trips per person per year. However, Arkansas' own data suggested 29.3 trips per person per year, and a rate of 30.0 trips per year was adopted. The authors of this methodology deemed the general public market to be low-income adult population, not including seniors or mobility-limited individuals. According to the 1977 National Personal Transportation Survey, cited by SG & Associates, this low-income adult population segment exhibited a trip rate 55 percent higher than that of the senior population. The 80<sup>th</sup> percentile rate for this group was estimated at 14.5 trips per person per year. The Formula for this model is as follows:

$$UnlinkedPassTrips = (8.4 * Population \geq 65YearsofAge) + (30.0 * DisabledPop \leq 65YearsofAge) + (14.5 * NonDisable dPopulation \leq 65YearsofAge)$$

Source: Senior Transportation Connection of Cuyahoga County, *Cuyahoga County Strategic Plan for Senior Transportation Draft Final Report*, "Section 6 - Needs Assessment and Demand Forecasts", March 2003.

Applying this model to Study Area demographics results in 323,485 trips per year as shown in Table 5-2.

**TABLE 5.2: SG & ASSOCIATES ARKANSAS METHODOLOGY**

Population over 65	X 8.4 Equals	Plus	Mobility-limited Population 16 – 64 years of age	X 30 Equals	Plus	Non-mobility-limited Low Income population under 65	X 14.5 Equals	Sum Total
11,586	97,321		5,692	170,760		3,821	55,405	323,485

Source: R. H. Bohannon & Associates

Although the methodologies used in the two modeling procedures differed, the difference in the estimates obtained from each is statistically insignificant. Note that neither of these models take into consideration any service characteristics. Hence the consultant believes that the annual ridership figure they suggest, of between 317,475 and 323,485 unlinked trips, represents the total transit demand for the study area. Some of this demand is likely being met by existing human services providers. The 320,000 annual ridership would be attained by an ideal system, providing service within walking distance—or door-to-door for those requiring it—throughout the study area. However, these numbers estimate demand for local service



within Apache Junction only. Regional or commuter ridership, such as would be generated by an extension of bus rapid transit on the US 60 corridor into the area, would be in addition to the ca. 320,000 estimate. Moreover, a clear synergy would exist: The existence of both the local and the regional service would enable both to attract more riders than either would as a stand-alone operation.





## 6. FUTURE SOCIOECONOMIC CONDITIONS

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This chapter summarizes projected future socioeconomic conditions. Data being developed by Jacobs for the Apache Junction Comprehensive Transportation Study was obtained and plotted to provide overall snapshots of the City demographics for the 60,000, 75,000, and 130,000 population levels. The plots were compared with current condition plots as presented in Chapter 2 to assess anticipated growth patterns in population and employment at the three future population levels.

### FUTURE POPULATION AND EMPLOYMENT DENSITIES

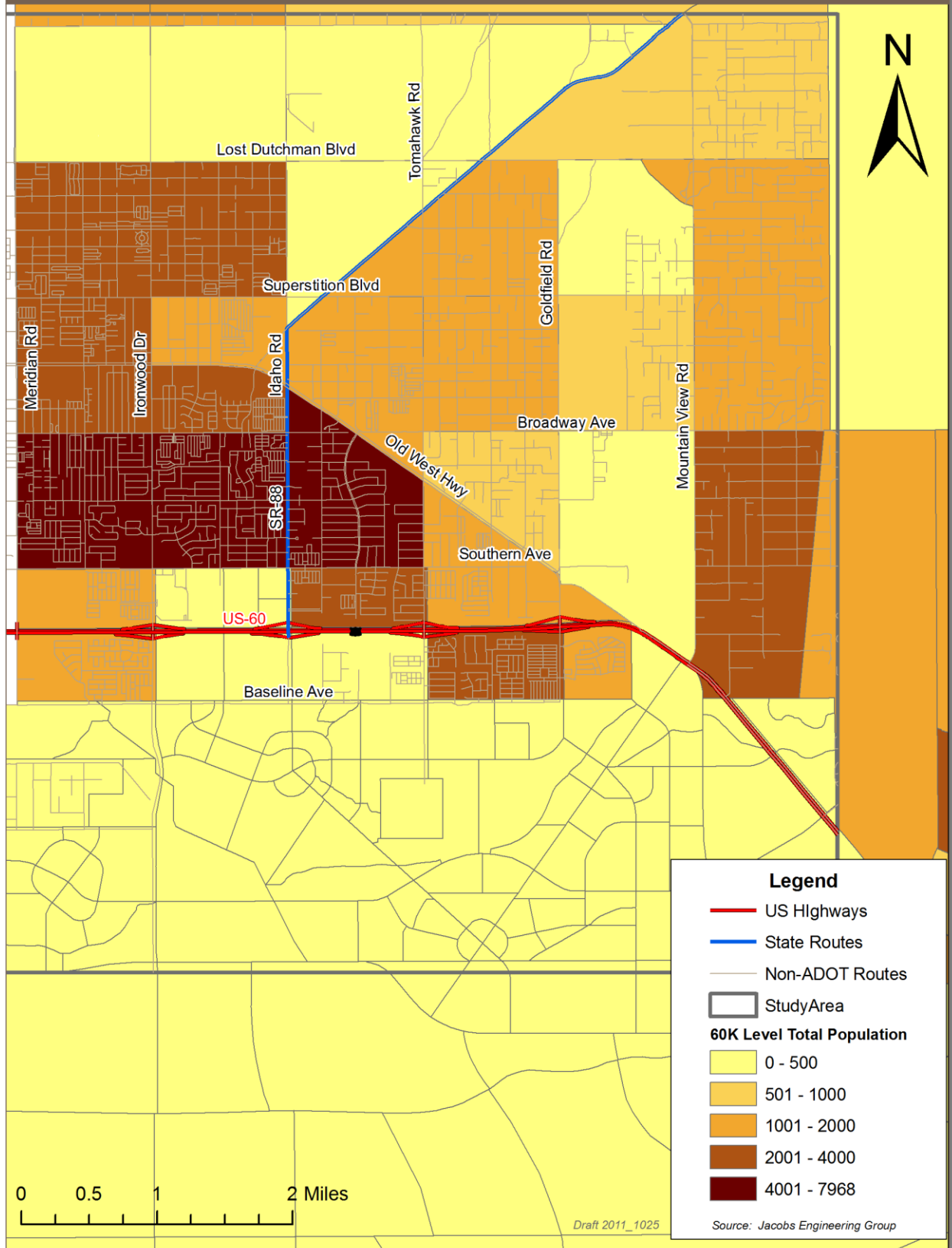
Figures 6.1 and 6.2 depict the population and employment densities by travel analysis zone (TAZ) for the 60,000 total population level. As might be expected, Figure 5.1 shows relatively little change from Figure 2.2 in Chapter 2, which depicted the current (2010) estimated population of the Study Area. As Figure 6.1 shows, the area of densest residential population is expected to remain the three-mile by one-mile rectangle bounded by Meridian Road (the western City limits) on the west, Broadway on the north, Old West Highway and Tomahawk on the East, and Southern on the south. Figure 6.2 shows two areas of more concentrated employment: a mile-wide corridor bounded by Superstition Boulevard on the north and Broadway Avenue on the south and extending from the Junction west to the City limits at Meridian; and a mile by half-mile rectangle bounded by Idaho Road on the west, Tomahawk Road on the east, and located south of US 60.

By the 75,000 total population level—Figure 6.3 shows another area of concentrated residential growth—a square mile bounded by Meridian, Lost Dutchman, Ironwood, and Superstition. In Figure 6.4, the two employment corridors are shown as offering yet more jobs by the 75K level, with additional areas of employment developing to the north of SR 88 and to the south of Old West Highway, east of Idaho Road.

By the 130,000 total population level, Figure 6.5 shows that intense residential density is anticipated between Meridian and Ironwood from Lost Dutchman on the north to Baseline on the south. By then pockets of development are expected to be developing in the Portalis area, as well as east of Mountain View Road. Figure 6.6 shows continued job growth in the established corridors, together with an area south of Baseline and another area at the northeast corner of US 60 and Ironwood.



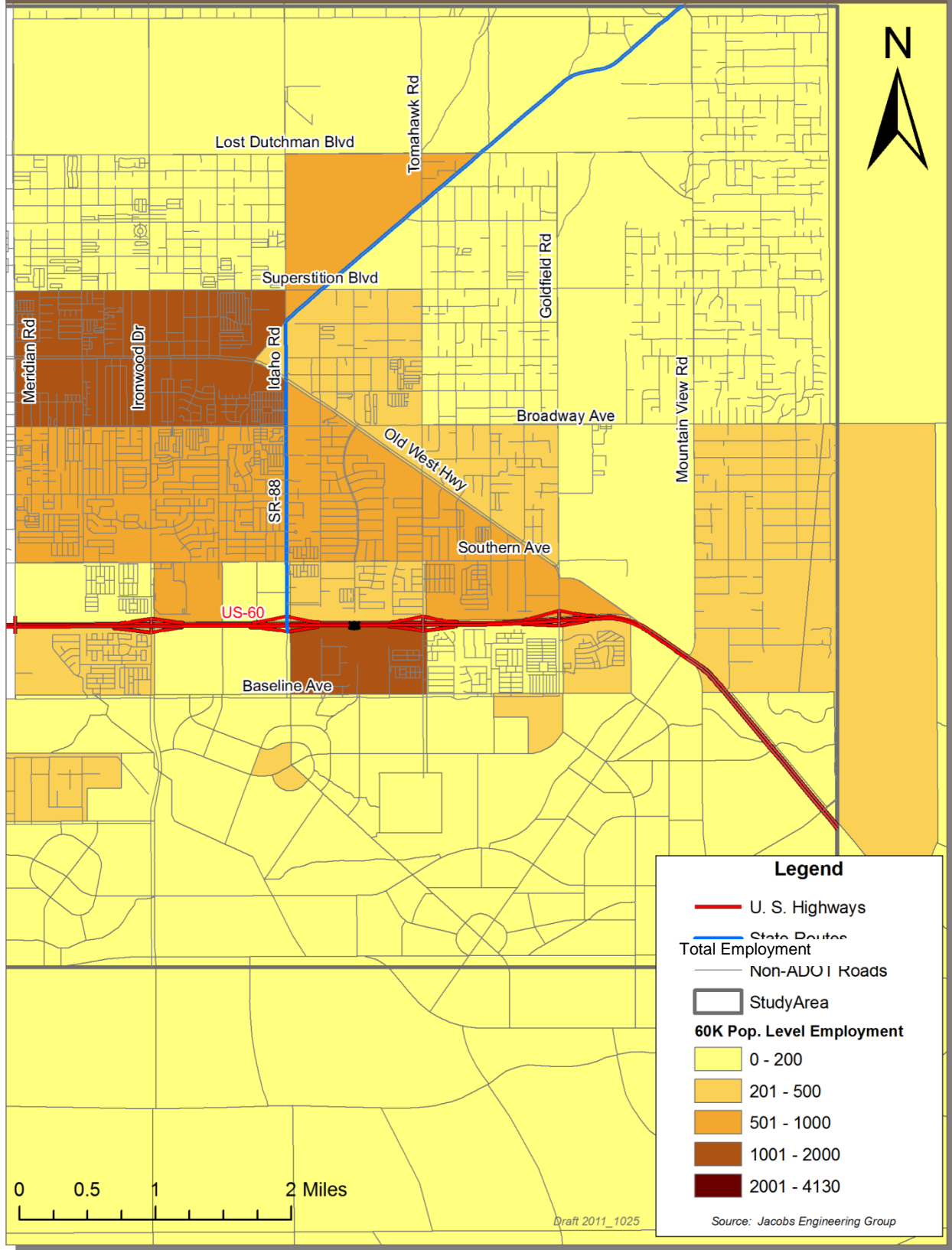
**FIGURE 6.1: 60K LEVEL POPULATION BY TAZ**



Source: R. H. Bohannon & Associates



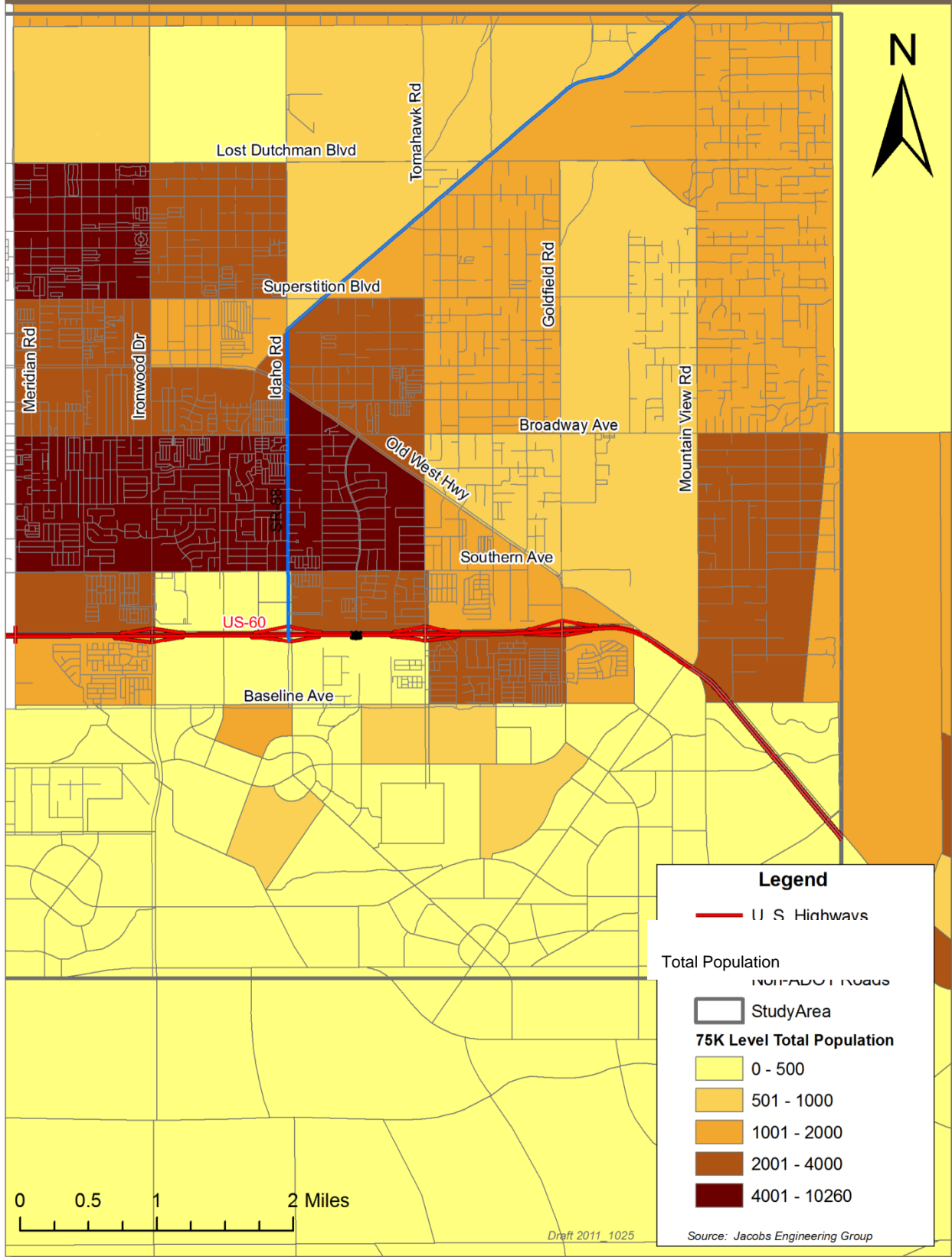
**FIGURE 6.2: 60K POPULATION LEVEL EMPLOYMENT BY TAZ**



Source: R. H. Bohannon & Associates



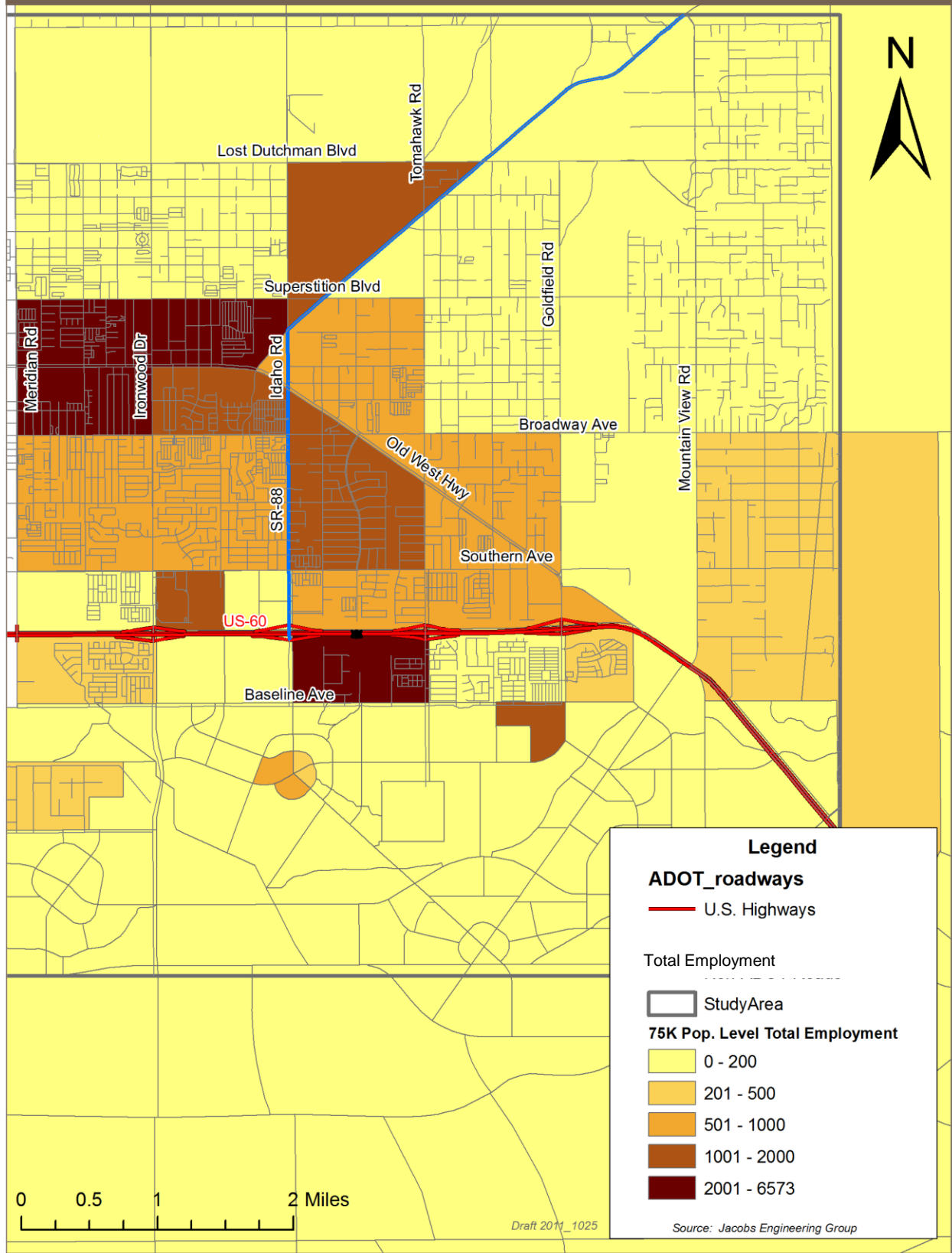
**FIGURE 6.3: 75K LEVEL POPULATION BY TAZ**



Source: R. H. Bohannon & Associates



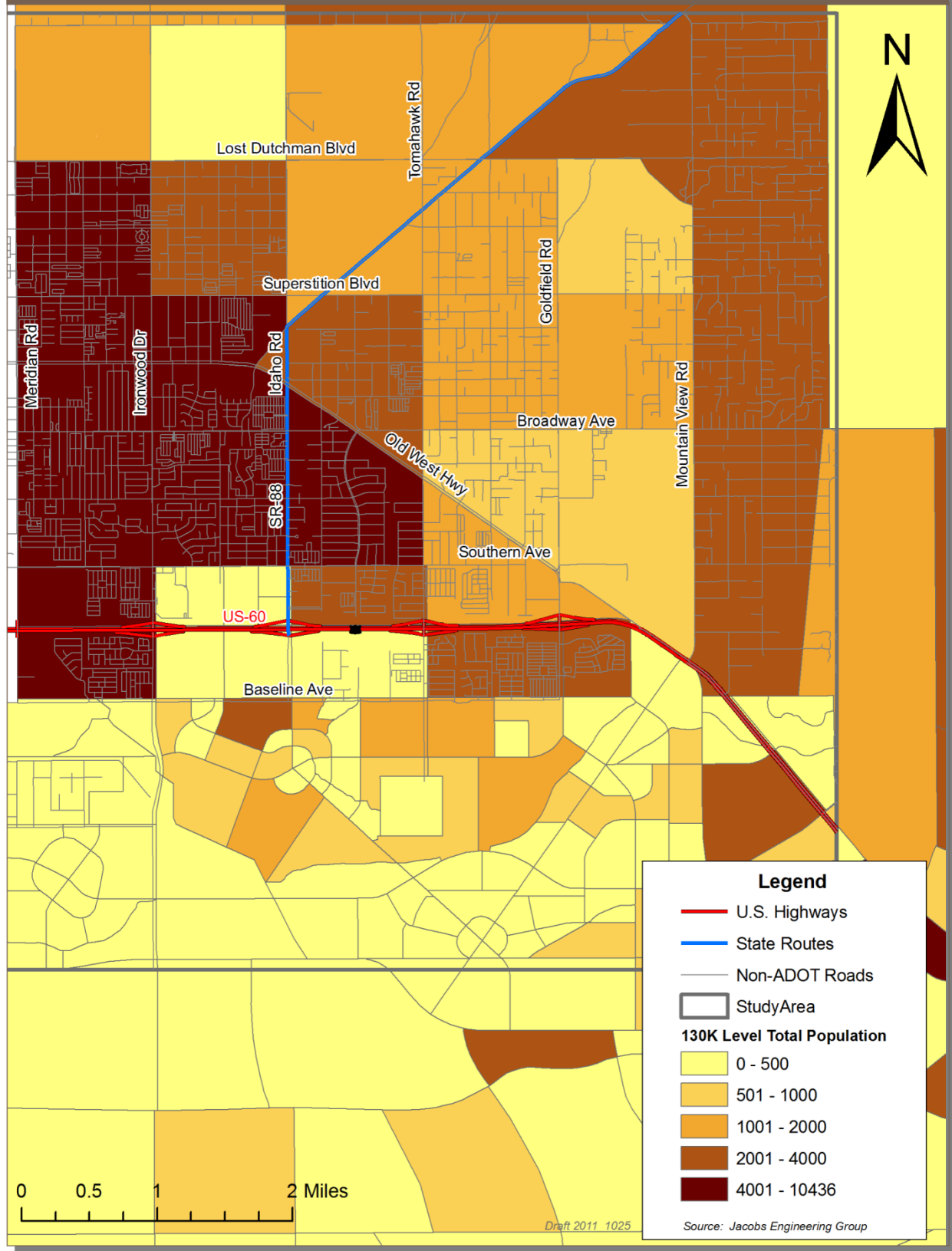
**FIGURE 6.4: 75K POPULATION LEVEL EMPLOYMENT BY TAZ**



Source: R. H. Bohannon & Associates



**FIGURE 6.5: 130K LEVEL POPULATION BY TAZ**

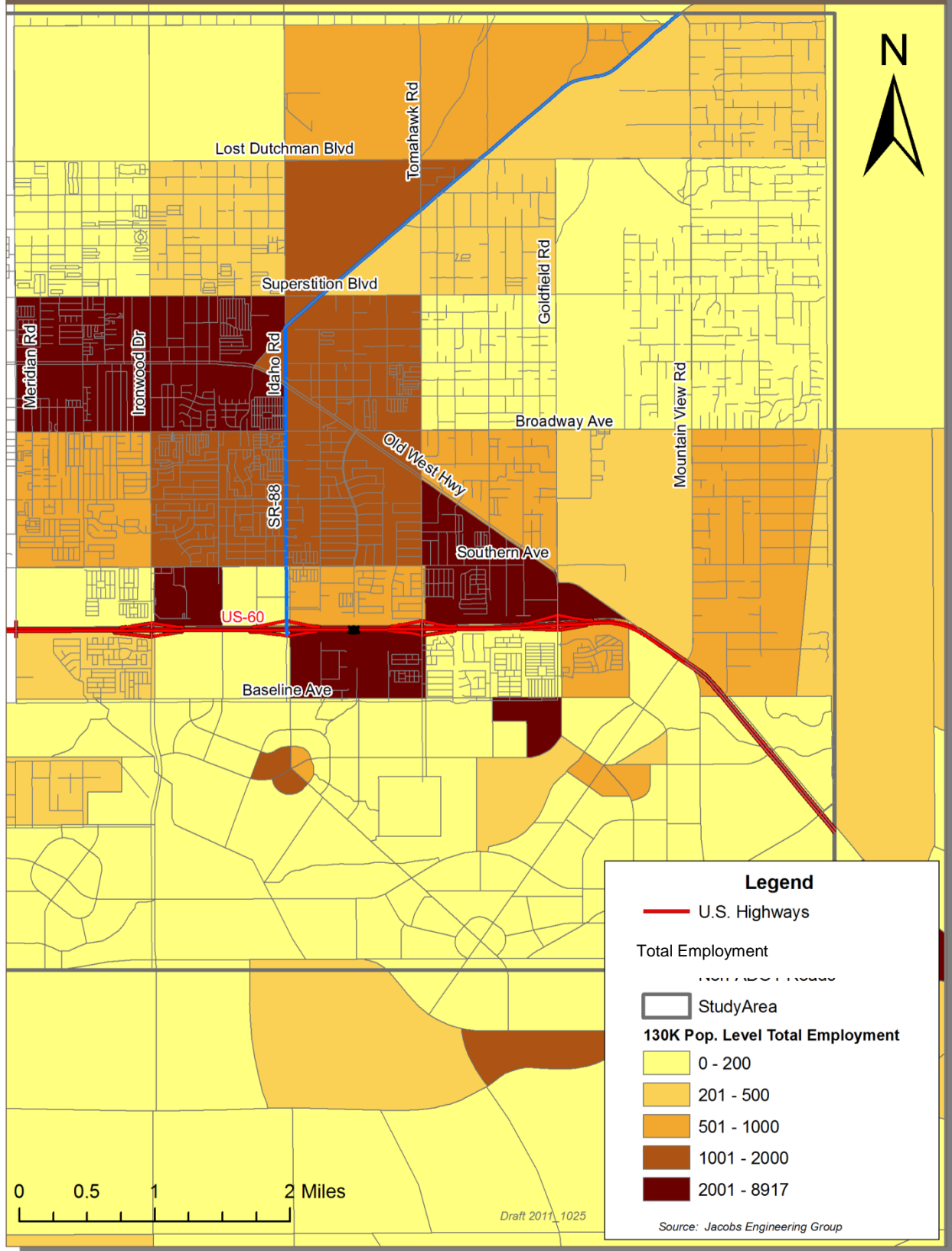


Source: R. H. Bohannon & Associates





**FIGURE 6.6: 130K POPULATION LEVEL EMPLOYMENT BY TAZ**



Source: R. H. Bohannon & Associates



## **7. PUBLIC TRANSPORTATION SERVICE ALTERNATIVES**

This chapter presents the options for area public transportation to be considered by the City. Two general forms of public transportation have been identified as being particularly suitable for meeting the local and regional needs of Apache Junction residents over the next twenty-five years: Transportation Demand Management (TDM) alternatives and five types of transit service. Each will be examined in the following sections of this paper.

### **TRANSPORTATION DEMAND MANAGEMENT ALTERNATIVES**

Transportation Demand Management consists of a wide range of programs and services that enable people to get around without driving alone. Included are alternative transportation modes such as carpooling, vanpooling, transit, bicycling, and walking as well as programs that alleviate traffic and parking problems such as telecommuting, variable work hours, and parking management.

Transportation Demand Management can address the needs of those traveling long distances with rideshare options such as vanpools and carpools. These types of services are vital in moving people around large areas, whether for work or for traveling to regional centers that have special services, medical facilities, or retail stores.

#### **Rideshare Matching Programs**

Rideshare matching programs provide service by identifying people who live and work close to each other and then facilitating carpooling and vanpooling. Matching services can pair full-time partners, or simply someone to call in an emergency. Rideshare matching can be done by individual employers or on a community-wide basis. In addition to commute trips, travelers can be matched with others participating in the same extracurricular school function, medical-related trip, shopping trip, or community activity.

Rideshare matching is typically done through a computerized system. A variety of vendors have created inexpensive, effective software that makes this process easy to use. Rideshare services can also be offered on-line.

Two common forms of ridesharing are carpools and vanpools.



## ***Carpools***

Carpool participation is higher than the national average in Apache Junction, suggesting that a potential for developing additional carpools in the area exists. Strategies for formalizing and increasing carpooling in Apache Junction follow:

- ◆ The carpooling that is already established needs to be quantified and documented. This process could be an employer-based registration system that provides an incentive for filling out an information/registration card. Incentives might be as simple as a chance to be entered in a drawing for dinner for two at a popular restaurant. Periodic updates and opportunities for future carpooling incentives would be an option for car-poolers.
- ◆ A benefit of registering carpools is that the informal carpools might be able to serve another commuter who works the same shift, or an additional participant in the same periodic activity. The baseline data forms the beginning of destination-driven ride matching.
- ◆ Once the baseline data quantifies a level of carpool usage, goals for increasing participation and incentives to attract more new carpools can be identified and implemented.

## ***Vanpools***

In addition to carpools, vanpools are also an alternative to be considered for area commuting. The methodology described above for carpools is one way to begin building a database for informal vanpools. By asking vehicle capacity on the registration card, the information helps organizers build an “excess capacity” database.

This type of vanpool is very informal and maintains its schedule based on employee needs. Matching commuters from the same or other businesses is the growth potential. Again, the object is to quantify and document existing vanpool commuters and build the program where possible.

Another option is to provide businesses with an incentive to let the vehicle be used for a formal vanpool program with a wider group of employees. If the vehicle becomes a part of a formal program, maintenance, insurance and vehicle upkeep can be offered as incentive. Such a fleet of vanpool vehicles can be used as “guaranteed ride home” vehicles for bus/rideshare commuters who have an unscheduled midday need to get home.

There are a few issues that come up with shared-use vehicles as described above. If the driver of the vanpool is an employee who is also commuting to work, the type of insurance needed is



different than if the driver is paid or if the vehicles are used for other service during the day. As with any formal bus service, vanpools need back-up vehicles or a plan for alternate service.

Other issues that can make or break a vanpool deal with passenger “rules.” Vanpool issues include:

- ◆ How long will the van wait for late passengers?
- ◆ Is there a central meeting place for commuters?
- ◆ Does the program require parking for commuters?
- ◆ Is the vehicle secure during the day or evening hours?
- ◆ Are eating and drinking allowed in the vehicle?
- ◆ What happens when a member of the vanpool drops out? Who is responsible for filling the empty space?
- ◆ How will conflicts among participants be resolved?
- ◆ How is gas money collected?
- ◆ How and when does maintenance on the vehicle occur?

Options for implementing and funding vanpools are discussed in Chapter 12.

## **DIFFERENT TYPES OF TRANSIT SERVICE**

A number of roadway-based and fixed-guideway forms of transit service exist, including bus service, light rail, commuter rail, subways, and monorail. Five modes of transit have been identified as most likely for eventual implementation in Apache Junction. These are:

- ◆ Dial-A-Ride and Paratransit Service
- ◆ Deviated Fixed Route Service
- ◆ Fixed Route Service including local, express, and limited stop services
- ◆ Bus Rapid Transit
- ◆ Light Rail Transit

### **Types of Bus Transit Vehicles**

The vehicles used by a public transportation operation are the most tangible aspects of the service, and it is tempting to think of the service provided by a particular operation in terms of its vehicles. We all know what a “Greyhound Bus” looks like, for example. Technically speaking, however, any type of vehicle can be used for the operation of any type of service. On a lightly traveled route, for example, a 14-passenger van often functions as a scheduled intercity bus. At the other end of the scale, full size coaches, when chartered by groups, perform a function not unlike that of a taxi—except for the number of persons carried.

Five basic types of vehicles are used to provide public transportation:



- ◆ Automobiles
- ◆ Vans and customized vans
- ◆ Body-on-recreational-vehicle-chassis or cutaway vehicles
- ◆ School bus vehicles
- ◆ Purpose-built vehicles—intercity and transit coaches

Examples of the vehicle types most commonly associated with the different types of operation are shown in Figure 7.1. With the exception of automobiles, all vehicle types are routinely fitted with wheel chair lifts and other appliances designed to facilitate accessibility pursuant to the specifications of the Americans with Disabilities Act (ADA).

### **Types of Light Rail and Modern Streetcar Equipment**

As the light rail and modern streetcar photos in Figure 7.2 suggest, the equipment used for both types of services is similar in appearance. Both are articulated, electrically-powered units that receive power from overhead wires and can be operated singly or joined together as trains staffed by a single operator in the cab of the lead car. Light rail cars vary in length and are usually between 8.5 and 10 feet in width. Light rail equipment is capable of speeds in excess of 60 mph. Modern streetcars have similar dimensions, but are designed to operate at slower maximum speeds.

Electrically-powered equipment has the capability of quick acceleration and braking, which can reduce the travel time needed between stops. In many cases, passenger comfort and safety are the limiting factors with respect to the quickness of acceleration and braking. Light rail systems are designed so that the height of the station platforms and the car floors are identical, enabling convenient wheelchair accessibility as well as bicycle loading. Unlike buses, where bicycles are loaded on the front of the bus, light rail vehicles have internal bicycle racks from which bicycles can be loaded more quickly and conveniently.

Future options for use of both bus and rail vehicles will be explored in a subsequent chapter.



**FIGURE 7.1: DIFFERENT TYPES OF BUS TRANSIT SERVICE**



Source: R. H. Bohannon & Associates

**“Dial-a-Ride” Service** is a demand-response service. Vehicles do not operate on a fixed route or schedule, but pick up patrons at their origins and deliver them directly to their destinations. Before the trip begins, and during the course of the trip, the driver receives information from a dispatcher concerning pick-up and drop-off requests.

This cutaway vehicle, comprised of a minibus body constructed on a recreational vehicle chassis, is used by Valley Metro for both paratransit and dial-a-ride service.



Source: Flagstaff Mountain Line

**Deviated Fixed Route Service**, sometimes referred to as “checkpoint” service, is considered an intermediate step between dial-a-ride, which targets transit dependent riders, and fixed route service, which is more efficient in larger cities having significant volumes of transit ridership. A deviated fixed route stops at scheduled “time points”—or “checkpoints”—much as a fixed route service does. However, the route taken between points can vary from trip to trip. This mid-size transit coach is also used for fixed route service in smaller cities—as is being done in Flagstaff.



Source: Valley Metro

**Bus Rapid Transit** service operates at higher speeds and makes fewer stops than local buses, resulting in trip times that are more competitive with those of trips made in a private automobile. Bus rapid transit routes typically operate on freeways, in high-occupancy vehicle lanes, in lanes designated for bus use only, or on dedicated bus ways. Valley Metro’s new “LINK” buses connect with the current eastern terminus of the METRO light rail line at Main Street and Sycamore in Mesa and extend eastward to Superstition Springs Mall. Such service could be extended further east to Apache Junction.



**FIGURE 7.2: DIFFERENT TYPES OF RAIL TRANSIT SERVICE**



Source: R. H. Bohannon & Associates

**Light Rail** systems, such as Phoenix’s new METRO, have stations spaced at least one-half mile apart that can resemble commuter rail facilities, with platforms that match car door height for accessibility, ticket and other vending machines, park-and-ride lots, and other amenities. Trains operate in reserved rights-of-way, not shared with motor vehicles.



Source: Portland Development Commission

**Modern Streetcar** equipment is similar to that used in many light rail applications. However, streetcars operate more like a bus than a train, sharing travel lanes with motor vehicles and stopping frequently at “bus-like” stops.

## 8. DEMOGRAPHIC THRESHOLDS FOR IMPLEMENTING DIFFERENT TRANSIT SERVICES

This chapter presents demographic thresholds for implementing different types of transit services in Apache Junction. The methodology used for identifying the thresholds is explained, and target population levels for specific transit service implementation, upgrades, or expansion are presented.

### TRANSIT SERVICE THRESHOLD METHODOLOGY

In Chapter 6, demographic data for the three population levels developed for the Apache Junction Comprehensive Transportation Study was presented for both residential and employment densities by TAZ.

Traditionally, transit thresholds are based on residential densities alone. However, the application of such thresholds to residential densities shown on a TAZ level fails to consider the variations in density within the TAZ itself. To compensate for this observation, the consultant decided to apply the thresholds to the sum of the residential and employment densities within a TAZ rather than to the residential densities alone.

A transit service threshold scenario was developed for application to the TAZ array. The threshold levels for the different types of transit service were calculated from data presented in the 2003 MAG High Capacity Transit Study. Table 8.1 presents the threshold levels for this scenario.

**TABLE 8.1: MINIMUM CONSOLIDATED RESIDENTIAL AND EMPLOYMENT DENSITIES FOR  
VARIOUS TYPES OF TRANSIT SERVICES**

Transit Service Type	Persons/Sq Mile*
Bus—minimum service	4,500
Bus—intermediate service	7,780
Bus—frequent service	16,670
Light rail	10,000
Rapid transit	13,300

\* Calculated from Maricopa Association of Governments *High Capacity Transit Study*, 2003

Bus minimum service = 1/2 mi between routes, 20 buses/day

Bus intermediate service = 1/2 mi between routes, 40 buses/day

Bus frequent service = 1/2 mi between routes, 120 buses/day



Note that the densities developed for the *MAG High Capacity Transit Study* may be conservative. Prior to the completion of the initial 20-mile segment of the METRO light rail system, ridership estimates based in part on output from the MAG travel demand model were developed that have proved to be significantly lower than the actual ridership levels METRO is experiencing. On the one hand, in metropolitan Phoenix, which is accustomed to lower residential densities than other metropolitan area, light rail may be supported by lighter densities than anticipated. On the other hand, the existence of the rail line itself has significantly increased both residential and employment densities in the corridor through which it operates.

In this Chapter, the data presented graphically in Chapter 6 is again presented. However, in this Chapter, the residential and employment density data for each population threshold is consolidated. In Figures 8.1 through 8.3, the consolidated data for each TAZ are shown on a per-square-mile basis. Moreover, the data ranges on each map are adjusted to correspond to the ranges on Table 8.1. Hence the threshold when different regions of the study area reach the combined residential and employment densities capable of supporting different modes of public transportation can be easily analyzed.

Figure 8.1 depicts the consolidated residential and employment densities per square mile for the 60,000 total population level. As Figure 8.1 shows, an irregular region comprising approximately seven square miles within the core area of the City, lying between Superstition Boulevard and Baseline Avenue, and bounded on the west by Meridian and the east by Old West Highway, is forecasted to meet or exceed the “Bus–minimum service” threshold by 2015.

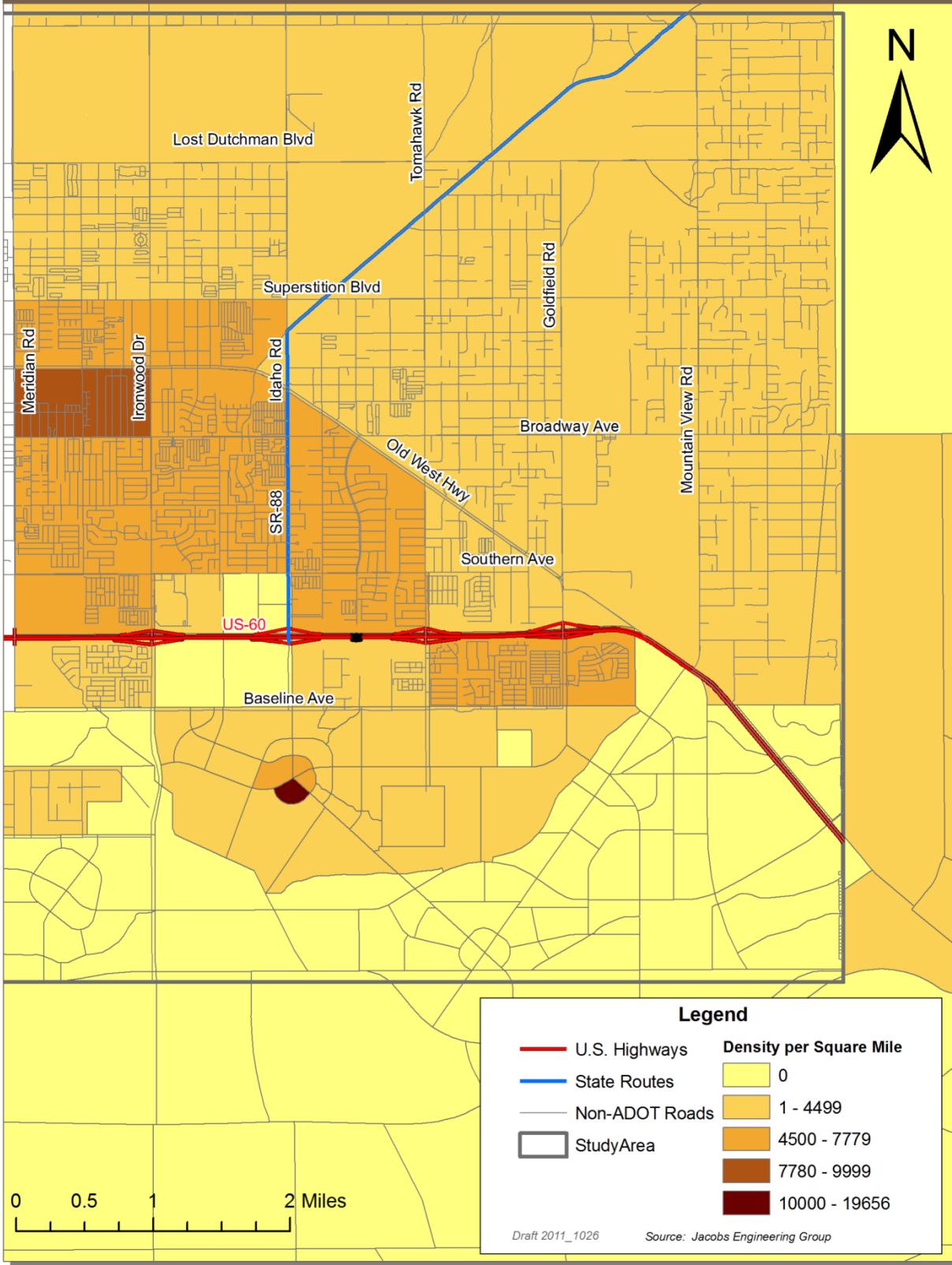
By the 72,000 total population level, as shown in Figure 8.2, a mile-wide corridor centered on Apache Trail and extending west from the junction to Meridian has the combined density to support intermediate bus service. Areas of combined density exceeding 10,000 begin to appear southeast of Apache Trail and Meridian and southwest of Baseline and Goldfield.

As Figure 8.3 shows, at the 130,000 total population level the Apache Trail corridor is forecasted to have reached a density of over 10,000 per square mile—the service threshold identified in Table 8.1 as capable of supporting light rail service. Moreover, this higher density level now extends to an additional square mile south of Broadway, as well as some smaller parcels along Baseline Avenue and within the Portalis area. Meanwhile, the consolidated density of much of the surrounding area has increased to meet or exceed the “Bus–intermediate service” threshold.

Recommendations for the implementation of future public transportation service at the different population levels are presented in Chapter 12.



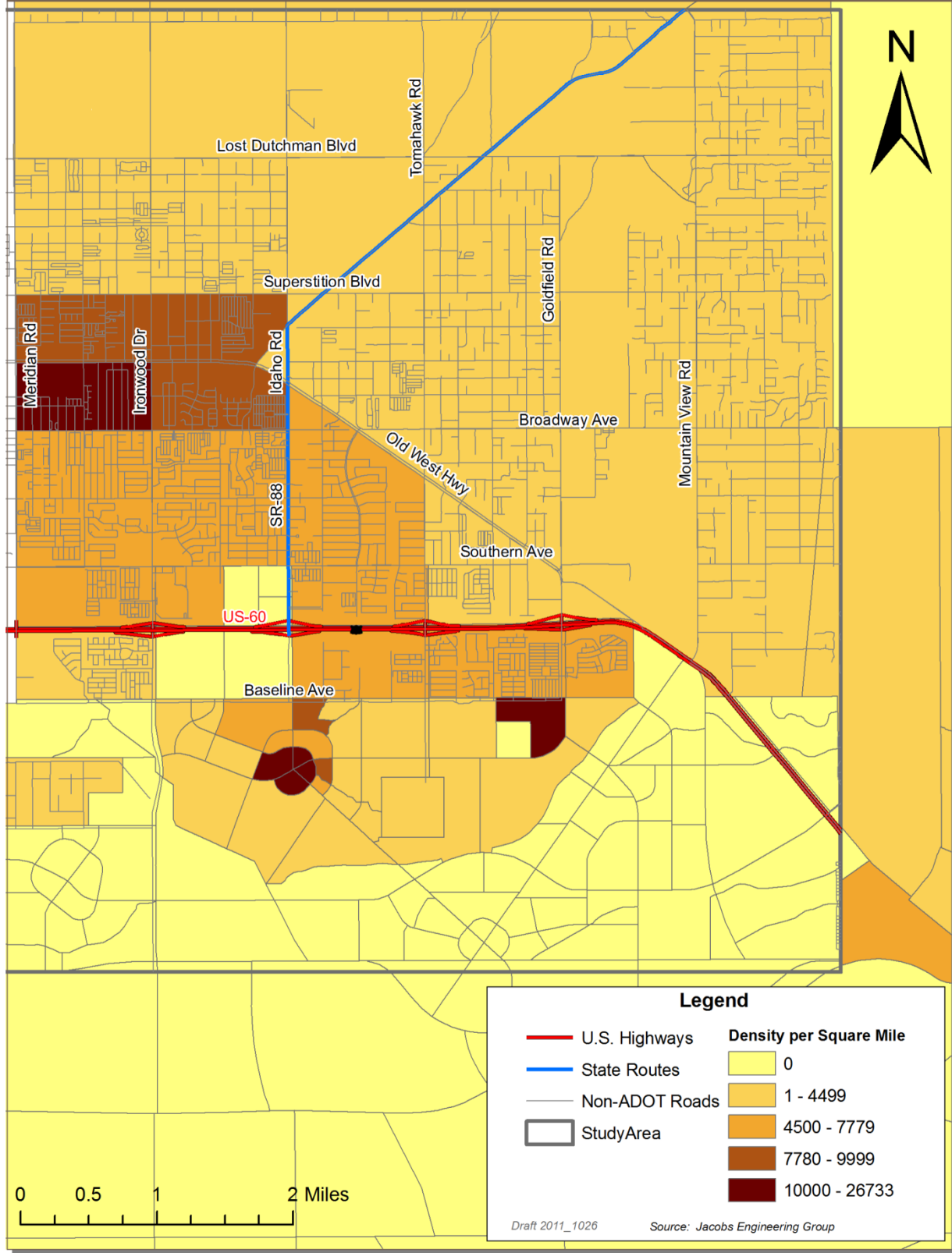
**FIGURE 8.1: 60K LEVEL COMBINED POPULATION AND EMPLOYMENT DENSITY PER SQUARE MILE BY TAZ**



Source: R. H. Bohannon & Associates



**FIGURE 8.2: 75K LEVEL COMBINED POPULATION AND EMPLOYMENT DENSITY PER SQUARE MILE BY TAZ**

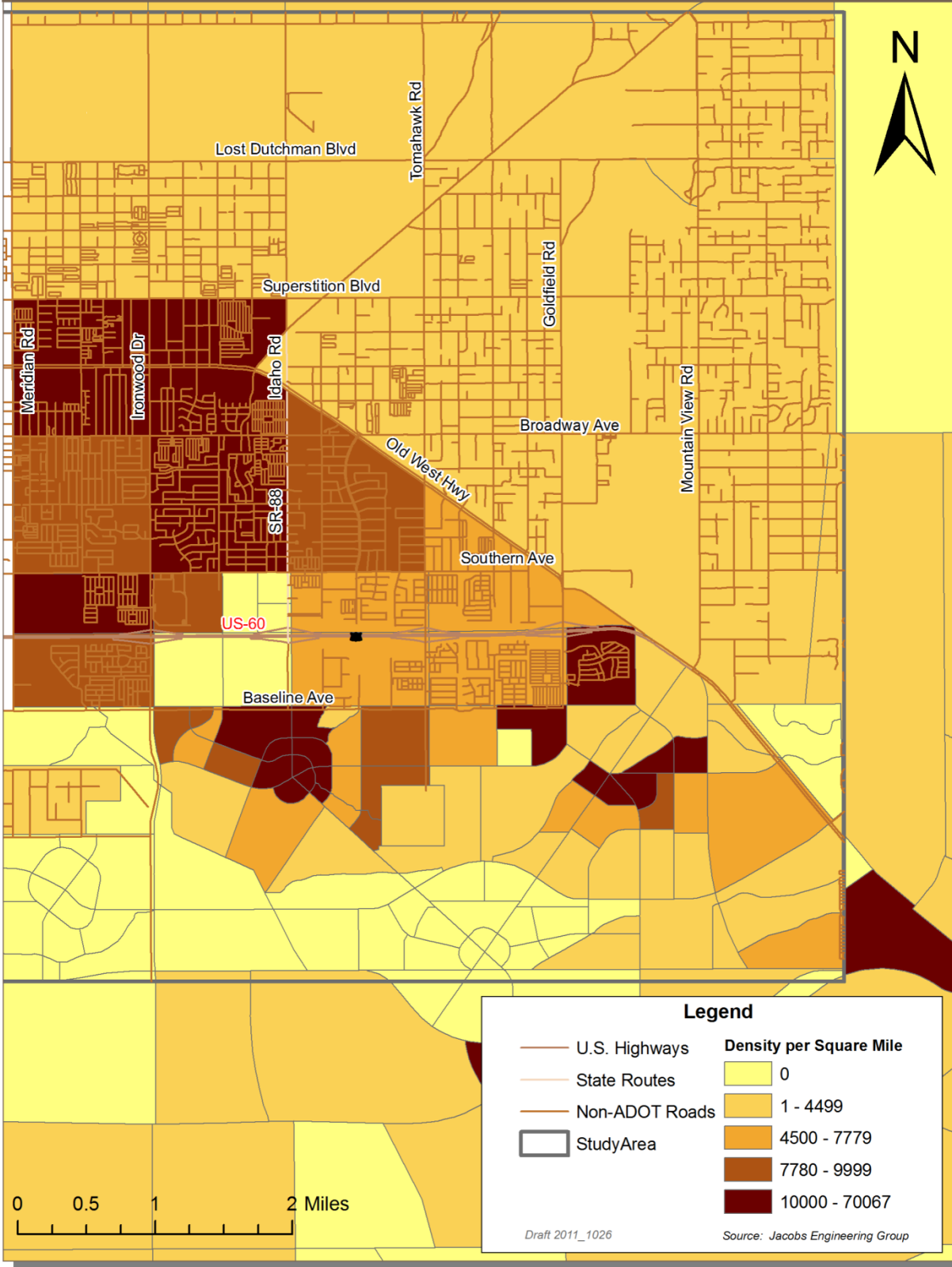


Source: R. H. Bohannon & Associates





**FIGURE 8.3: 130K LEVEL COMBINED POPULATION AND EMPLOYMENT DENSITY PER SQUARE MILE BY TAZ**



Source: R. H. Bohannon & Associates





## 9. ESTIMATES OF FUTURE TRANSIT DEMAND

In Chapter 5, the consultant presented an estimate for current transit demand developed using two widely accepted transit demand models and Year 2000 Census data. The models used were the Burkhardt and Millar Model and the SG & Associates Arkansas Model. The methodology for each of those models was explained in Chapter 5..

The methodologies of both models rely on estimates of specific transit-dependent populations. For the purposes of estimating future transit demand, it is assumed that the percentages of the total population of the study area represented by each of these transit-dependent groups would remain at the Census 2000 levels used in the estimates presented in Chapter 5. Table 9.1 presents the calculated percentages for each of these groups.

**TABLE 9.1: PERCENTAGES OF TRANSIT-DEPENDENT POPULATIONS**

Metric	Census 2000 Figure	Percent of Total
Total Population of Study Area From Census SF3 Table	41,549	100.00%
Population over 65 Years of Age	10,961	26.38%
Population of Zero Car Households	5,783	13.92%
Mobility Limited Population Aged 16 through 64	5,440	13.09%
Low-income Population Under 65 Years of Age	3,652	8.79%

These percentages were applied to each of the three future population levels to derive numbers that were used to develop future demand estimates for each of the levels. The calculations for each of the population levels are shown in Table 9.2. Based on these calculations, the consultant estimates that at the 60,000 population level, there would be an average of 440,000 unlinked trips; at the 75,000 population level, 550,000 unlinked trips; and at the 130,000 population level 954,000 unlinked trips.

As was pointed out in Chapter 5 with respect to the current demand estimate, these trips are based on the forecasted population increases for the City of Apache Junction only and do not take into consideration residential or job growth in other cities within the greater metropolitan Phoenix area. Hence, these estimates represent trips projected to be made within the Study Area only. Travel between Apache Junction and other cities by commuters, shoppers, and tourists, would be in addition to these figures.



**TABLE 9.2: ESTIMATED ANNUAL TRANSIT TRIPS FOR THE POPULATION LEVELS**

Metric	Population Level		
	60,000	75,000	130,000
Population over 65 Years of Age**	15,829	19,786	34,295
Population of Zero Car Households**	8,351	10,439	18,094
Mobility Limited Population Aged 16 through 64**	7,856	9,820	17,021
Low-income Population Under 65 Years of Age**	5,274	6,592	11,427
Burkhardt and Millar Model			
Population over 65 Years of Age	15,829	19,786	34,295
Multiplied by 12 equals	189,942	237,428	411,542
Added to			
Population of Zero Car Households	8,351	10,439	18,094
Multiplied by 19	158,671	198,339	343,787
Totals	348,613	435,767	755,329
Divided by .8 Equals Unlinked Passenger Trips per Year	435,767	544,709	944,161
SG & Associates Arkansas Model			
Population over 65 Years of Age	15,829	19,786	34,295
Multiplied by 8.4	132,960	166,200	288,079
Added to			
Mobility Limited Population Aged 16 through 64	7,856	9,820	17,021
Multiplied by 30	235,674	294,592	510,626
Added to			
Low-income Population Under 65 Years of Age	5,274	6,592	11,427
Multiplied by 14.5	76,470	95,587	165,684
Totals Unlinked Passenger Trips per Year	445,103	556,379	964,390

\*\*Assumes Year 2000 percentages of sub-populations

Source: R. H. Bohannon & Associates

These results, together with those in the preceding chapter, were analyzed further to develop recommendations for future transit services in Apache Junction at the different population levels presented in the following chapter.



## 10. DRAFT TRANSIT SERVICE CONCEPTS

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This chapter presents a phased transit service scenario for Apache Junction. The following factors were considered when suggesting the transit elements to be contained in the different population horizon phases.

- ◆ Demographic thresholds and forecasted demand levels reviewed in Chapter 1
- ◆ Transit-specific goals contained in the Circulation Element of the Apache Junction General Plan, together with transit-related goals conveyed to the consultant by the City
- ◆ Best practices of peer city operations
- ◆ Phasing of transit improvements in adjacent areas of Maricopa County, as programmed by that County's RTP
- ◆ Recommendations of the Pinal County Transit Feasibility Study

These concepts are intended to assist stakeholders in visualizing what local transit service might look like and to stimulate discussion. Inclusion of any or all of these concepts as final recommendations will depend upon the comments and suggestions received from the City and other stakeholders. These local services are presented as “stand alone” systems of routes serving Apache Junction only. However, it is possible that, especially by the time Apache Junction reaches the 130,000 population threshold, some or all of the routes proposed here might be restructured as—or replaced by—extensions of regional Valley Metro routes serving Mesa and other adjacent urban areas. Or, as the Pinal County Transit Feasibility Study suggests, any or all of these local loops could function as the “flex” termini of regional services originating in Mesa or elsewhere.

Note, also, that the year 2000 populations of the peer cities examined range from 30,000 to 53,000, with many of the cities having populations lower than that of Apache Junction currently. All of these cities currently have transit service consisting of 4 or more bus routes. Hence the identification of the systems proposed in this chapter with the different population thresholds is somewhat arbitrary, and a subsequent implementation study may find that justification may exist for introducing more of the routes sooner rather than later.

### NEAR TERM STRATEGIES

Public transit is typically designed to serve one or more of the following three populations:

- ◆ **Transit-Dependent Persons** are those without access to automobiles. These include persons who due to age or physical limitations are unable to drive and persons who cannot afford to own and operate an automobile. These individuals often choose to live



in areas where transit service is already available. However as persons age, and their health or income status change, those who previously had access to an automobile may no longer do so.

- ◆ **Choice Riders** are individuals who own or have access to automobile transportation but who, if provided with feasible options, would choose transit for some of their trips for reasons of economy or convenience.
- ◆ **Persons With Special Needs** comprise, in effect, a subset of the transit dependent population. These are persons who are not only unable to drive, but who also must make periodic trips for medical reasons.

The goal of a local public transportation system should be to have elements that address the needs of all three groups of riders. Until Apache Junction attains the desired population threshold and/or until sufficient funding is available to implement a more comprehensive system, transportation demand management techniques such as the carpool and vanpool concepts discussed in an earlier chapter can be employed to address portions of the transit needs of the community.

### City Transportation Coordinator

The City could hire or designate a city transportation coordinator to develop or identify a suitable rideshare program, serve as a clearing house for local and regional public transportation information, and manage the implementation and operation of the transit service.

In addition to designating a Transportation Coordinator, who would be a paid member of the City staff, the City should consider appointing a volunteer Transit Advisory Committee to assist the City in identifying the desirable attributes of the coordinator position and to work with the coordinator after his or her selection. The Transit Advisory Committee could act as a liaison for transit issues between the City and the business community, with respect to transit issues, and could also provide input for equipment selection, route selections and additions, and transit center concept and site selection.

### Transportation Demand Management Techniques

The rideshare program to be administered by the city transportation coordinator could have two key components, a carpool program and a vanpool program. Concepts for implementing and funding these programs are presented in this section.



### *Carpools*

The first step in implementing a carpool program is the creation of a database containing information about daily commuting needs for those who wish to participate. In order to distribute the rideshare application to as many persons as possible, it could be placed in the local newspaper as an insert, or perhaps included with utility bills. The City could also participate in an on-line ride matching system such as carpoolworld.com, which is used by Pinal County.

As soon as information for a sufficient number of applicants has been entered into the database, the “matching” of participants can begin. The City’s role in the process is simply that of introducing the participants to one another. Additionally, the City could emphasize its expectation that all participating drivers and vehicles will be properly licensed, that the drivers will obey all applicable laws, and that the vehicles will be properly maintained. Participants should be reminded to respect their fellow car-poolers, to share fuel costs, and so on. The City does not guarantee that each of the carpool (or vanpool) matches will “work out,” and continued participation—in the program itself or in a particular car pool—is of course strictly voluntary.

### *Vanpool Basics*

**Vanpool Operated by Government Entity.** A public jurisdiction such as Pinal County or the City, could purchase vehicles and administer a vanpool program. In certain instances, a private business owner can supply the capital for vehicle lease or purchase. Participants can share the cost of operating the vanpool; however, employers may fully or partially subsidize the costs. The calculation for deciding how to price this type of vanpool service is based on several factors:

- ◆ Vehicle depreciation cost spread over five years or 50,000 miles of operation
- ◆ Vehicle usage calculated on a monthly average of 21 days
- ◆ Fuel costs per mile, a conservative estimate, reflecting fluctuating fuel costs
- ◆ Mileage calculated on a round-trip basis
- ◆ Per-mile maintenance costs are determined
- ◆ Administrative responsibilities include marketing, training drivers, keeping vanpools viable and full, and creating incentive and promotional programs

**Private Sector Vanpools.** Employers could choose to sponsor vanpools. For example, an Apache Junction--based employer may commit to using vanpool vehicles for employees commuting from Mesa or Phoenix. Annual participation contracts with renewal clauses should be signed.



The vanpool administrator/coordinator holds meetings with employees and signs up 14 users for each van. Two-or-more drivers for each vanpool agree to a three-hour driver-training course and they are certified to drive the vehicle.

In exchange for driving, fueling the vehicle, and arranging for scheduled maintenance, the primary driver may receive transportation free each month, or may have personal use of the vehicle for up to between 35 and 50 miles on the weekends/evenings. This is a valued incentive where the employer pays for most or all of each individual's commuter costs.

**Insurance:** If shared use of the vehicles is contemplated, liability insurance issues need to be carefully researched. If the vanpool is structured so that the City owns the vehicles, additional coverage through the City's liability insurer may be available. Self-insuring under an umbrella policy may be another option. Vehicle and liability insurance for government owned/operated vanpool systems may be available from several sources. Another option is to self-insure. Again, if there is a plan for shared uses of the vehicles, insurance issues need to be carefully researched.

**Vehicle Replacement:** Cost for vehicle replacement must be considered in funding this program. The operating agency must collect enough of a per-mile cost to accrue the purchase cost of the vehicle over five years or 50,000 miles.

The key to implementing a successful vanpool program is to develop partnering relationships with the businesses that will benefit. The partnership of the employer and employee is critical to maintaining stable and cost effective vanpools. From the acquisition of the vehicle to securing a full roster of riders, a positive mutual advantage must be present.

### ***ShareTheRide.com***

ShareTheRide.com is a free on-line ride-sharing program operated by Valley Metro. By means of ShareTheRide.com, persons seeking transportation options may find "matches" for carpooling or even for setting up a vanpool. Because Valley Metro is a Maricopa County-based entity, persons making use of ShareTheRide.com must enter either an origin or a destination within Maricopa County. Persons wishing to use ShareTheRide.com must go online, visit the web site, and register. ShareTheRide "...uses state-of-the-art mapping technology to search for matches around or along [the] commuting route. It displays those matches...on an interactive Google map, and allows [the user] to send an e-mail to potential matches...."

([www.sharetheride.com](http://www.sharetheride.com))





Pinal County has established a free carpool matching service at [carpoolworld.com](http://carpoolworld.com) that could be used by those commuters to Pinal County destinations. Persons register to participate as is done in [ShareTheRide.com](http://ShareTheRide.com) and are matched with those having the closest origins, destinations, and commute days and times. As more and more commuters register to participate in these networks, the opportunities for establishing workable carpools and vanpools will increase.

### Valley Metro's Vanpool Program

Valley Metro lists the following steps to establish a vanpool:

1. Assemble a group of at least six interested people who live and work in the same areas with similar work hours. You can find potential route and schedule matches at [ShareTheRide.com](http://ShareTheRide.com).
2. Call Valley Metro at 602.262.RIDE (7433) to request a vanpool application. If you'd like, a Valley Metro Business Services representative can visit your workplace for an on-site group formation meeting.
3. Decide who will be the primary and backup drivers, and establish ground rules for the group.
4. Submit your completed application. You will be contacted by Valley Metro to select your vanpool vehicle and set a delivery date.
5. Set your start date and get moving!

([www.valleymetro.org/vanpool](http://www.valleymetro.org/vanpool))

Table 10.1 lists sample monthly vanpool fares charged by Valley Metro for the different types of available vehicles.

**TABLE 10.1: SAMPLE MONTHLY VALLEY METRO VANPOOL FARES**

One Way Mileage	Van Type				
	8-Passenger Luxury	9-Passenger	12-Passenger Luxury	14-Passenger Luxury	15-Passenger
0-30 miles	\$73	\$57	\$81	\$76	\$56
31-60 miles	\$78	\$62	\$86	\$80	\$57
61-90 miles	\$83	\$72	\$91	\$83	\$59

Note: Monthly passenger fares shown above do not include fuel or parking costs. Fares are based on 80% occupancy.

Source: Valley Metro

The carpool and vanpool matches provided by [ShareTheRide.com](http://ShareTheRide.com) are intended for those who have daily commutes to the same location for work or school. They are not really designed to be used by persons for shopping, medical trips, or travel to concerts or sporting events. However creativity in defining matches is acceptable. For example, the "destination" of a vanpool need not be a place of employment or education. It could be the park-and-ride lot at



the end of the light rail line in Mesa. Apache Junction participants in the ShareTheRide.com system could simply list the address of the park-and-ride lot as their destination to find carpool or vanpool matches. Hence, Apache Junction residents with places of employment—or education—anywhere along the METRO light rail line could take advantage of a carpool or vanpool arranged through ShareTheRide.com.

### **Other Near-Term Strategies**

The vanpools and carpools established by means of the ride-sharing databases do not require significant participation by the City of Apache Junction. Note that the Pinal County ride-sharing program would also fit the needs of those traveling entirely within the City.

Other strategies could include expanding the existing RIDE Choice or Coupons for Cabs programs. Currently, as explained in Chapter 2, an applicant for either of these must be a permanent resident of the City of Apache Junction and either age 60 and over, or an adult between the ages of 18 and 59 with a disability certification and no longer driving. These programs could be restructured so that part-time residents, such as winter visitors, adults without disabilities, or young persons accompanied by adults, could participate. Those not meeting the original criteria could pay higher rates for the coupon books.

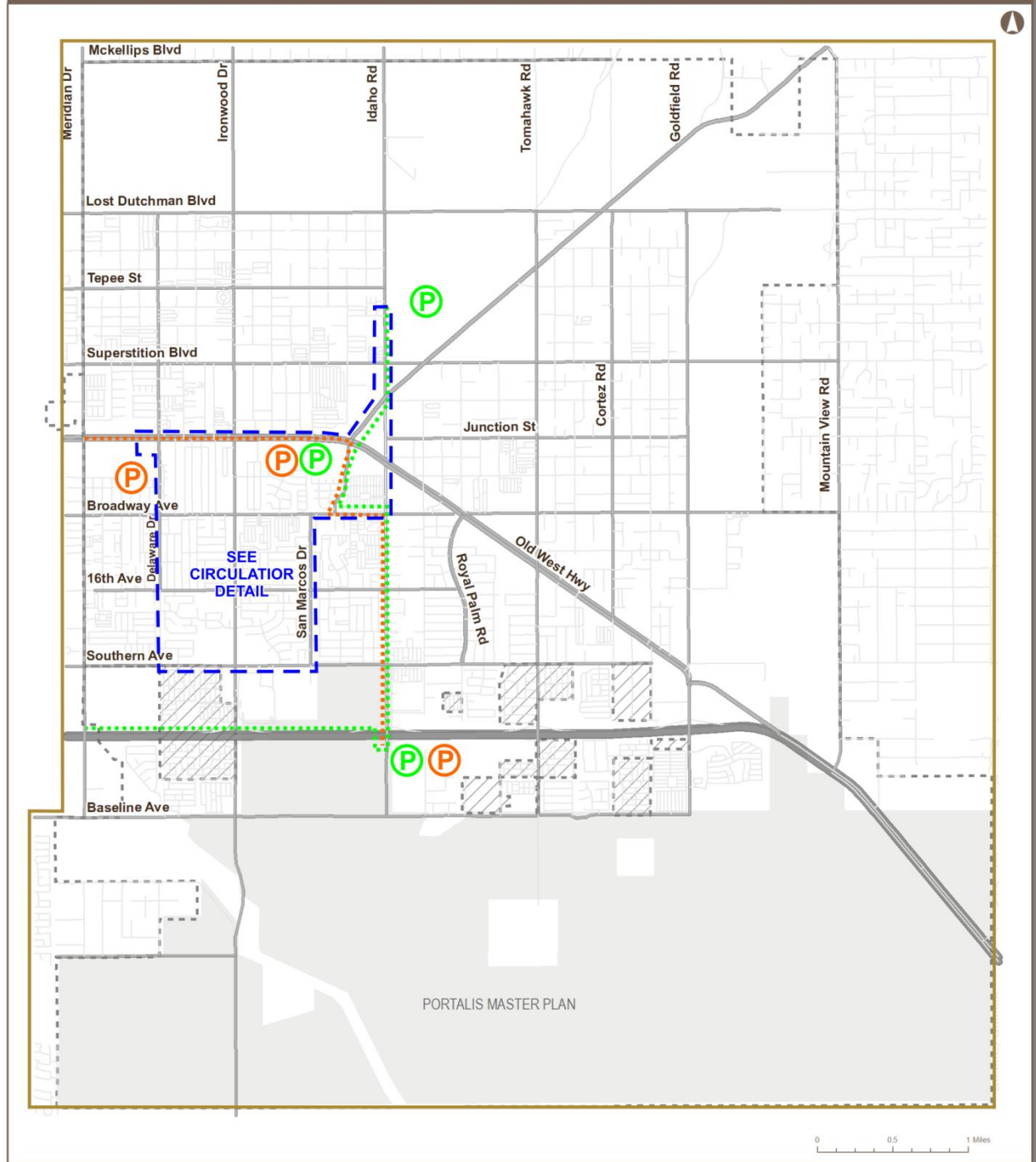
A follow-up research study could be conducted to inventory the public- and private-sector transit vehicles currently based within the study area including those operated by area mobile home parks and the senior center, and open discussion with the owners and operators regarding the feasibility of some sort of “vehicle pooling” arrangement following the “Arizona Rides” model that would maximize the utility of the vehicles, provide additional income to the vehicle owners, and provide more near-term transit options for study area residents.

### **60,000 POPULATION THRESHOLD SERVICE**

The logical “starter” services to implement are a local circulator serving the area of the City having the highest combined residential and employment density, together with regional commuter services connecting the Study Area with Valley Metro and, hence, with the remainder of the Phoenix metropolitan area. Figure 10-1 presents an overview of these



FIGURE 10.1: DRAFT 60,000 POPULATION THRESHOLD SERVICE CONCEPTS

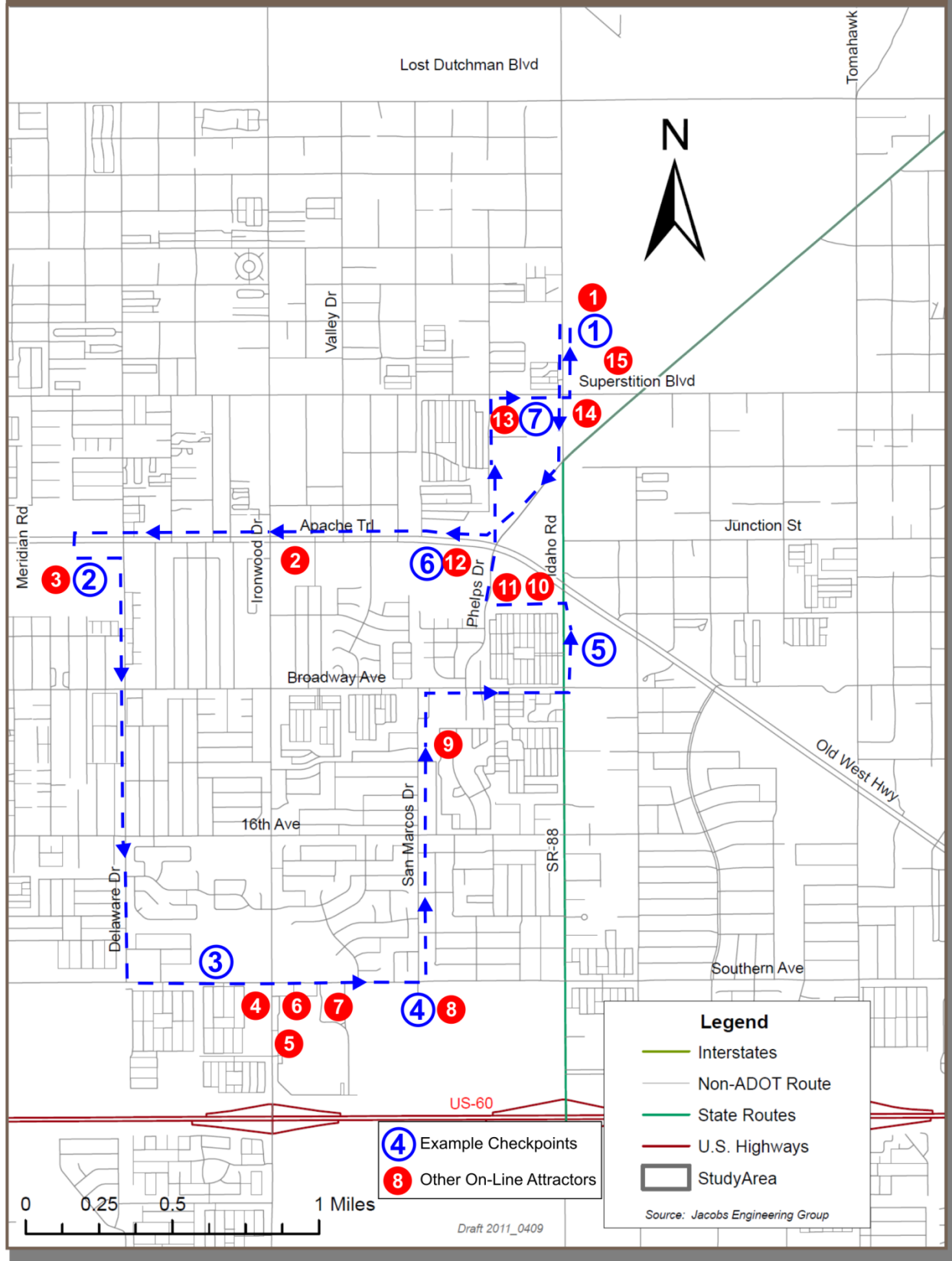


- LEGEND**
- Freeway
  - Study Roadway
  - Local Roadway
  - City Boundary
  - County Islands
  - Study Area
  - Candidate Park-and-Ride Locations
  - Candidate Park-and-Ride Locations
  - East Valley Connector
  - East Valley Connector Alternate Route
  - Local Circulator

Data Sources: City of Apache Junction, ALRIS, ADOT, ATIS



**FIGURE 10.2: DRAFT CORE AREA CIRCULATOR DETAIL**



concepts, including alternate routes for the regional service. If the East Valley Connector is implemented as an extension of—or initially as a connection to—the Valley Metro “Link” bus rapid transit (BRT) service, it could continue east on Main Street/Apache Trail into downtown Apache Junction. If the connector is established as a “Rapid” commuter bus operation, it would be more likely to follow US 60 west, emulating existing freeway-based “Rapid” services. Figure 10-2 presents a detail of the local circulator.

The concept for the Core Area Circulator is that this route would both serve the “core” area of the City having the highest existing residential and employment density (Refer to Figure 10.1) and would also serve as the “core” of the local transit system. Table 10.2 lists the locations of the proposed time point stops as well as other landmarks located along the draft route. Many transit circulators are operated for free, or for a very nominal fee. In some cities, the buses are “flagged” by those wishing to board and will stop to pick up and drop off passengers wherever it is safe.

Table 10.3 presents the draft circulator schedule, providing service on one-hour headways for 12 hours per service day. This service could be provided with a single vehicle; however entry-level operations typically acquire two or more vehicles in order to have spares. As public response and ridership warrant, this counterclockwise loop could be complemented with a clockwise loop, doubling the hourly capacity of the service and enhancing the appeal for those making use of the bus for short trips along segments of the loop.

Figure 10.1 also depicts candidate locations of park-and-ride lots, color-coded to the routing of the regional service that would make use of them. The City is interested in developing a park-and-ride facility on Idaho Road south of US 60; the City has also suggested that the area in the vicinity of the Apache Junction Chamber of Commerce, which is adjacent to many restaurants and stores, would also make a good location for a park-and-ride lot and/or a transit hub.

### **75,000 POPULATION THRESHOLD SERVICE**

When the 75,000 population threshold is reached, the hypothetical transit system adds three routes to the local circulator, and establishes a transit hub in the vicinity of the Chamber of Commerce. Once an hour, the buses rendezvous at the hub to facilitate the transfer of passengers among the four routes. The routes could operate as “deviated fixed routes”, reducing the need for complementary paratransit service.



**TABLE 10.2: DRAFT CORE AREA CIRCULATOR LANDMARK LOCATIONS**

Map Key	Stop Location	Street Address	Latitude	Longitude
<b>Circulator Schedule Time Points</b>				
1	Multi-Generational Center	1035 N. Idaho Rd.	33.42418853268291	-111.54496192932129
2	Wal-Mart	2555 Apache Trail	33.413827613878425	-111.57459497451782
3	Apache Junction Medical Plaza	2080 W Southern Ave	33.3933855	-111.5686915
4	Cactus Canyon Jr. High	801 West Southern Avenue	33.3933313	-111.5552629
5	Central Arizona College	273 Old West Highway	33.41055878747152	-111.54297709465027
6	Chamber of Commerce	567 W. Apache Trail	33.4150035	-111.5552736
7	Post Office	151 W Superstition Blvd.	33.42181557054702	-111.54749393463135
<b>Other Circulator Route Landmarks</b>				
1	Public Library	1177 North Idaho Road	33.425495872790236	-111.54579877853393
2	Food City	1477 West Apache Trail	33.414060457092965	-111.56184911727905
3	Safeway	3185 Apache Trail	33.4150406	-111.579807
4	Walgreens	2440 South Ironwood Drive	33.391485	-111.564177
5	Apache Junction High School	2525 South Ironwood Drive	33.3896936126107	-111.5627932548523
6	Performing Arts Center	2525 South Ironwood Road	33.39269897237049	-111.56153798103332
7	Superstition Shadows Aquatic Center	1091 W. Southern Avenue	33.39260043763253	-111.55787408351898
8	Desert Shadows Middle School	801 W. Southern Avenue	33.3933313	-111.5552629
9	Avalon Elementary School	1045 South San Marcos Drive	33.40510449913224	-111.55439257621765
10	Fry's	185 W. Apache Trail	33.412287	-111.549178
11	Wells Fargo Bank	231 South Phelps Drive	33.412690255358676	-111.55007421970367
12	CVS Pharmacy	325 Apache Trail	33.4141365787777	-111.54960751533508
13	Social Security Administration	253 West Superstition Boulevard	33.422030482996384	-111.54896378517151
14	ADOT DMV	575 N. Idaho Rd Ste 600	33.4210007	-111.5445328
15	City Hall/Municipal Court	300 E. Superstition Blvd.	33.42306474171844	-111.5426230430603





**TABLE 10.3: DRAFT CORE AREA CIRCULATOR SCHEDULE**

Stops									Total
Mileage		0.75	0.5	2.5	2	0.75	1.5	0.75	8.75
Elapsed Time	60	4	3	10	8	4	6	4	
Stops	Transit Hub	Post Office	Multi-Generational Center	Wal-Mart	Medical Plaza	Cactus Canyon Jr. High	Central Arizona College	Transit Hub	
Map Key	1	2	3	4	5	6	7	1	
	6:30 AM	6:34 AM	6:37 AM	6:47 AM	6:55 AM	6:59 AM	7:05 AM	7:09 AM	
	7:30 AM	7:34 AM	7:37 AM	7:47 AM	7:55 AM	7:59 AM	8:05 AM	8:09 AM	
	8:30 AM	8:34 AM	8:37 AM	8:47 AM	8:55 AM	8:59 AM	9:05 AM	9:09 AM	
	9:30 AM	9:34 AM	9:37 AM	9:47 AM	9:55 AM	9:59 AM	10:05 AM	10:09 AM	
	10:30 AM	10:34 AM	10:37 AM	10:47 AM	10:55 AM	10:59 AM	11:05 AM	11:09 AM	
	11:30 AM	11:34 AM	11:37 AM	11:47 AM	11:55 AM	11:59 AM	12:05 PM	12:09 PM	
	12:30 PM	12:34 PM	12:37 PM	12:47 PM	12:55 PM	12:59 PM	1:05 PM	1:09 PM	
	1:30 PM	1:34 PM	1:37 PM	1:47 PM	1:55 PM	1:59 PM	2:05 PM	2:09 PM	
	2:30 PM	2:34 PM	2:37 PM	2:47 PM	2:55 PM	2:59 PM	3:05 PM	3:09 PM	
	3:30 PM	3:34 PM	3:37 PM	3:47 PM	3:55 PM	3:59 PM	4:05 PM	4:09 PM	
	4:30 PM	4:34 PM	4:37 PM	4:47 PM	4:55 PM	4:59 PM	5:05 PM	5:09 PM	
	5:30 PM	5:34 PM	5:37 PM	5:47 PM	5:55 PM	5:59 PM	6:05 PM	6:09 PM	



Figure 10.3 presents an overview of the hypothetical 75,000 population threshold system, and Figures 10.4 through 10.6 present drafts of the three suggested routes with key landmarks along each route identified. Tables 10.4 through 10.6 present the accompanying proposed schedules.

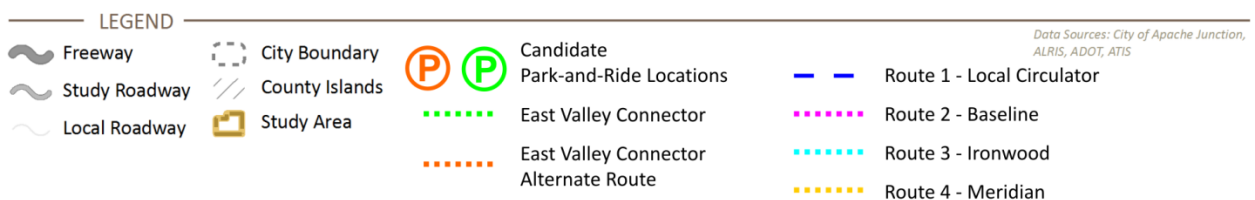
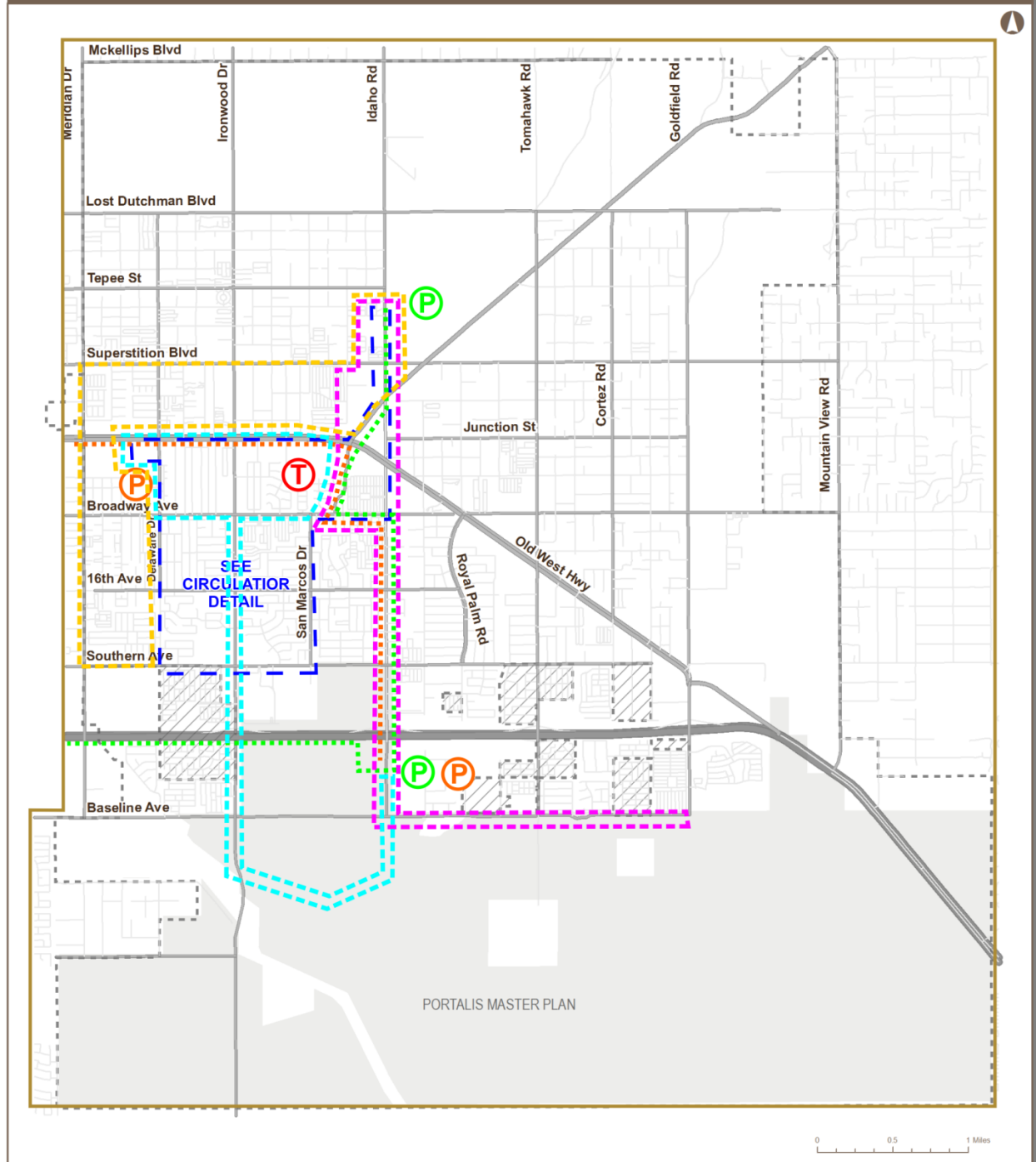
Valley Metro routes serving portions of the Valley where the characteristics of the roadways and corridors resembled those of Apache Junction were analyzed to determine average travel times between stops, providing for dwell times at the time point locations. Draft route loops were chosen that could be easily driven in less than an hour, allowing for flag stops and route deviations.

Note that an origin-destination study was beyond the scope of this project, and the suggested routes are based on efforts to serve key landmarks and reach all the areas having the combined residential and employment densities to support the service. An effort was also made to avoid suggesting routing that would result in left turns on to a major arterial from a side street at a non-signalized intersection or other awkward or unsafe movements.

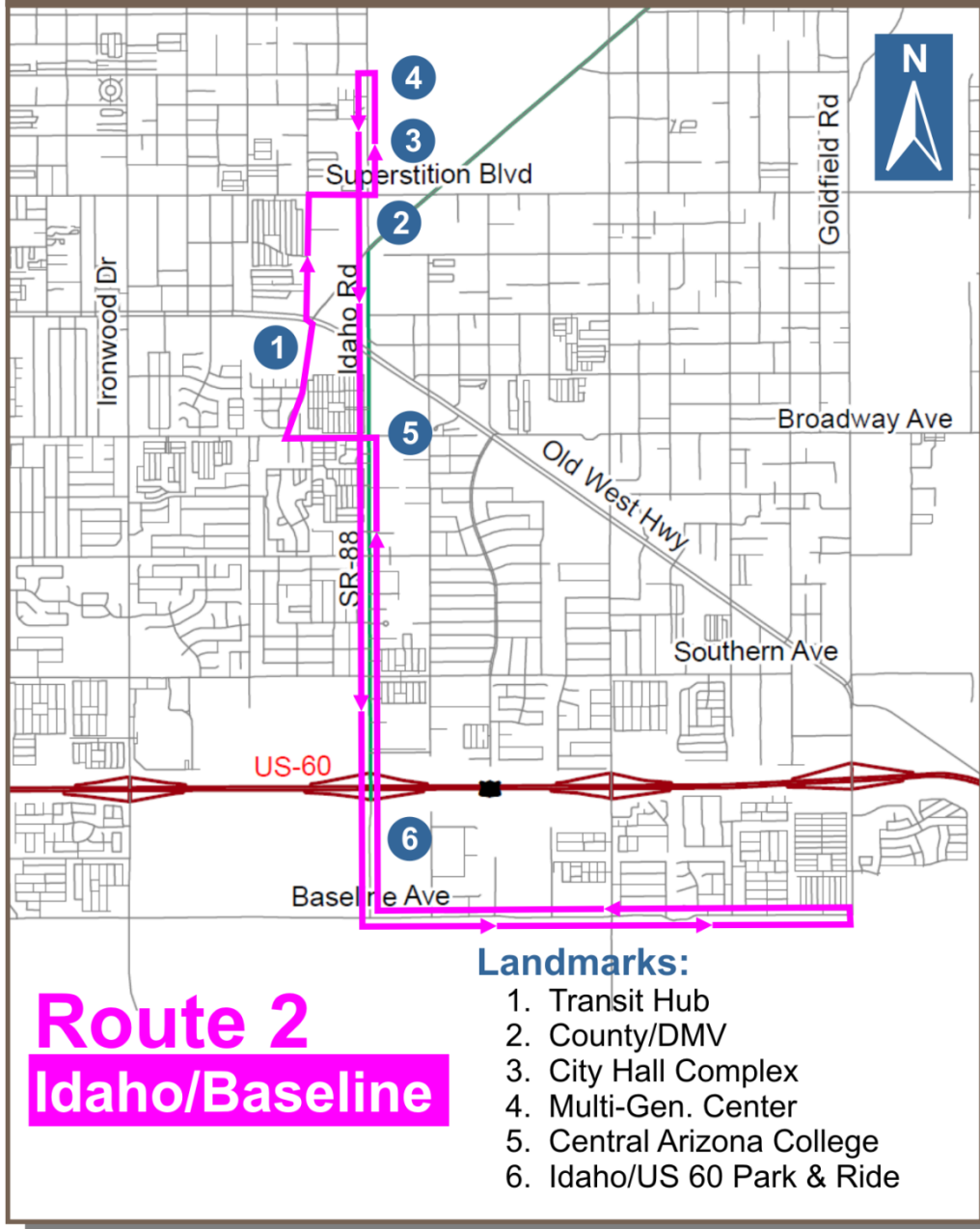
As proposed, Route 2, above, would provide service in both directions on Idaho Road between Superstition and Baseline, and would link the City's Public Works department with the main City Hall Complex. The route would also serve the local Pinal County offices and ADOT's Department of Motor Vehicles office, as well as the Central Arizona College campus and the proposed park-and-ride facility on Idaho Road south of US 60. Restaurants and shops within walking distance of the Transit Hub would also be served.



FIGURE 10.3: DRAFT 75,000 POPULATION THRESHOLD SERVICE CONCEPTS



**FIGURE 10.4: CONCEPT FOR ROUTE 2 – IDAHO/BASELINE**



Source: R. H. Bohannon & Associates



**TABLE 10.4: DRAFT ROUTE 2- IDAHO/BASELINE SCHEDULE**

Stops							Totals
Mileage		1.2	3.25	2.5	4	1.2	12.15
Elapsed Time	60	5	13	10	16	5	49
	Transit Hub	Multi-Gen. Center	Idaho/ US 60 PNR	Baseline/ Goldfield	Central Arizona College	Transit Hub	
	6:30 AM	6:35 AM	6:48 AM	6:58 AM	7:14 AM	7:19 AM	
	7:30 AM	7:35 AM	7:48 AM	7:58 AM	8:14 AM	8:19 AM	
	8:30 AM	8:35 AM	8:48 AM	8:58 AM	9:14 AM	9:19 AM	
	9:30 AM	9:35 AM	9:48 AM	9:58 AM	10:14 AM	10:19 AM	
	10:30 AM	10:35 AM	10:48 AM	10:58 AM	11:14 AM	11:19 AM	
	11:30 AM	11:35 AM	11:48 AM	11:58 AM	12:14 PM	12:19 PM	
	12:30 PM	12:35 PM	12:48 PM	12:58 PM	1:14 PM	1:19 PM	
	1:30 PM	1:35 PM	1:48 PM	1:58 PM	2:14 PM	2:19 PM	
	2:30 PM	2:35 PM	2:48 PM	2:58 PM	3:14 PM	3:19 PM	
	3:30 PM	3:35 PM	3:48 PM	3:58 PM	4:14 PM	4:19 PM	
	4:30 PM	4:35 PM	4:48 PM	4:58 PM	5:14 PM	5:19 PM	
	5:30 PM	5:35 PM	5:48 PM	5:58 PM	6:14 PM	6:19 PM	

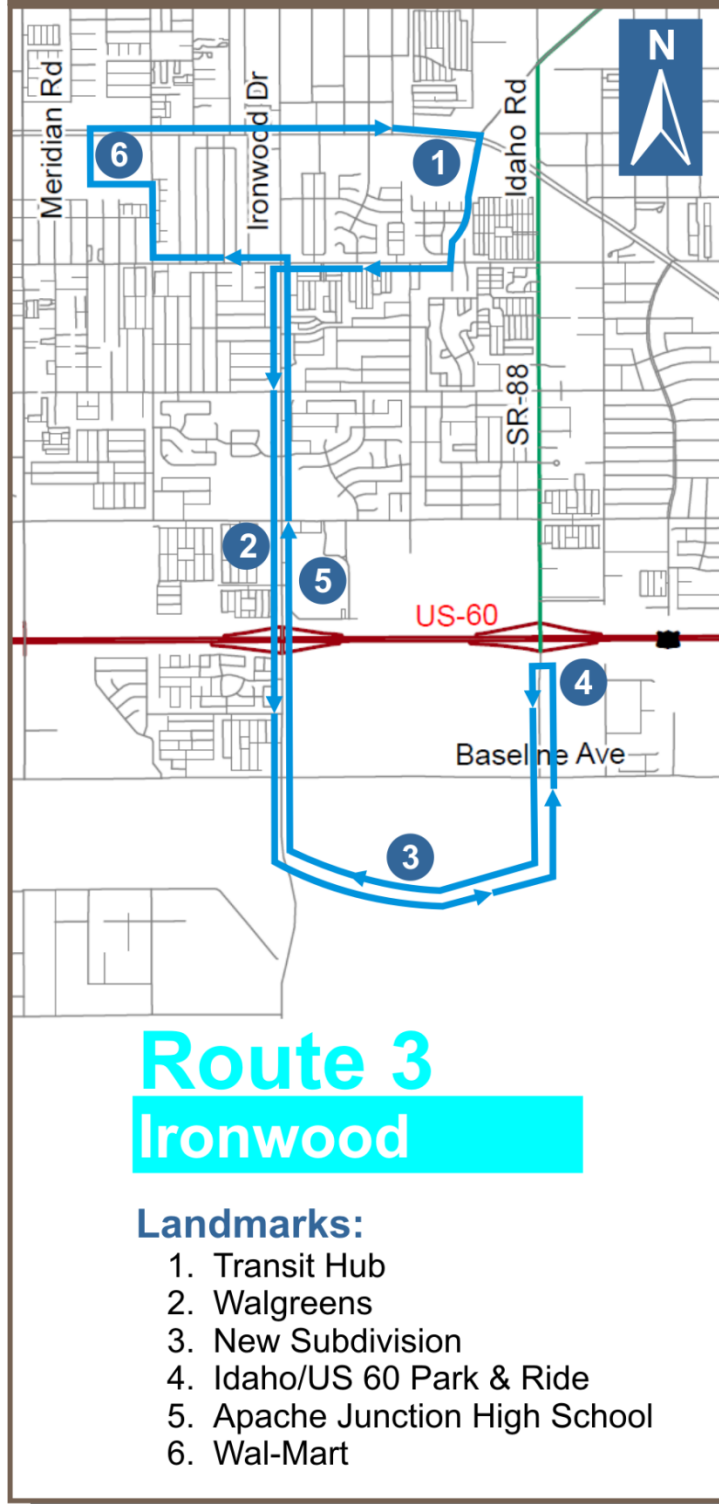
Table 10.4 above lists a Route 2 schedule with one-hour headways. The 49-minute running time allows for extra dwell time en-route—to load or unload a wheelchair passenger, for example—or to deviate from the route for a pick-up or drop-off. The “padding” at the end of the schedule allows the next hour’s trip to depart on schedule.

Figure 10.5 presents a concept for Route 3 – Ironwood. Route 3 would provide service on Ironwood in both directions between Broadway and Baseline, together with service in both directions through the new development south of Baseline, and a connection to the park-and-ride facility on Idaho Road. Route 3 would provide eastbound service on Apache Trail between Wal-Mart and the Transit Hub, connecting the Hub with Wal-Mart, Walgreens, Apache Junction High School, and other activity centers.

As Table 10.5 shows, the projected run-time, including time point stops, for Route 3 is 44 minutes, with 16 minutes of padding at the end of each hour. This would allow for extra time to deviate from the main route, or to assist mobility-limited persons in boarding or alighting from the bus.



FIGURE 10.5: CONCEPT FOR ROUTE 3 – IRONWOOD



Source: R. H. Bohannon & Associates





**TABLE 10.5: DRAFT ROUTE 3- IRONWOOD SCHEDULE**

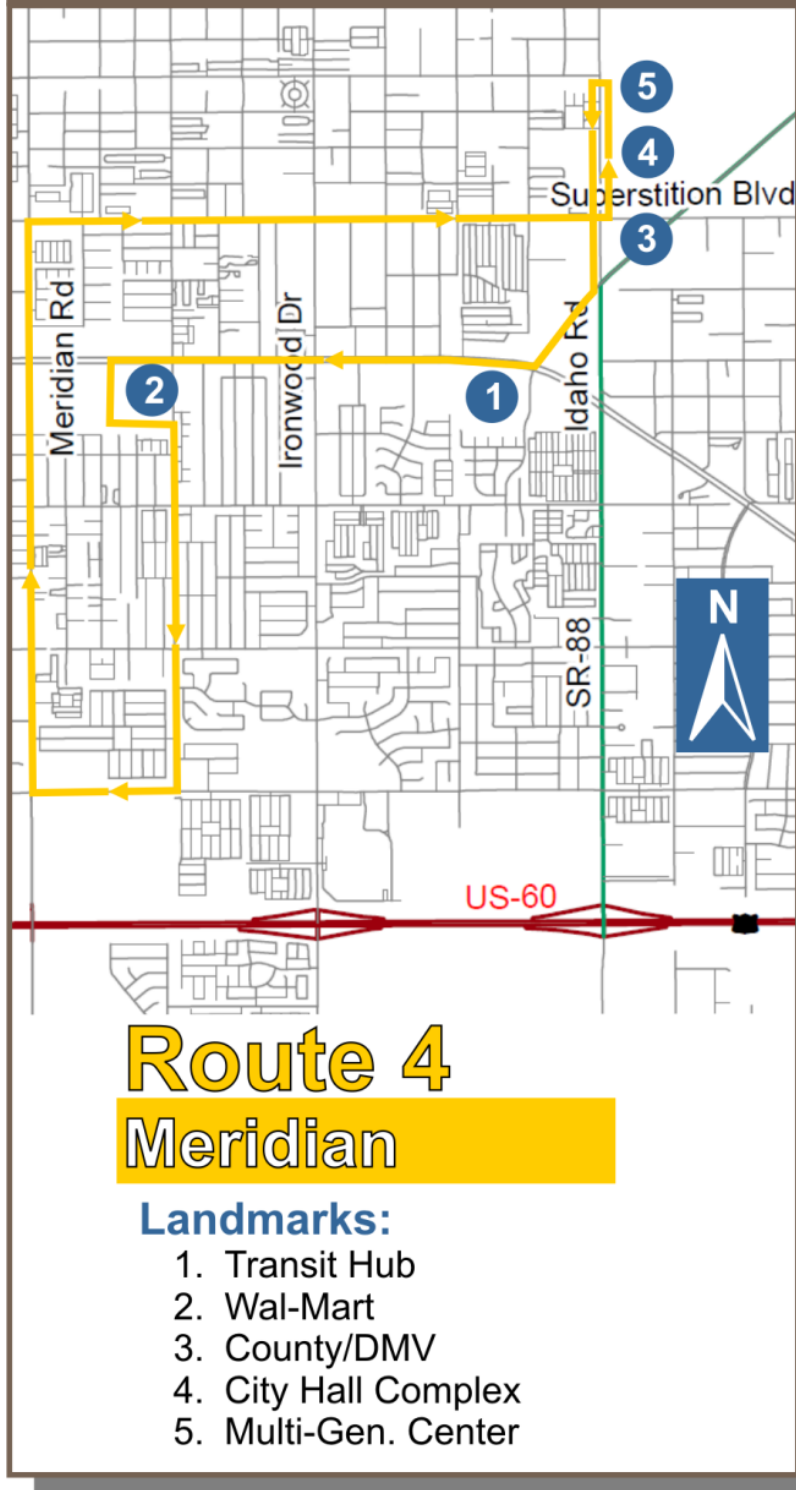
Stops							Totals
Mileage		3.15	1.5	2.5	2.25	1.5	10.9
Elapsed Time	60	13	6	10	9	6	44
	Transit Hub	Ironwood/ Baseline	Idaho/ US 60 PNR	Ironwood/ Southern	Wal-Mart	Transit Hub	
	6:30 AM	6:43 AM	6:49 AM	6:59 AM	7:08 AM	7:14 AM	
	7:30 AM	7:43 AM	7:49 AM	7:59 AM	8:08 AM	8:14 AM	
	8:30 AM	8:43 AM	8:49 AM	8:59 AM	9:08 AM	9:14 AM	
	9:30 AM	9:43 AM	9:49 AM	9:59 AM	10:08 AM	10:14 AM	
	10:30 AM	10:43 AM	10:49 AM	10:59 AM	11:08 AM	11:14 AM	
	11:30 AM	11:43 AM	11:49 AM	11:59 AM	12:08 PM	12:14 PM	
	12:30 PM	12:43 PM	12:49 PM	12:59 PM	1:08 PM	1:14 PM	
	1:30 PM	1:43 PM	1:49 PM	1:59 PM	2:08 PM	2:14 PM	
	2:30 PM	2:43 PM	2:49 PM	2:59 PM	3:08 PM	3:14 PM	
	3:30 PM	3:43 PM	3:49 PM	3:59 PM	4:08 PM	4:14 PM	
	4:30 PM	4:43 PM	4:49 PM	4:59 PM	5:08 PM	5:14 PM	
	5:30 PM	5:43 PM	5:49 PM	5:59 PM	6:08 PM	6:14 PM	

Figure 10.6 presents a concept for Route 4 – Meridian. Route 4 would provide additional service to the area bounded by Meridian on the West, Apache Trail on the North, Ironwood on the East, and Broadway on the South that has a relatively high combined residential and employment density. This area is also the location of Wal-Mart and other significant trip generators. Route 4 would provide Westbound service on Apache Trail between the Transit Hub and Wal-Mart, complementing the Eastbound service provided by Route 3, and would serve the Westernmost portion of the core area.

As Table 10.6 shows, Route 4 is the shortest of the three initial loops and is estimated to take only 37 minutes to complete. As with the other two loops, the padding at the end of the loop will allow for additional time to board and alight mobility-limited passengers, or to deviate from the established route. In the following section of this Chapter, it is proposed to lengthen Route 4 by extending it down to Baseline when the 130,000 population threshold is reached. This extension would make Route 4 more similar in length to the other proposed loops.



FIGURE 10.6. CONCEPT FOR ROUTE 4 – MERIDIAN



Source: R. H. Bohannon & Associates



**TABLE 10.6: DRAFT ROUTE 4- MERIDIAN SCHEDULE**

Stops							Totals
Mileage		1.5	2	2	2.5	1.2	9.2
Elapsed Time	60	6	8	8	10	5	37
	Transit Hub	Wal-Mart	Southern/ Meridian	Superstition/ Meridian	Multi- Generational Center	Transit Hub	
	6:30 AM	6:36 AM	6:44 AM	6:52 AM	7:02 AM	7:07 AM	
	7:30 AM	7:36 AM	7:44 AM	7:52 AM	8:02 AM	8:07 AM	
	8:30 AM	8:36 AM	8:44 AM	8:52 AM	9:02 AM	9:07 AM	
	9:30 AM	9:36 AM	9:44 AM	9:52 AM	10:02 AM	10:07 AM	
	10:30 AM	10:36 AM	10:44 AM	10:52 AM	11:02 AM	11:07 AM	
	11:30 AM	11:36 AM	11:44 AM	11:52 AM	12:02 PM	12:07 PM	
	12:30 PM	12:36 PM	12:44 PM	12:52 PM	1:02 PM	1:07 PM	
	1:30 PM	1:36 PM	1:44 PM	1:52 PM	2:02 PM	2:07 PM	
	2:30 PM	2:36 PM	2:44 PM	2:52 PM	3:02 PM	3:07 PM	
	3:30 PM	3:36 PM	3:44 PM	3:52 PM	4:02 PM	4:07 PM	
	4:30 PM	4:36 PM	4:44 PM	4:52 PM	5:02 PM	5:07 PM	
	5:30 PM	5:36 PM	5:44 PM	5:52 PM	6:02 PM	6:07 PM	

### 130,000 POPULATION THRESHOLD SERVICE

Figure 10.7 presents an overview of what local transit service in the Study Area might look like when the 130,000 population threshold is reached. The Route 1 Circulator would remain as proposed at the 60,000 population level, with the detail depicted in Figure 10.2. Routes 2 – Idaho/Baseline, and 3 – Ironwood, would remain as depicted in Figures 10.4 and 10.5, respectively.

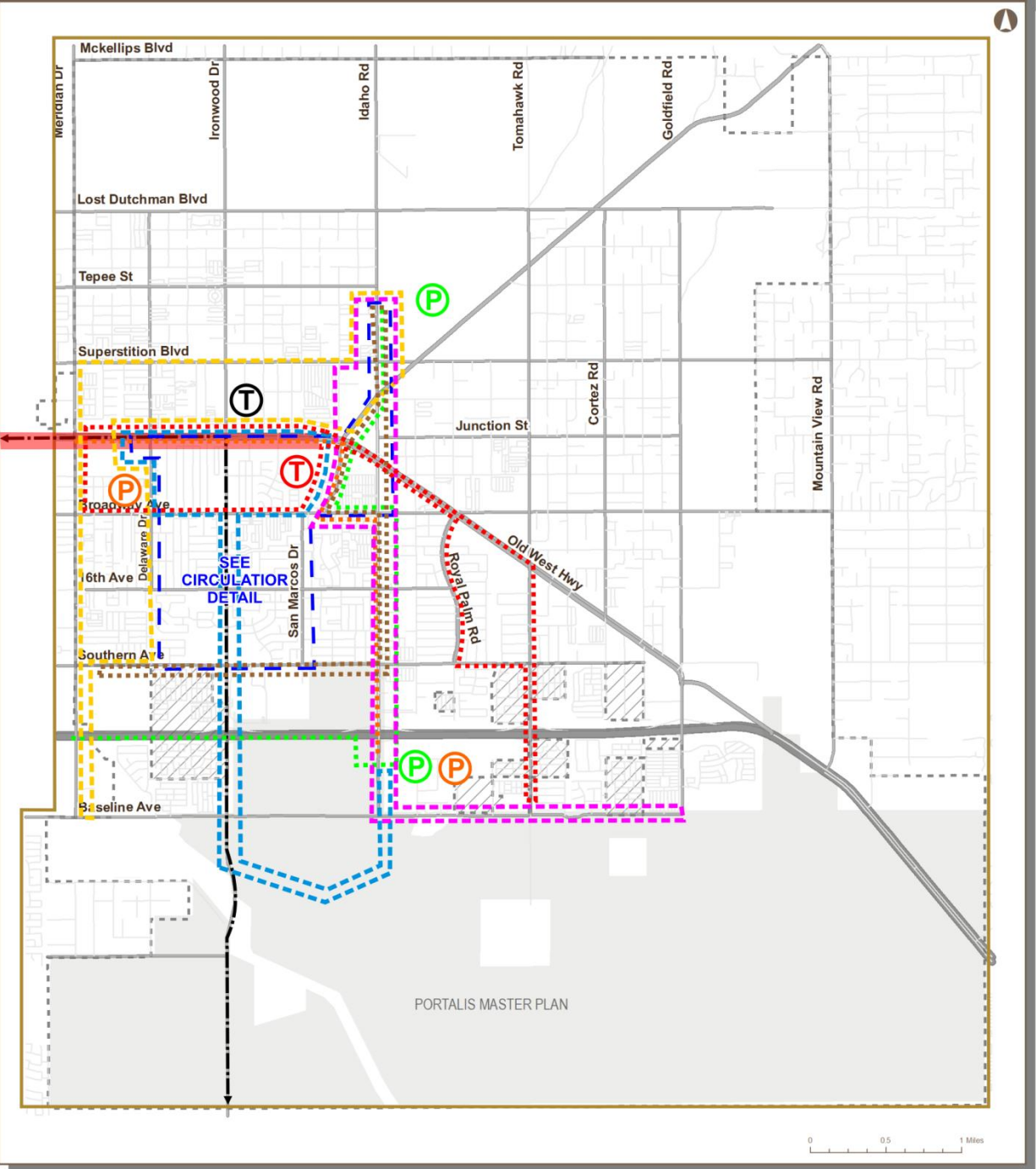
The two alternate routes for the East Valley Connector are also shown. By the time the 130,000 population threshold is reached, the East Valley Connector might take the form of a high-capacity transit service. Such a service could consist of one of the following:

- ◆ A “Link” bus rapid transit connection from the Transit Hub to the end of the Metro light rail line in Mesa
- ◆ An extension of the electrified Metro light rail system itself

The bus rapid transit and rail services would operate throughout the day, with more frequent headways provided during peak travel periods. These services could also be supplemented by “Rapid” commuter bus service operating over US 60 into the downtown Phoenix area.



FIGURE 10.7: DRAFT 130,000 POPULATION THRESHOLD SERVICE CONCEPTS

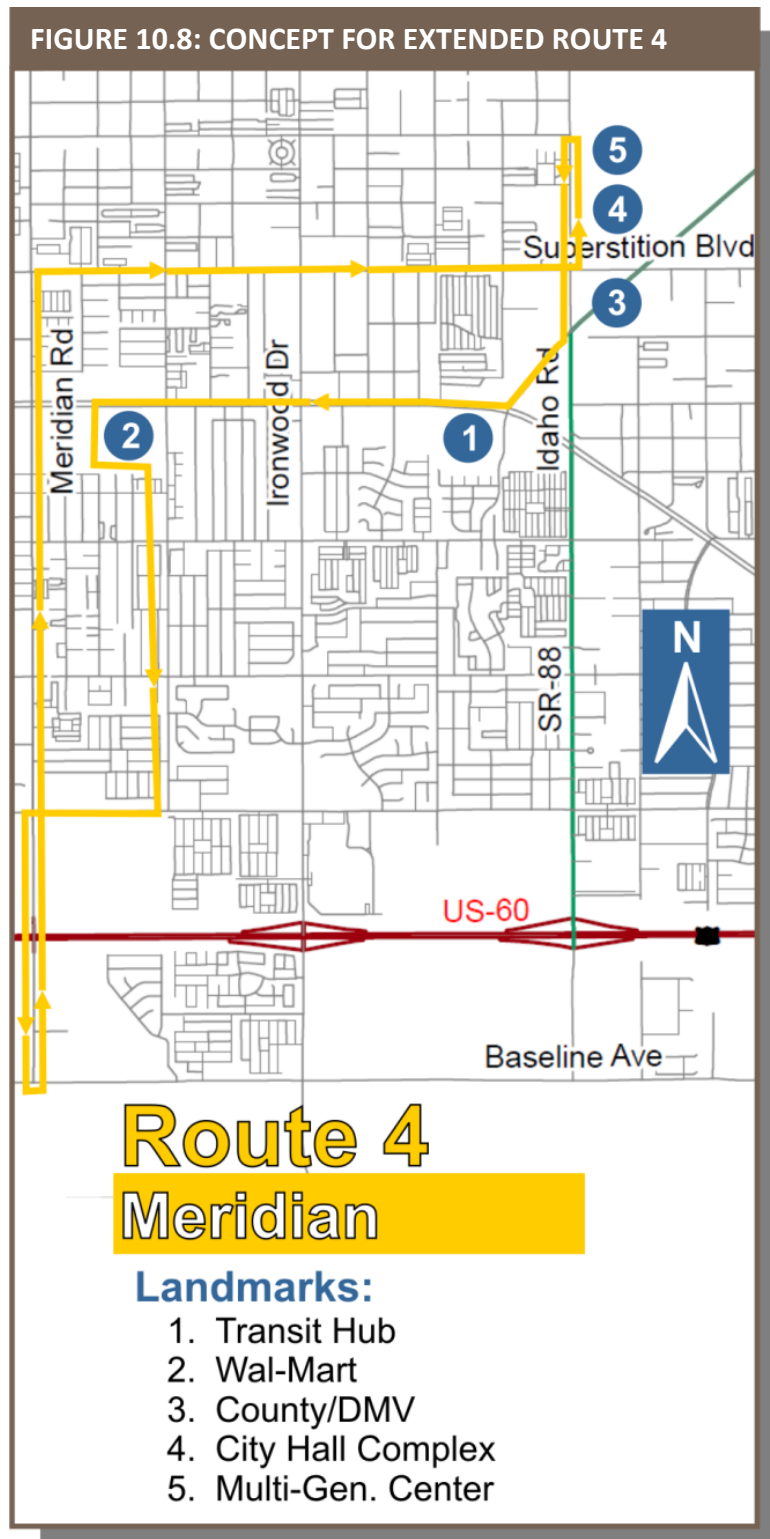


LEGEND			
	Freeway		City Boundary
	Study Roadway		County Islands
	Local Roadway		Study Area
	High Capacity Corridor (Also recommended by Pinal County Study)		Transit Center
	San Tan - Apache Junction - Phoenix Express Bus Route Recommended by Pinal County Study		Transit Center recommended by Pinal County Study
			Candidate Park-and-Ride Locations
			East Valley Connector
			East Valley Connector Alternate Route
			Route 1 - Local Circulator
			Route 2 - Baseline
			Route 3 - Ironwood
			Route 4 - Meridian
			Route 5 - Idaho/Southern
			Route 6 - Tomahawk/Broadway

Data Sources: City of Apache Junction,  
ALRIS, ADOT, ATIS



A concept for a restructured Route 4 – Meridian to be implemented at the 130,000 population threshold is presented in Figure 10.8.



Source: R. H. Bohannon & Associates



Table 10.7 presents a revised schedule for the extended Route 4 service.

**TABLE 10.7: DRAFT ROUTE 4- EXTENDED MERIDIAN SCHEDULE**

Stops							Totals
Mileage		1.5	3	3	2.5	1.2	11.2
Elapsed Time	60	6	12	12	10	5	45
	Transit Hub	Wal-Mart	Baseline/ Meridian	Superstition/ Meridian	Multi- Generational Center	Transit Hub	
	6:30 AM	6:36 AM	6:48 AM	7:00 AM	7:10 AM	7:15 AM	
	7:30 AM	7:36 AM	7:48 AM	8:00 AM	8:10 AM	8:15 AM	
	8:30 AM	8:36 AM	8:48 AM	9:00 AM	9:10 AM	9:15 AM	
	9:30 AM	9:36 AM	9:48 AM	10:00 AM	10:10 AM	10:15 AM	
	10:30 AM	10:36 AM	10:48 AM	11:00 AM	11:10 AM	11:15 AM	
	11:30 AM	11:36 AM	11:48 AM	12:00 PM	12:10 PM	12:15 PM	
	12:30 PM	12:36 PM	12:48 PM	1:00 PM	1:10 PM	1:15 PM	
	1:30 PM	1:36 PM	1:48 PM	2:00 PM	2:10 PM	2:15 PM	
	2:30 PM	2:36 PM	2:48 PM	3:00 PM	3:10 PM	3:15 PM	
	3:30 PM	3:36 PM	3:48 PM	4:00 PM	4:10 PM	4:15 PM	
	4:30 PM	4:36 PM	4:48 PM	5:00 PM	5:10 PM	5:15 PM	
	5:30 PM	5:36 PM	5:48 PM	6:00 PM	6:10 PM	6:15 PM	

Even with the extension to Baseline, as Table 10.8 shows, the restructured Route 4 loop can be completed in 45 minutes, allowing ample padding at the end of the hour for route deviations and longer stop dwell times as needed.

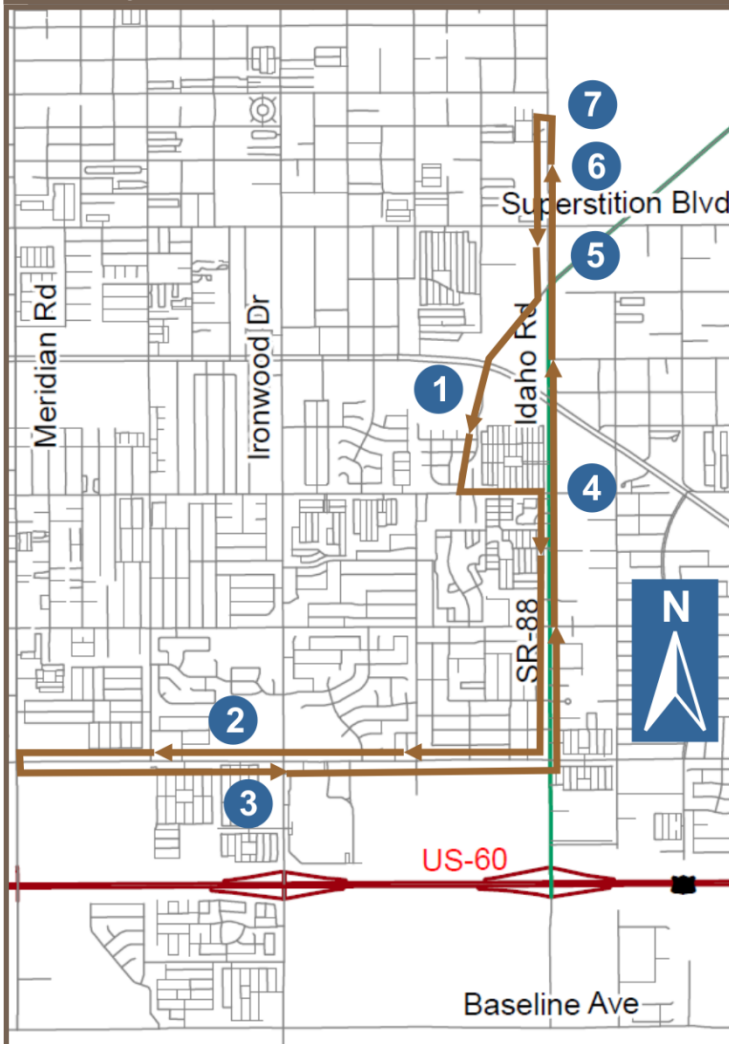
At the 130,000 population threshold level, it is envisioned that two additional loop routes would be added to the hypothetical local transit system. The first of these, Route 5 – Idaho/Southern, is depicted in Figure 10.9. This route will also provide service in both directions on Idaho Road between Superstition and Southern, complementing that provided by Route 2, and will provide additional service to the medical facilities located on Southern west of Ironwood, complementing the service to these facilities provided by Route 1. Additional service to the ADOT DMV and Central Arizona College will also be provided. Route 5 provides additional service to an area with increasingly high population and employment density located between Meridian and Ironwood, north of US 60, south of Southern, (Refer to Figure 8.3)

Table 10.87 shows that the Route 5 loop is estimated to require only 38 minutes to complete. This provides ample padding for route deviation, and would also allow for extending the route down Idaho to the park-and-ride facility if desired.





**FIGURE 10.9. CONCEPT FOR ROUTE 5 –  
IDAHO/SOUTHERN**



## **Route 5**

### **Idaho/Southern**

#### **Landmarks:**

1. Transit Hub
2. Apache Junction Medical Plaza
3. Walgreens
4. Central Arizona College
5. County/DMV
6. City Hall Complex
7. Multi-Gen. Center

Source: R. H. Bohannon & Associates



**TABLE 10.8. DRAFT ROUTE 5- IDAHO/SOUTHERN SCHEDULE**

Stops							Totals
Mileage		1.75	2	3	1.5	1.2	9.45
Elapsed Time	60	7	8	12	6	5	38
	Transit Hub	Idaho/Southern	Meridian/Southern	Central Arizona College	Multi-Generational Center	Transit Hub	
	6:30 AM	6:37 AM	6:45 AM	6:57 AM	7:03 AM	7:08 AM	
	7:30 AM	7:37 AM	7:45 AM	7:57 AM	8:03 AM	8:08 AM	
	8:30 AM	8:37 AM	8:45 AM	8:57 AM	9:03 AM	9:08 AM	
	9:30 AM	9:37 AM	9:45 AM	9:57 AM	10:03 AM	10:08 AM	
	10:30 AM	10:37 AM	10:45 AM	10:57 AM	11:03 AM	11:08 AM	
	11:30 AM	11:37 AM	11:45 AM	11:57 AM	12:03 PM	12:08 PM	
	12:30 PM	12:37 PM	12:45 PM	12:57 PM	1:03 PM	1:08 PM	
	1:30 PM	1:37 PM	1:45 PM	1:57 PM	2:03 PM	2:08 PM	
	2:30 PM	2:37 PM	2:45 PM	2:57 PM	3:03 PM	3:08 PM	
	3:30 PM	3:37 PM	3:45 PM	3:57 PM	4:03 PM	4:08 PM	
	4:30 PM	4:37 PM	4:45 PM	4:57 PM	5:03 PM	5:08 PM	
	5:30 PM	5:37 PM	5:45 PM	5:57 PM	6:03 PM	6:08 PM	

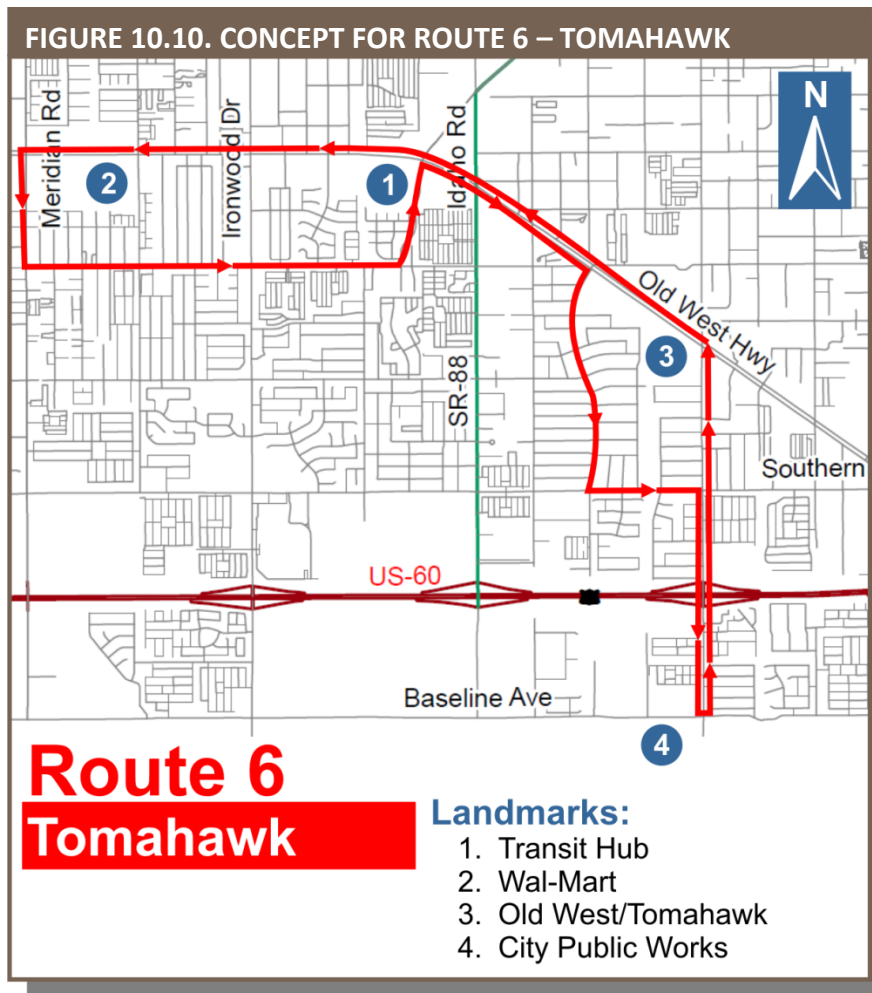
As Figure 8.3 in Chapter 1 shows, at the 130,000 population threshold level, combined population and employment densities in the area immediately east of Idaho Road and south of Old West Highway are forecasted to increase to levels that would support the introduction of transit service. Figure 10.10 presents a concept for a Route 6 – Tomahawk that is designed to address this potential transit demand. This loop would also provide additional service along Apache Trail and Broadway and link the residential areas east of Idaho Road with the downtown Transit Hub and the remainder of the proposed local transit system.

Table 10.9 lists the proposed schedule for Route 6 – Tomahawk. The 10.65-mile loop is estimated to take 43 minutes to complete including the dwell times for the stops.

#### LOCAL ROUTE CONCEPTS SUMMARY

By the time Apache Junction reaches the 130,000 population threshold, adjoining portions of Mesa may have filled in and achieved density levels that would warrant the extension of Valley Metro bus routes eastward into the area. Hence, East/West arterials such as Apache Trail, Southern, and Baseline might be served by regional Valley Metro routes. In the future, a “Baseline Corridor” may emerge as more residential and commercial activity concentrate in that area. A Valley Metro route might be extended east from the transit center along Baseline Avenue to Tomahawk.





Source: R. H. Bohannon & Associates

Local service within Apache Junction would then consist primarily of North/South routes or loops designed primarily to serve North/South roadways and connect with the East/West services provided by Valley Metro. However, a need will always exist for service to local schools, shopping, entertainment, and medical facilities, and this need can be most successfully addressed by one or more local circulator or loop routes.

### REGIONAL OPTIONS

Just as population and density thresholds can be used to determine milestones for implementing services citywide, they can be used for extending service to newer areas. Deviated fixed route service or dial-a-ride service can be extended east on US 60 toward Gold Canyon, for example. Peak period only “commuter bus” service can be extended to outlying areas while the core of the city receives service throughout the day. As the *Pinal County*



**TABLE 10.9. DRAFT ROUTE 6- TOMAHAWK SCHEDULE**

Stops							Totals
Mileage		1	2.5	1.65	3.5	2	10.65
Elapsed Time	60	4	10	7	14	8	43
	Transit Hub	Old West/ Royal Palm	Tomahawk/ Baseline	Old West/ Tomahawk	Broadway/ Meridian	Transit Hub	
	6:30 AM	6:34 AM	6:44 AM	6:51 AM	7:05 AM	7:13 AM	
	7:30 AM	7:34 AM	7:44 AM	7:51 AM	8:05 AM	8:13 AM	
	8:30 AM	8:34 AM	8:44 AM	8:51 AM	9:05 AM	9:13 AM	
	9:30 AM	9:34 AM	9:44 AM	9:51 AM	10:05 AM	10:13 AM	
	10:30 AM	10:34 AM	10:44 AM	10:51 AM	11:05 AM	11:13 AM	
	11:30 AM	11:34 AM	11:44 AM	11:51 AM	12:05 PM	12:13 PM	
	12:30 PM	12:34 PM	12:44 PM	12:51 PM	1:05 PM	1:13 PM	
	1:30 PM	1:34 PM	1:44 PM	1:51 PM	2:05 PM	2:13 PM	
	2:30 PM	2:34 PM	2:44 PM	2:51 PM	3:05 PM	3:13 PM	
	3:30 PM	3:34 PM	3:44 PM	3:51 PM	4:05 PM	4:13 PM	
	4:30 PM	4:34 PM	4:44 PM	4:51 PM	5:05 PM	5:13 PM	
	5:30 PM	5:34 PM	5:44 PM	5:51 PM	6:05 PM	6:13 PM	

*Feasibility Transit Study* suggests, a commuter bus route could be operated between San Tan Valley and the end of the METRO light rail line in Mesa by way of Apache Junction.

Park-and-ride lots at the extents of fixed-route or high-capacity lines, can be complemented by dial-a-ride service into the newer neighborhoods to bring mobility-limited persons within reach of the other services. Residents of these outlying areas would also have easier access to Apache Junction shopping, medical, and higher education facilities.

As the Easternmost portion of the Phoenix metropolitan area, Apache Junction is a logical gateway to the metropolitan area for areas further east, such as Gold Canyon, Superior, Miami, Globe, Safford, and other communities along the US 60 and US 70 corridors, as well as communities in Eastern Pinal County and the new developments in the Superstition Vistas area south of Apache Junction. Rural transit services from these areas could connect in Apache Junction with the future terminus of a high capacity bus rapid transit and/or light rail network serving the metropolitan area. Rural transit services could make these connections at the downtown Transit Hub. Motorists and carpools from outlying areas could use the park-and-ride facilities located either downtown or on Idaho Road south of US 60 and continue their travel into Mesa, Tempe, or Phoenix on public transit—thus avoiding the hassles of big-city traffic and the expense of downtown parking.



## 11. SOURCES OF FUNDING

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This chapter discusses several sources of funding that have been used for funding public transportation programs in Arizona. Federal, State, and local sources of funding are summarized, together with the types of public transportation for which they are applicable.

### FEDERAL SOURCES OF FUNDING

Significant federal sources of funding grants are overseen and managed by the Federal Transit Administration (FTA); these funds are administered in Arizona by ADOT. FTA funding levels are part of SAFETEA-LU.

The federal transit laws are contained in Title 49 of the United States Code, Chapter 53. The key transit grant provisions are covered in the following sections of Chapter 53:

- ◆ Section 5307: Urbanized Area Formula Grants
- ◆ Section 5309: Capital Investment Grants and Loans
- ◆ Section 5310: Formula Grants and Loans for Special Needs of Elderly Individuals and Individuals with Disabilities
- ◆ Section 5311: Formula Grants for Other Than Urbanized Areas
- ◆ Section 5313: State Planning and Research Programs
- ◆ Section 5316: Job Access & Reverse Commute
- ◆ Section 5317: New Freedom

Sections 5307 and 5309 are applicable to local jurisdictions having populations greater than 50,000 and which have been designated—or included in—metropolitan planning areas. Although Apache Junction abuts the Phoenix metropolitan area, the City is not yet eligible for Section 5307 or Section 5309 funds. However, the City is eligible to apply for Section 5311 formula grants so long as the City's population remains below 50,000. Summaries of the programs follow:

### Section 5311 funds for rural transit

Section 5311 funds will pay up to 50 percent of the operating loss and 80 percent of the administrative expenses. These funds can also be used to purchase capital items such as vehicles. The percentage paid on capital has varied based on availability of funding, from 60 percent to 80 percent of the cost of the equipment. A match is required, and is generally provided by local sources, although a percentage can be other federal funds (e.g. aging services funds, welfare to work funds, etc).



### **Section 5310 Funds**

The City is also eligible to apply for a Section 5310 formula grant from over \$2.5 million in funds provided annually to ADOT by FTA. Recipients of Section 5310 funds include both public and private non-profit agencies providing transportation to seniors and special needs persons. Over 75 accessible vans are purchased annually using these funds. Over 100 contractors provide services that are supported with Section 5310 funding. Trips provided by these services include:

- ◆ Medical Appointments.
- ◆ Service Appointments such as banking, social services, etc.
- ◆ Special Needs delivery such as "Meals on Wheels".
- ◆ Shopping Trips.
- ◆ Adult Day Care Facilities.
- ◆ Employment.
- ◆ Education and Training.

Complete program guidelines and application forms are available from ADOT's Public Transportation Division and may be downloaded from their Web site at [www.azdot.gov/MPD/Transit\\_Programs\\_Grants/Section5310.asp](http://www.azdot.gov/MPD/Transit_Programs_Grants/Section5310.asp)

### **Temporary Assistance for Needy Families**

States receive Temporary Assistance for Needy Families (TANF) funds to provide cash assistance, work opportunities, and other needed support services for needy families with children. These funds are provided to assist states in developing and implementing welfare programs and are provided by the Office of Family Assistance, a part of the U. S. Department of Health and Human Services. TANF Funds may be used for transportation projects. In Arizona, TANF funds are administered by the Department of Economic Security (DES). Qualifying families can receive assistance with bus tickets and taxi fares, as well as recycled bicycles and car repairs.

### **Title III funds of the Older Americans Act**

Title III of the Older Americans Act provides funding for support services to seniors including transportation. Senior services are frequently included in the same budget as general public transit services. Particularly in the case where the towns fund both programs, taking an integrated approach can allow an area to use the Title III funds and senior program matching dollars to leverage additional Federal Section 5311 dollars. In Arizona, these funds are part of





the Home and Community Based Services administered by the Aging and Adult Administration, a part of the Arizona Department of Economic Security. There contact information follows:

Area Agency on Aging, Region Five  
Pinal-Gila Council For Senior Citizens  
8969 W. McCartney Road  
Casa Grande, Arizona 85294-7432  
PGCSC Home Page <http://www.pgcsc.org/>  
(520) 836-2758  
(800) 293-9393  
(520) 421-2033 FAX

### **Commuter Tax Benefit**

The Transportation Efficiency Act for the 21st Century (TEA-21) included a tax program designed to support and encourage ridesharing and transit usage. The Commuter Tax Benefit (CTB) could be used by the City as a selling point for encouraging private sector support and use of van pools, car pools, or transit services.

The federal government established the CTB program, also known as Commuter Choice or qualified transportation fringes, to provide a tax break for employees and employers who utilize alternative transit, whether through organized vanpools or through existing bus systems. The CTB is a flexible program that can fit many different transportation scenarios, is easy to use, and is ready to implement now.

Three types of expenses qualify for CTB:

1. Any transit pass entitling a person to ride on a mass transit or commuter highway vehicle (or a vanpool)
2. Fare for a commuter vanpool
3. Qualified parking, either on or near the business, or on or near a park-and-ride facility, when employees use a high-occupancy transit option to commute to work.

A qualifying vanpool meets the following requirements:

1. The vehicle carries six or more adult passengers, not including the driver.
2. At least 80 percent of all vehicle miles are for employee transportation between home and work.
3. At least 50 percent of the available seating are occupied by commuters, not including the driver.



The current (2011) amounts provided by the CTB are up to \$120 pre-tax, per month per employee for transit or vanpool expenses. SAFETEA-LU provides for the limit to increase with the cost of living in \$5 increments. For parking, the CTB allows for up to \$230 pre-tax, per month per employee for qualified parking for employees commuting via transit or commuter highway vehicle. Table 11.1 presents a summary of these benefits.

The Internal Revenue Service Publication 15-B, “Employer’s Tax Guide to Fringe Benefits”, contains additional information beginning on Page 19. This document is available on-line at <http://www.irs.gov/pub/irs-pdf/p15b.pdf>.

### **Other Federal Sources of Funds**

Surface Transportation Program funds are typically used for highway construction. However between four and five percent of these funds nationwide are used for transit programs. Surface Transportation Program funds are administered by ADOT.

Congestion Mitigation and Air Quality) funds are available for reducing traffic congestion and improving air quality. The purpose of these funds is to provide monies for transportation projects that would contribute to the attainment or maintenance of the national ambient air quality standards (NAAQS) for ozone and carbon monoxide. Nationwide, more than 50 percent of CMAQ funds are spent annually on transit related projects. When reauthorized under TEA-21, the CMAQ program was expanded to allow funding for projects in particulate matter nonattainment and maintenance areas. The City of Apache Junction is within “Area A,” a portion of Pinal County that is included in the metropolitan Phoenix PM-10 non-attainment area, the remainder of which is in Maricopa County. Hence, qualifying transit projects in Apache Junction would be explicitly eligible to apply for CMAQ funding.

For each year that CMAQ funds are made available, the Maricopa Association of Governments, the administrating agency for these funds, evaluates candidate projects to estimate the benefits to air quality that would result from their implementation. Methodologies for evaluating proposed CMAQ projects, and MAG periodically conducts workshops on the subject.



**TABLE 11.1: YEAR 2011 COMMUTER TAX BENEFITS SUMMARY**

	Transit	Vanpool	Qualified Parking	Qualified bicycle commuting reimbursement
<b>Incentive Levels</b>	Up to \$230/month* for transit expenses	Up to \$230/month* for vanpool expenses	Up to \$230/month** for parking at or near an employer's worksite, or at a facility from which employee commutes via transit, vanpool, or carpool	Up to \$20 per qualified bicycle commuting month. This exclusion for qualified bicycle commuting reimbursement includes any employer reimbursement during the 15-month period beginning with the first day of the calendar year for reasonable expenses incurred by the employee during the calendar year.
<b>Employer Tax Benefit</b>	Employers give their employees up to \$230/month* to commute via transit; gets a tax deduction and saves over providing same value in gross income or Employers allow employees to use pre-tax income to pay for transit and employers save on payroll tax (at least 7.65% savings) or a combination of both up to statutory limits	Employers give their employees up to \$230/month* to commute via vanpool; gets a tax deduction and saves over providing same value in gross income or Employers allow employees to use pre-tax income to pay for vanpooling and employers save on payroll tax (at least 7.65% savings) or a combination of both up to statutory limits	Employers give their employees up to \$230/month** for qualified parking; gets a tax deduction and saves over providing same value in gross income or Employers allow employees to use pre-tax income to pay for qualified parking and employers save on payroll tax (at least 7.65% savings) or a combination of both up to statutory limits	Employers reimburse their employees up to \$20/month for qualified bicycle commuting; gets a tax deduction and saves over providing same value in gross income According to the IRS, "Generally, you can exclude qualified transportation fringe benefits from an employee's wages even if you provide them in place of pay. However, qualified bicycle commuting reimbursements do not qualify for this exclusion."
<b>Employee Tax Benefit</b>	Employee receives up to \$230/month* tax free (not on their W-2 form) or Employee pays for commute benefit with the pre-tax income and saves on income tax or A combination of both	Employee receives up to \$230/month* tax free (not on their W-2 form) or Employee pays for commute benefit with the pre-tax income and saves on income tax or A combination of both	Employee receives up to \$230/month** tax free (not on their W-2 form) for qualified parking p>Employee pays for commute benefit with the pre-tax income and saves on income tax or A combination of both	Employee reimbursed up to \$20/month for reasonable expenses related to commuting by bicycle

Source: National Center for Transit Research



## OTHER FUNDING SOURCES

### Farebox Revenues

Farebox revenues are an important income source. Keeping fares low ensures that the service remains affordable for those who are most dependent on it. However, fare revenues can still fund an important percentage of the budget costs. One approach is to set fares on the high side and then ask various programs to buy tickets for their clients. Farebox recovery ratios required by ADOT for Federal Section 5311 funds are 22 percent for fixed route systems and 17 percent for deviated fixed route systems.

### Advertising and “In Kind” Revenues

In major metropolitan areas, the use of advertising to boost transit revenues is a given; however, the advertising potential that transit systems have in smaller cities and towns is sometimes overlooked. When Bullhead Area Transit System began operating a demand-response service in Bullhead City in December 2000, the system published an advertising rate sheet that provides some idea of the different rates that can be changed as well as the many on-vehicle opportunities for advertising. These rates are shown in Table 3.

The initial cash revenues from advertising did not meet expectations, and the marketing approaches used are being reevaluated. However, the system manager believes in the potential of advertising to benefit smaller transit systems through the exchange of advertising space on or in transit vehicles with products and services received from local merchants.

In 2003, the Kingman Area Transit System (KART) began operation using cutaway minibus vehicles on two deviated fixed routes. The Kingman system has been particularly aggressive about pursuing such trading opportunities. Examples currently in place or being explored by both systems are:

- ◆ Provision of cellular telephone service that functions as the transit operation’s communications system in exchange for ads on vehicles promoting the cellular service provider
- ◆ Provision of bottled drinking water for the vehicle operators and passengers in hot weather by local grocery stores in exchange for ads displayed inside the vehicles
- ◆ Promotion of the transit service by a local radio or television station in exchange for ads on the vehicles
- ◆ Sale of advertising space on transit shelters and benches to pay for their installation and upkeep to shopping centers or merchants served by the service



These are just a few of the creative ways in which transit-based advertising can be used to both promote the service in integrate it into the community. For example, local Internet service providers could be promoted in exchange for free Web space or e-mail services for the transit service. Establishments such as supermarkets, and other retailers might be willing to subsidize the operation either by purchasing blocks of tickets for distribution to their patients or customers, or by outright grants. The transit operator could conduct periodic passenger surveys and show businesses along their routes how many of these customers are using transit.

### Local Taxes or Bonds

As was documented in the 2005 Study, the area attitude survey conducted in December 2003 by WestGroup Research indicated that a majority of Apache Junction residents approve of spending local tax dollars on transit. Table 11.2 compares the retail sales tax rate in Apache Junction with those of some Arizona communities currently providing transit services.

**TABLE 11-2. RETAIL SALES TAX RATES OF SELECTED ARIZONA CITIES**

Jurisdiction	City Tax Rate	State & County Retail Sales Tax Rate	Total Retail Sales Tax Rate
City of Apache Junction	2.2%	7.30% Maricopa 7.70% Pinal	9.50% 9.90%
City of Bisbee	2.5%	7.10%	8.60%
City of Bullhead City	2.0%	6.85%	7.85%
City of Coolidge	3.0%	7.70%	10.70%
City of Cottonwood	2.2%	7.35%	9.55%
City of Kingman	2.0%	6.85%	8.85%
Lake Havasu City	2.0%	6.85%	8.85%
City of Mesa	1.5%	7.30%	8.80%
Town of Miami	2.5%	7.60%	10.10%
City of Sedona	3.0%	7.725% Coconino 7.35% Yavapai	10.725% 10.35%
City of Show Low	2.0%	7.10%	9.10%
Town of Pinetop-Lakeside	2.5%	7.10%	9.60%
City of Sierra Vista	1.75%	7.10%	8.85%

Source: Arizona Department of Revenue

All of the other cities listed in Table 4 currently provide local funding for transit service in their area, and few have a dedicated funding source for transit. In Bullhead City, for example, the



local funding match is provided entirely by LTAF and LTAF II funds. In both Lake Havasu City and Kingman, local matches are provided through both LTAF II and general fund appropriations.

### **Volunteers**

A concept that might appear controversial but has, in fact, been applied successfully in other small transit operations is the use of volunteers as a cost-saving measure. In the Portland, Maine area, volunteers successfully operate a dial-a-ride system using their own automobiles. Drivers are active seniors who enjoy helping fellow seniors who are unable to drive or need assistance. Small area transit operations in Tennessee and Virginia also employ volunteers in non-driving positions including dispatchers and other clerical positions.

Apache Junction has a unique opportunity to explore the seasonal use of RV Park residents as transit operation volunteers. RV Park residents have several attributes that are applicable in transit operation. Many are friendly, enjoy meeting new people, and are skilled at operating large vehicles safely. Certainly volunteer drivers should be required to be properly trained and licensed for the vehicles they will be operating, as well as given professional tips for dealing with the public, collecting and reporting fares, and so forth. All professional and volunteer drivers should be trained for cardio-pulmonary resuscitation and other emergency situations.

If, for example, service to RV parks is desirable on a seasonal, but not year round, basis, using volunteers would avoid the necessity of hiring professionals whose services would only be required part of the year. Teams of two consisting of a volunteer driver and volunteer assistant could sign up for several-hour or half-day shifts. The assistant could be the driver's spouse, or golf or bridge partner, making the shift time pass more quickly. In this fashion, RV Park residents would be serving fellow RV Park residents, and meeting persons from other parks as well as local residents. Many retirees would find such activity enjoyable, and an end-of-season appreciation picnic, a shopping spree at a local retailer, or donated tee time at a local golf course might be all the incentive needed to fill the shifts.





## 12. NEXT STEPS

This chapter reviews the transit-specific results of an online survey conducted during November 2011 for the Apache Junction Comprehensive Transportation Study. This chapter also presents draft Next Steps to be taken by the City with respect to the future implementation of transit service.

### ONLINE SURVEY RESULTS

As a part of the Apache Junction Comprehensive Transportation Study process, KDA Creative conducted an online survey during November 2011. Unlike the survey that was conducted in 2005 by West Group Research for the 2005 Transit Study, the November 2011 survey was not limited to a scientific sampling of Apache Junction residents, but was open to anyone who learned about the survey and chose to participate online. However, the results of the November 2011 survey appear to reconfirm the findings of the 2005 survey, which indicated that transit improvements are important to Apache Junction residents and that a majority of residents are willing to pay for these improvements. In Question 1, survey respondents were asked, “Based on how you get around town (drive, bike, walk, ride, other), what improvements are most important for you? (Please rank 1 through 3, 1 being most important)” The results are shown in Table 12.1.

**TABLE 12.1: IMPROVEMENTS MOST IMPORTANT TO SURVEY RESPONDENTS**

	1	2	3	Rating Average	Response Count
Transportation Improvements	37.5% (21)	33.9% (19)	28.6% (16)	1.91	56
Transit Improvements	32.1% (18)	41.1% (23)	26.8% (15)	1.95	56
Multimodal (biking, pedestrian, equestrian) Improvements	43.1% (25)	19.0% (11)	37.9% (22)	1.95	58

Source: KDA Creative, Apache Junction Comprehensive Transportation Study Online Survey, November 30, 2011.

Nearly a third chose “Transit Improvements” as their first choice.

In Question 3, survey participants were asked, “Where do you think Apache Junction should focus its funding for transit improvements? (Please rank 1 through 5, 1 being most important)” The results for Question 3 are shown in Table 12.2.



**TABLE 12.2: WHERE RESPONDENTS THOUGHT TRANSIT FUNDING SHOULD BE FOCUSED**

	1	2	3	4	5	Rating Average	Response Count
City Bus Circulator	31.0% (18)	22.4% (13)	17.2% (10)	12.1% (7)	17.2% (10)	2.62	58
Park and Ride Lots	15.0% (9)	18.3% (11)	20.0% (12)	26.7% (16)	20.0% (12)	3.18	60
Regional Connector Routes	13.3% (8)	23.3% (14)	28.3% (17)	21.7% (13)	13.3% (8)	2.98	60
Downtown Transit Center	7.0% (4)	14.0% (8)	22.8% (13)	29.8% (17)	26.3% (15)	2.54	57
Bus or Light Rail Alignments	41.9% (26)	19.4% (12)	11.3% (7)	6.5% (4)	21.0% (13)	2.45	62

Source: KDA Creative, Apache Junction Comprehensive Transportation Study Online Survey, November 30, 2011.

In response to the final question of the online survey, 87.5 percent of the participants said they support the City's financing future transportation improvements. The results of both the 2005 and 2011 surveys were taken into consideration when prioritizing the draft improvements suggested in this report.

### NEAR-TERM RECOMMENDATIONS

The consultant team recommends that the following steps be taken in the near term in order to address some of the unmet public transportation needs in the study area until such time as the first population threshold for implementing transit service is reached.

- ◆ Preserve Future Transit Rights-of-Way
- ◆ Appoint Public Transportation Advisory Board
- ◆ Hire or Designate a City Public Transportation Coordinator
- ◆ Facilitate Public Participation in one or more Ride-Sharing Programs
- ◆ Study Expansion of Existing RIDE Choice and Coupons for Cabs Programs
- ◆ Inventory Study Area-Based Public Transportation Resources
- ◆ Conduct Transit Implementation Study

### Preserve Future Transit Rights-of-Way

The wide, divided right-of-way of Apache Trail, which was formerly US 60, is a valuable resource. The median of Apache Trail through the Study Area appears to be wide enough to accommodate a high capacity transit corridor. Future bus lanes for use by bus rapid transit could be added, or a light rail line could be added. If engineering analysis confirms this potential, then the median should be reserved for such future uses, and improvements to the



roadway itself, including the construction or reconstruction of intersections, the provision of left-turn storage, and other roadway improvements along Apache Trail should be undertaken in ways that do not adversely affect the future potential of the median as a high-capacity corridor.

Analysis of the forecasted growth in residential and employment densities within the Study Area suggests that Baseline may also evolve into a corridor that could support a high capacity transit line. This potential should be recognized as improvements to Baseline are programmed, as well.

If light rail serves Apache Junction, the City may wish to consider complementing this regional system with a local modern streetcar operation, as is being planned in Tempe. The modern streetcar would function in much the same manner as a local bus circulator. However, like most rail operations, it would in addition have a certain tourist appeal and would also have the ability to stimulate economic growth and private sector investment along the route.

In the nearer term, the City should undertake a more detailed evaluation of the area in the vicinity of the Chamber of Commerce and identify specific acreage that would be suitable for a transit hub. If such a parcel is identified, then roadway and intersection improvements in the vicinity of the future transit hub should be made with that future use in mind. Improvements to the bicycle and pedestrian facilities in the City should also be undertaken with future transit routes in mind to ensure that such improvements complement, rather than conflict with, future transit service.

#### ***ADOT Policy with Respect to Transit Facilities in ADOT Right-of-Way***

Precedents exist for the use of portions of ADOT right-of-way for transit facilities. For example, the Valley Metro park-and-ride facility and transit center at Superstition Springs Mall in Mesa were constructed partially on ADOT right-of-way adjacent to US 60. ADOT and Metro Light Rail have also discussed providing space for a light rail guideway in the Interstate 10 right-of-way in West Phoenix. ADOT handles each request for use of their right-of-way on a case-by-case basis. Possible constraints include the provisions under which the right-of-way was acquired by ADOT, the existence of utility easements, future ADOT plans for the parcel in question, and other issues. When specific parcels desired for transit usage have been identified, ADOT suggests that the City submit these for review.



### **Appoint Public Transportation Advisory Board**

The City Council should appoint a Public Transportation Advisory Board. As steps are taken to implement public transportation services within the City, on-going public input and participation in the decision-making is an essential component of a successfully designed and implemented set of public transportation strategies.

### **Hire or Designate a City Public Transportation Coordinator**

The City should hire or designate a Public Transportation Coordinator to serve as a liaison between the City Council and the Public Transportation Advisory Board and to work with the Council and the Public Works Department in taking the subsequent steps.

### **Facilitate Public Participation in a Ride-Sharing Program**

The City should assist in publicizing the availability of the ShareTheRide.com and Pinal County ride-sharing programs to Apache Junction residents and encourage the formation of carpools and vanpools for commuting to work and school.

### **Study Expansion of Existing RIDE Choice and Coupons for Cabs Programs**

The City should study the feasibility of expanding the existing RIDE Choice and Coupons for Cabs Programs to make them accessible to a broader cross-section of area residents and the feasibility of providing the funding that will be needed for this.

### **Inventory Study Area-Based Public Transportation Resources**

The City should arrange for the conduct of a research study that would inventory and assess the existing Study Area-based public transportation resources such as vehicles operated by the mobile home parks and senior centers and the drivers and maintenance personnel and equipment associated with their operation. The feasibility of an “Arizona Rides-style” vehicle pooling arrangement to maximize the use of the vehicles and provide more transit options for area residents should be explored.

### **Conduct Transit Implementation Study**

The City should arrange for the conduct of a comprehensive transit implementation study. This study would expand on the concepts summarized in the following section and provide the level of detail necessary to qualify for the applicable transit program funding.

## **IMPLEMENTING TRANSIT SERVICE**

A starter transit system could consist of either a dial-a-ride service for seniors and special needs persons only, a dial-a-ride service for the general public, or a deviated fixed route service. In



the previous chapter, a hypothetical transit system was presented that was envisioned to be operated as a deviated fixed route service. The consultant recommends that a deviated fixed route service be chosen for the following reasons:

- ◆ A deviated fixed route system can provide some curb-to-curb service at lower cost per person than a dial-a-ride.
- ◆ Dial-a-ride services are less visible to community visitors and newcomers than a system of buses that run regularly. A significant portion of persons who might make use of transit if it were available are winter visitors, short-time visitors, area newcomers, and other tourists.
- ◆ As dial-a-ride services become successful, the cost of the operation as a whole—and often the cost per rider—tend to increase. Jurisdictions may encounter difficulty restructuring dial-a-ride services to deviated fixed route services later after area residents have become accustomed to the more immediate responsiveness of a well-managed dial-a-ride.
- ◆ The Resident Attitude Survey conducted in December 2003 and mentioned in Chapter 2 indicated that a majority of Apache Junction residents were not interested in curb-to-curb service.

The actual costs of both implementing and funding the start-up service will depend upon a number of variables, including the following:

- ◆ What type of vehicles will be used and how many will be purchased?
- ◆ Will the transit center be built initially? Or will it be programmed for a later fiscal year?
- ◆ Will a new maintenance facility be needed? Can an existing City facility be used? Or is contracting the maintenance out to another agency or a private sector provider practicable?
- ◆ What bus stop furniture will be provided? Will shelters be constructed at stops?
- ◆ What are the service characteristics?

Draft pro-forma statements of operations follow that present snapshots of the ridership and financial characteristics of the hypothetical local services presented in Chapter 10: the circulator for the 60,000 population level, and the systems for the 75,000 and 130,000 population levels. The service characteristics and potential revenue levels for these services are presented in Table 12.3.



**TABLE 12.3: PROPOSED SERVICE CHARACTERISTICS AND PRO-FORMA REVENUE PROJECTIONS**

Service Characteristics	60K Population Circulator	75K Population System	130K Population System
Service Days	312	312	312
Service Miles	32,760	153,504	236,246
Service Hours - Annual	3,744	3,744	3,744
Service Hours - Daily	12	12	12
Passengers - One way	44,928	179,712	269,568
Revenues			
Average Net Fare collected	\$0.85	\$0.85	\$0.85
Fare Revenues	\$38,188.80	\$152,755.20	\$229,132.80
Other Operating Revenues			
City of Apache Junction local match	\$54,978.85	\$185,741.86	\$254,757.52
FTA Section 5311 or 5307	\$89,217.48	\$362,576.34	\$529,331.08
<b>TOTAL</b>	<b>\$182,385.13</b>	<b>\$701,073.40</b>	<b>\$1,013,221.40</b>

Source: R. H. Bohannon & Associates

The numbers of one-way passengers shown for the different population levels in Table 12.3 are significantly lower than the total demand figures shown in Figure 9.2. The figures above are based on the 75 percent occupancy levels of the 16-passenger mini-bus vehicles upon which the pro-forma estimates are based. Note that total demand figures also include persons using taxicabs, medical transportation, or carpools and van pools. The net fare shown is the current Valley Metro senior fare. While federal matching funds in the short-term might come from the Section 5311 Rural Transit Program, the matching funds for services at the 75,000 and 130,000 population levels would come from the Section 5307 Urban Area Program and/or other FTA sources.

Table 12.4 presents pro-forma expense projections. Several online sources such as Salary.com were used to obtain median salary and benefits figures for the metropolitan Phoenix area for similar positions. Typical figures for marketing, printing, and office supplies were used. For the Final draft of this report, these figures should be adjusted to reflect City practices.

Two drivers for each route are provided; the 12-hour day for each route would be divided into two shifts. Including check-in time at the beginning of the shift and tie-up time at the end of the shift, each driver shift would be between 7 and 8 hours in length. Fuel and oil cost





**TABLE 12.4: PRO-FORMA EXPENSE PROJECTIONS**

Administrative Expenses 80% FTA/20% AJ	60K Population Circulator			75K Population System			130K Population System		
	Cost of Ea.	No. or %	Total Amt.	Cost of Ea.	No. or %	Total Amt.	Cost of Ea.	No. or %	Total Amt.
Transportation Coordinator	\$56,590	10.00%	\$5,659	\$56,590	25.00%	\$14,148	\$56,590	35.00%	\$19,807
Fringe Benefits	18,109	10.00%	1,811	18,109	40.00%	7,244	18,109	45.00%	8,149
Administrative Professional	35,891	20.00%	7,178	35,891	50.00%	17,946	35,891	70.00%	25,124
Fringe Benefits	12,203	10.00%	1,220	12,203	40.00%	4,881	12,203	45.00%	5,491
Program Audit			750			750			750
Utilities			2,400			6,000			6,000
Marketing/Advertising			3,145			12,580			18,870
Printing			899			3,594			5,391
Office Supplies			1,000			1,000			1,000
Telephone			2,400			2,400			2,400
Postage			1,500			3,000			4,000
Substance Abuse Program			600			2,400			3,600
Subtotal			\$28,562			\$75,942			\$100,582
Operating Expenses 58% FTA/42% AJ									
Supervisor/Dispatcher	\$35,682	20.00%	\$7,136	\$35,682	100.00%	\$35,682	\$35,682	100.00%	\$35,682
Dispatcher Fringe Benefits	17,641	20.00%	3,528	17,641	100.00%	17,641	17,641	100.00%	17,641
Driver Salaries	18,932	2	37,864	18,932	8	151,456	18,932	12	227,184
Driver Fringe Benefits	13,321	2	26,642	13,321	8	106,568	13,321	12	159,852
Mechanic Salary	37,470	20.00%	7,494	37,470	50.00%	18,735	37,470	70.00%	26,229
Mechanic Fringe Benefits	18,200	10.00%	1,820	18,200	40.00%	7,280	18,200	50.00%	9,100
Fuel and Oil			19,179			89,866			138,305
Maintenance and Parts (\$1.00 per mile)			32,760			153,504			236,246
Vehicle Licenses			1,000			2,500			3,500
Vehicle Insurance			11,000			27,500			38,500
Communications			2,400			6,000			8,400
Vehicle Cleaning and Supplies			2,400			6,000			8,400
Uniforms			600			2,400			3,600
Subtotal			\$153,823			\$625,132			\$912,640
TOTAL			\$182,385			\$701,073			\$1,013,221

Source: R. H. Bohannon & Associates



estimates were based on \$4.00-per-gallon gasoline; and maintenance costs were based on an additional \$1.00-per-mile. Mini-buses typically get a minimum of 7 miles-per-gallon.

Expense details will vary widely depending upon arrangements made at the time of start-up. Some administrative duties, for example, may be handled by City personnel who also perform other functions. Supplies may be provided “in kind” to the transit department from bulk purchases made by the City as a whole. The local match amount of \$54,978.85 equates to \$1.09 per capita, or below the per capita amount typically paid by smaller Arizona Cities operating transit services as shown in Table 12.5.

**TABLE 12.5. LOCAL PER-CAPITA SUPPORT OF TRANSIT**

	2000 Census Population	Local/LTAF Contribution	
		Total	Per Capita
Bisbee	6,090	\$ 14,583	\$ 2.39
Bullhead City	33,769	139,153	4.12
Coolidge	7,786	34,215	4.39
Cottonwood	9,179	23,600	2.57
Lake Havasu City	41,938	277,685	6.62
Sierra Vista	37,775	200,510	5.31
Average			\$ 4.24

Source: Arizona Department of Transportation

Table 12.6 presents pro-forma capital requirements. At each population level, allowance is made for a spare vehicle, together with the number required to protect the schedules. Note that the full compliments of vehicles, bus shelters, and park-and-ride lots needed for the service for each population level are shown. In actual practice, the service might be expanded in stages and some if not all of the shelters from earlier phases could continue to serve the expanded system. However, the FTA estimates the useful lives of the vehicles recommended, Light-Duty Midsize Buses, to be 5-Years or 150,000 Miles. (Federal Transit Administration, *Useful Life of Transit Buses and Vans, Final Report*, April 2007) Hence vehicles from earlier phases of service would likely need replacement by implementation of a subsequent phase.

Table 12.7 presents a suggested implementation schedule for the improvements. In any event, the first steps in implementing transit improvements in Apache Junction involve identifying the actions to be taken consistent with the General Plan and the transportation “vision” that the City adopts, budgeting for these actions, and seeking the applicable funding.



**TABLE 12.6: PRO-FORMA CAPITAL REQUIREMENTS**

Capital Expenses 80% FTA/20% AJ	60K Population Circulator			75K Population System			130K Population System		
	Cost of Ea.	Number Required	Total Amt.	Cost of Ea.	Number Required	Total Amt.	Cost of Ea.	Number Required	Total Amt.
Price per vehicle									
El Dorado Aerotech 240 16+2	\$85,000								
Bike Rack	1,200								
Bus Wrap	7,000								
Total Price per Vehicle	93,200	2	\$186,400	\$93,200	5	\$466,000	\$93,200	7	\$652,400
Bus stop furniture	12,500	7	87,500	12,500	12	150,000	12,500	18	225,000
Transit Center	1,600,000	0		1,600,000	1	1,600,000	1,600,000	1	1,600,000
Park-and-Ride Lot	750,000	0		750,000	1	750,000	750,000	2	1,500,000
TOTAL			\$273,900			\$2,966,000			\$3,977,400

Source: R. H. Bohannon &amp; Associates



**TABLE 12.7: SUGGESTED APACHE JUNCTION PHASED TRANSIT IMPLEMENTATION SCHEDULE**

	Action	Responsibility	Time Frame
1	Begin Ridesharing Program Development	City Transportation Coordinator with input from Transit Advisory Board	Fiscal 2013
2	Discuss transit service options with prospective service providers	City Transportation Coordinator and Public Works Department with input from Transit Advisory Board	Upon approaching first population threshold
3	Obtain funding approval from ADOT	Apache Junction City Council/City of Apache Junction Public Works Department	
4	Develop Transit Service Marketing	City Transportation Coordinator with input from Transit Advisory Board	
5	Implement Marketing Campaign Apache Junction Transit Brochure Transit Information on Web On-vehicle Advertising Community Trades and Promotions	City Transportation Coordinator	
6	Order equipment and install bus stop furniture	City of Apache Junction Public Works Department with input from City Transportation Coordinator, and Transit Advisory Board	
7	Request Design Concept Proposals for Transit Center	City of Apache Junction Public Works Department	Upon approaching next population threshold
8	Request proposals for additional equipment and transit center construction	City of Apache Junction Public Works Department	
9	Transit Center opens and service starts	City Transportation Coordinator with input from Transit Advisory Board	



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