

Southwest Valley Local Transit System Study

DRAFT LOCAL TRANSIT SYSTEM PLAN



Avondale | Buckeye | Goodyear | Litchfield Park
Tolleson | West Phoenix | Maricopa County | Valley Metro

Submitted to:



MARCH 2013

Submitted by:



DRAFT

LOCAL TRANSIT SYSTEM PLAN

SOUTHWEST VALLEY LOCAL TRANSIT SYSTEM STUDY

Prepared for



Prepared by:



Draft: March 2013



EXECUTIVE SUMMARY

The Maricopa Association of Governments (MAG) Southwest Valley Local Transit System Study (SWVLTSS) was conducted to assess the transit service needs within the Southwest Valley of the MAG region. The study area includes portions of the City of Phoenix, City of Avondale, City of Goodyear, City of Tolleson, City of Litchfield Park, Town of Buckeye, and unincorporated Maricopa County. These communities worked with MAG and Valley Metro to identify a transit system plan that outlines short-, mid-, and long-term strategies to cost-effectively improve service within the Southwest Valley.

Local transit is intended to serve shorter trips within a community that typically would be provided by arterial bus or circulator routes. Local transit would also connect to more regional transit that would serve longer trips, such as express bus, light rail, or commuter rail. The short-, mid-, and long-term timeframes are identified as what can be accomplished in the next several years (short-term), what can be accomplished by 2020 (mid-term), and the build out of the transit system by 2030 and beyond (long-term). These horizon years have been utilized to organize planning efforts and are subject to change based on future funding availability.

Short-Term Recommendations – What Can Be Done Now?

Short-term actions could occur within the next two to seven years, contingent on funding availability but largely in advance of any major funding initiative like a sales tax. Generally, these actions emphasize reducing travel times, expanding services to meet needs, and building a collaborative foundation for long-term, subregional efforts like expanding the arterial grid system into the service area.

The short-term recommendations identified in this plan include:

- Improving service on existing arterial fixed routes along McDowell Road (Route 17A) and Van Buren Street (Route 3) to 30 minute frequency and interlining routes or expanding hours of service.
- Building on the success of the ZOOM circulator by increasing service area to the north and/or increasing capacity.
- Initiating the recommended circulator services in Goodyear
- Conducting a planning study to investigate a circulator service plan in Buckeye.
- Establishing an ongoing planning group or other institutional structure for continuing coordination among the jurisdictions who wish to advance the mid- and long-term implementation steps, including funding strategies.
- Promoting transit through partnerships with local businesses and coordinated land use-transportation decision-making. Recommendations for such coordinated decision-making have been explored as part of MAG's *Designing Transit Accessible Communities* and *Sustainable Transportation and Land Use Integration* studies.

All recommendations are discussed in greater detail in Section 4.0 of the Plan document.

Mid-Term Recommendations – Expanding Service by 2020

By 2020, service improvements are recommended in areas that are projected to support productive transit (i.e., meeting accepted performance metrics) at that time. It is also recommended that the



performance of transit service be reviewed periodically to determine if modifications are required to respond to changes in actual pace and type of development.

The mid-term recommendations identified in this plan include:

- Expanding east-west fixed route bus service on major arterials west to Litchfield Road, providing 30 minute service or matching the connecting service levels.
- Introducing north-south fixed route service on major arterials such as Litchfield and/or Dysart Roads.
- Expanding circulator service area in Goodyear, and modifying continuing circulator services to respond to conditions.
- Initiating pilot circulator service in Buckeye.

Long-Term Recommendations – Advancing the Transit System in the Southwest Valley

Over the long-term, the transit system would be built out to levels that are projected to be transit-supportive based on current land use plans. The timing for long-term recommendations is contingent on funding and the realization of the projected pace of development. The implementation steps include expansion of more services into the central portion of the service area and continual refinements to service to meet or exceed transit service performance goals.

The long-term recommendations identified in this plan include:

- Expanding the service area for arterial fixed route transit service farther west.
- Improving service frequencies as appropriate on productive routes.
- Identifying opportunities for flexible service (such as route deviation or demand responsive, non-ADA service that is reservations-based or that serves specific activity centers).
- Continuing to modify circulator routes or operations to respond to changes in conditions.

Implementation

The expansion of transit as illustrated in this Plan would serve to connect all the communities within the service area with at least one type of service. There are five recommended guiding principles for implementing the Local Transit System Plan:

- Cities and towns should pursue circulator service independently (or in partnership) while continuing overall coordination with other communities in the service area to promote connectivity among service types. This will simplify the funding strategy and not unnecessarily complicate neighborhood-level service delivery.
- Communities in the Southwest Valley service area should collaborate to pursue funding for the expansion of the arterial grid bus system.
- Communities should purchase service from an existing operator (e.g., Valley Metro or the City of Phoenix) to minimize risk and leverage their expertise.
- The transit operator and participating jurisdictions should build periodic reassessments into the implementation plan to adjust for the pace of growth, changes in travel patterns or demands,



and funding requirements or priorities. RPTA produces annual transit performance reports and regularly adjusts routes to optimize performance.

- ADA service will be maintained within $\frac{3}{4}$ mile of fixed route service, as required by law.

What Are Possible Funding Sources and Strategies?

A variety of federal, state, and local sources are available to assist with capital investments. The key financing strategy to consider is how to obtain dedicated, sustainable funds for operations. A sustainable source of operating funds is the limiting factor in implementing the local transit plan, since the initial capital investments would not be made otherwise.

At this time, the Urban Area Formula Funding Program (Section 5307) and CMAQ (Congestion Mitigation and Air Quality) are key potential sources of federal funds for building and operating local transit. Operational funding assistance is only available to areas identified as a small urbanized area, under a population of 200,000 people, as defined by the US Census. These funds are allocated through MAG and require a local match. Regional funds from the sales tax approved under Proposition 400 are allocated through the Transit Life Cycle Program (TLCP). In addition, the Southwest Valley communities may look toward future regional initiatives to extend the sales tax revenue for transportation beyond the life of the current tax for projects outside the scope of the current Regional Transportation Plan.

To generate and leverage additional funds for transit, communities may opt to make local funding commitments out of the general budget or an existing tax. Given the expenditures required to expand the arterial grid system, communities could pursue a local sales tax. Section 6.0 of this report investigates this possibility in more detail, and concludes that a local sales tax of between 0.1% and 0.2% would generate adequate revenues to pursue the illustrative system laid out as part of the recommendations.

Summary

The Southwest Valley is expected to continue to experience population and employment growth. The analysis of potential future transit service suggests that transit use may be productive if it is provided at a reasonable level of service. This plan identifies future transit-supportive areas of the Southwest Valley, recommends transit service types, and identifies an illustrative route system that corresponds to future land use and projected population levels.



Page Left Intentionally Blank



Table of Contents

EXECUTIVE SUMMARY	i
1.0 INTRODUCTION.....	1
1.1 Planning Process	3
1.1.1 Stakeholder Input	4
1.1.2 Project Management Team	5
2.0 EXISTING AND FUTURE CONDITIONS.....	7
2.1 Demographics	7
2.1.1 Population	7
2.1.2 Employment	11
2.2 Land Use.....	14
2.3 Travel Patterns and Markets.....	17
2.4 Existing and Planned Transit Service	20
2.4.1 Existing Fixed Route Bus Service	20
2.4.2 Existing Express Bus Service	22
2.4.3 Existing Fixed Route Service Performance	23
2.4.4 Summary of Existing Service Performance.....	23
2.4.5 Planned Fixed Route Bus Service.....	24
3.0 RECOMMENDED SERVICE AREA AND SERVICE TYPES.....	27
3.1 Service Area	28
3.2 Subareas for Transit Service	28
3.3 Service Types	29
4.0 PLAN RECOMMENDATIONS AND IMPLEMENTATION APPROACH	31
4.1 Short-term Recommendations: What Can Be Done Now?	31
4.1.1 Additional Transit Service.....	31
4.1.2 Other Short-Term Actions	32
4.2 Mid-term Recommendations: Expanding Service by 2020.....	34
4.3 Long-term Recommendations: An Approach for Advancing the Transit System in the Southwest Valley	36
4.3.1 Additional Transit Service.....	36
4.3.2 Overall Performance of Long Range Plan.....	37
4.4 ADA Accessible Service	38
4.5 Summary of Recommendations and Implementation Strategies	39
5.0 ESTIMATED COSTS	43
5.1 Year 2015 – Short-Term	43
5.2 Year 2020 – Mid-Term	43
5.3 Year 2030 – Long-Term.....	44
5.4 Cost Summary.....	44
6.0 FUNDING AND FINANCING STRATEGIES.....	49
6.1 Leveraging Federal Funds	49
6.1.1 Urban Transit Formula Assistance Program (Section 5307).....	49
6.1.2 Bus and Bus Facilities Program (Section 5339).....	50
6.1.3 Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310).....	50
6.1.4 Congestion Mitigation and Air Quality	50



6.2	State Funding Sources.....	51
6.2.1	Surface Transportation Program Flexible Funds	51
6.2.2	Local Transportation Assistance Fund II Funding	51
6.3	Regional and Local Government Funding Sources	51
6.4	Approach to a Local Sales Tax.....	52
6.4.1	Potential Revenue Generation	52
6.4.2	Proportionality.....	53
7.0	CONCLUSIONS.....	55
8.0	REFERENCES AND LITERATURE CITED.....	56

List of Tables

Table 1	Evaluation Factors.....	4
Table 2	Southwest Valley Existing Population within Study Area – 2010 Census.....	7
Table 3	Southwest Valley Housing Characteristics: 2006 – 2010 ACS*.....	8
Table 4	Southwest Valley Study Area Population Growth – MAG Projections*.....	8
Table 5	Southwest Valley Study Area Employment Growth – MAG Data.....	11
Table 6	Southwest Valley Existing and Future Land Use within the Study Area.....	14
Table 7	Existing Arterial Fixed Route Ridership (Weekday Only).....	20
Table 8	Existing Circulator and Rural Route Ridership (Weekday Only).....	22
Table 9	Existing Express Bus Ridership (Weekday Only).....	22
Table 10	Existing Fixed Route Service Performance*.....	23
Table 11	Planned Supergrid and Express Bus Service.....	25
Table 12	Arterial Fixed Route Service Expansion in the Mid-Term.....	34
Table 13	Summary: Illustrative Expansion of the Local Transit System.....	41
Table 14	Cost Summary – 2015.....	45
Table 15	Cost Summary – 2020.....	46
Table 16	Cost Summary – 2030.....	47
Table 17	Summary of Costs by Year – 2015 to 2030.....	48
Table 18	Benefit and Revenue Comparison.....	53
Table 19	Potential Proportionality Adjustments.....	54

List of Figures

Figure 1	Study Area.....	2
Figure 2	Planning Process.....	3
Figure 3	Input into Developing Transit Strategies.....	3
Figure 4	2010 Population Density.....	9
Figure 5	2030 Population Density.....	10
Figure 6	2010 Employment Density.....	12
Figure 7	2030 Employment Density.....	13
Figure 8	Existing Land Use (2011).....	15
Figure 9	Future Land Use (Build Out).....	16
Figure 10	Top Five Total Trip Interchanges (2010 & 2031).....	18
Figure 11	Top Five Work Trip District Interchanges (2010 & 2031).....	19
Figure 12	Existing Transit Network.....	21
Figure 13	Planned Transit Network.....	26
Figure 14	Service Area and Subareas for Transit.....	27
Figure 15	Short-Term Local Transit Service Plan (2015).....	33
Figure 16	Mid-Term Local Transit Service Plan (2020).....	36
Figure 17	Long-Term Local Transit Service Plan (2030).....	37
Figure 18	Potential ADA Service Area.....	39



Page Left Intentionally Blank

1.0 INTRODUCTION

The Maricopa Association of Governments (MAG) Southwest Valley Local Transit System Study (SWVLTSS) was conducted to assess the transit service needs within the Southwest Valley of the MAG region. The study area, illustrated in Figure 1, includes portions of the City of Phoenix, City of Avondale, City of Goodyear, City of Tolleson, City of Litchfield Park, Town of Buckeye, and unincorporated Maricopa County. These communities worked with MAG and Valley Metro to identify short-, mid-, and long-term strategies to improve transit service within the Southwest Valley.

According to US Census data, the communities in the Southwest Valley experienced significant population growth between 2000 and 2010: the City of Avondale grew by 112.5%, the City of Goodyear 245%, and the Town of Buckeye 678%. Currently, about 330,000 people reside within the study area, with the densest development occurring in the north and northeastern portions of the study area. As the Southwest Valley populations have increased new employment, commercial retail, schools, and other activity centers have emerged. The southern and western portions of the study area are still rural in character but the overall study area is projected to grow about 86% by 2020 and 170% by 2030 (based on 2010 census information and MAG's projections). Transit services are planned to be implemented in accordance with the Regional Transportation Plan (RTP) and currently are limited to the northeastern portion of the study area. The SWVLTSS was prepared to respond to local travel patterns, identify the needs of the local travel market, and provide recommendations that support local community goals for transportation and land use.

Several goals and objectives guided the development of the SWVLTSS:

Goal 1: Recommend new and/or enhanced transit service options for travel markets within the Southwest Valley that connect activity centers and connect to regional transit systems.

Objective: Respond to existing and future travel demand in the Southwest Valley.

Objective: Support local land use planning policies and goals.

Objective: Provide flexibility to respond to changes in population and land use over time.

Goal 2: Promote transit use and productivity through reduced travel times, minimized transfers, and improved accessibility and amenities.

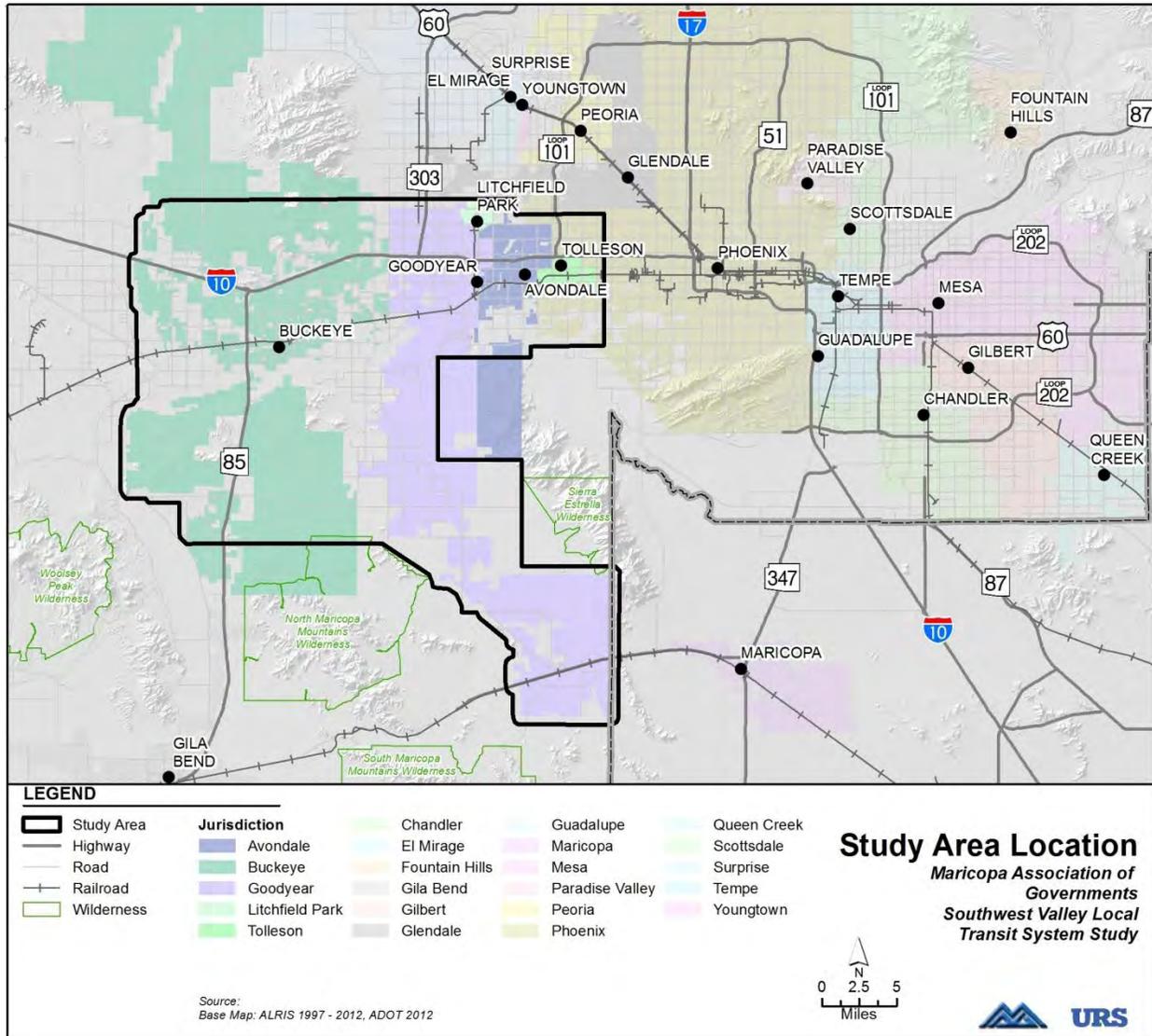
Objective: Build multimodal connectivity by promoting accessibility between different modes (bus, rail, bike, pedestrian, auto) to maximize overall mobility.

Objective: Provide cost-effective and adaptive service.

Objective: Promote an ongoing dialogue between transit planners and local land use planners to identify and address the relationship between transit investments and land use/development decisions.



Figure 1 Study Area



1.1 Planning Process

This section describes the steps taken to identify and evaluate options for the short-, mid-, and long-term recommendations that are provided for the SWVLTSS. Figure 2 illustrates the major tasks that were undertaken as part of the study. The initial efforts affirmed the study approach and work plan (Task 1) and included the commencement of the coordination and public involvement activities that would occur throughout the planning process (Task 2). After developing an understanding of the existing and projected future conditions in the study area (Task 3), the deficiencies and need for transit service were identified through both data analysis and stakeholder input (Task 4). The purpose of the financial analysis (Task 5) was to develop planning-level cost estimates for the recommended service levels and potential funding strategies. This Plan is the culmination of study efforts (Tasks 6 and 7), and documents the overall findings and recommendations for local transit service in the Southwest Valley.

Figure 2 Planning Process

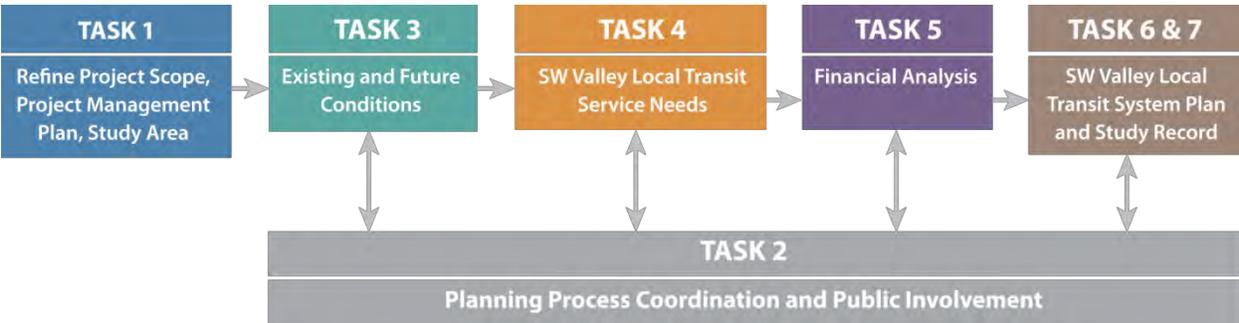
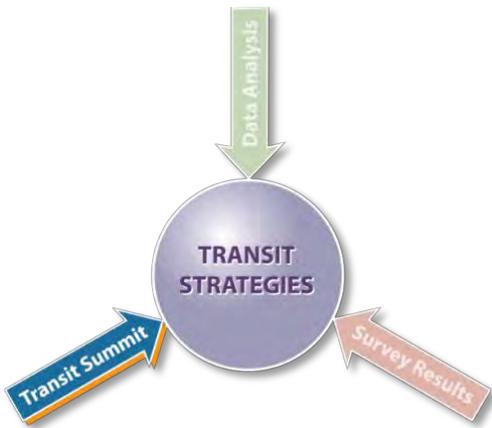


Figure 3 Input into Developing Transit Strategies



Identification of the transit service needs in the Southwest Valley was the most critical element of the study. A thorough understanding of travel patterns and how they could be affected by population and employment trends in the Southwest Valley provided the foundation for outlining a plan suited to the particulars of the travel market in the study area. As shown in Figure 3, the primary inputs into the identification of transit needs were (1) data analysis based on output data from the MAG travel demand model, analysis to investigate localized issues, and demographic/socioeconomic data, (2) public and stakeholder input on priorities and deficiencies, primarily through data collected from a survey and the April 2012 Transit Summit. These efforts are described further in subsequent sections of this report.

The development of the Plan incorporated nine evaluation factors that are identified in Table 1.

Table 1 Evaluation Factors

Factor	Application
Mobility	How effective is the transit service in terms of number of riders served?
Connectivity	How effectively does the transit service make intermodal connections?
Cost-effectiveness	At what per-unit cost (i.e., productivity) is enhanced mobility and connectivity achieved?
Affordability	What is the system cost and are there long-term funding opportunities available?
Equity	Is the service equitably provided among the communities and stakeholders? Are services reaching transit-dependent populations?
Economics	How well does transit support economic goals of the communities?
Sustainability	How sustainable are the proposed transit investments in terms of financing and environmental effects?
Consistency	Is the service supportive of local plans?
Activity Centers Served	Are major activity centers served?

1.1.1 Stakeholder Input

Stakeholder input was a very important part of the plan process. The goals of the public involvement process included:

1. Identification of the local transit needs throughout the Southwest Valley.
2. Determination of which transit needs have the highest priority.
3. Provision of feedback on proposals to meet local public transportation needs and provide connection to regional transit services.

In order to gain insight into the primary goals of the study, two important outreach efforts were undertaken. First, a survey was distributed to the public in February 2012 with responses collected over a period of one month. Second, a Transit Summit was convened for elected officials, stakeholder agencies and jurisdictions, local media, and interested members of the public in April 2012.

Transit Survey: The online survey was distributed to the public through links to the web sites, Facebook pages, and twitter feeds for MAG and the jurisdictions within the Southwest Valley. A link to the survey was sent via the e-mailing lists maintained by MAG and the jurisdictions. In-person surveys were conducted at nine locations, and survey collection boxes were placed at 7 local libraries. There was newspaper coverage during the survey period by the *West Valley View* and the *Arizona Republic* that provided additional public notification of the survey. A **Transit Needs Assessment Report** was prepared to fully document the results of the survey, and is available on the MAG web site at <http://www.azmag.gov/Projects/Project.asp?CMSID=4173>.

The response to the survey was considered high, totaling nearly 2,100 individual respondents. Participation in the survey was voluntary and did not represent a random sample of the population. Results of the survey identified that most of the survey respondents do not currently use transit. According to the survey results, those respondents that do use transit are more likely to live in the northeastern part of the study area (where transit is currently provided on a regular basis) and typically have one vehicle available in the household. For current and potential transit users, the key factors to



determine whether they would opt to use transit were accessibility and frequency of service. These reasons were key drivers through the analysis and identification of the plan recommendations. Survey respondents also provided hundreds of potential locations where transit service would be convenient or suitable; the study team reviewed these and integrated them into the consideration of current activity centers in the study area.

Transit Summit: A *Transit Summit* was conducted on April 5, 2012 and a summary report of the event is available on the MAG web site at <http://www.azmag.gov/Projects/Project.asp?CMSID=4173>. During the Summit, about 50 participants worked in small groups to generate input on key activity centers for connecting with transit, important characteristics for transit service to have in the Southwest Valley, and critical needs. This input was factored into the analysis used to refine the service area and study recommendations to reflect local values and objectives.

1.1.2 Project Management Team

A Project Management Team (PMT) was convened to guide and review the development of study materials. The team was comprised of local jurisdictions and area transit agencies. The team represented local jurisdictional interests, issues and expertise within the study area. The team was also instrumental in conveying information back to their respective agencies. A series of PMT meetings was conducted to solicit input and review progress throughout the course of the study. MAG worked closely with the PMT to coordinate public outreach efforts, collect and analyze pertinent data, and develop Plan recommendations. The PMT provided review and guidance on local issues, provided connections with other ongoing study efforts with the Southwest Valley, and served as study champions for the agencies or communities they represent. The PMT included representatives from MAG, Valley Metro, City of Avondale, Town of Buckeye, City of Goodyear, City of Litchfield Park, City of Phoenix, City of Tolleson, and Maricopa County.



Page Left Intentionally Blank

2.0 EXISTING AND FUTURE CONDITIONS

This section provides a summary of pertinent existing and future conditions in the study area. For additional detail, refer to *Working Paper 3: Existing and Future Conditions* and *Working Paper 4: Needs Assessment*.

2.1 Demographics

Both MAG data and available United States (US) Census data were used for the analysis of population trends. MAG data are organized by Traffic Analysis Zones (TAZs) within the study area while the US Census data are broken down by census blocks.

2.1.1 Population

According to Census data, Maricopa County had a 2010 population of 3,817,117 while the Southwest Valley study area had a 2010 population of nearly 330,000, or about 9% of the County population. Within the study area, West Phoenix accounts for the majority of the 2010 population with approximately 30% of the total. As shown in Table 2, Avondale, Goodyear and Buckeye also comprise significant portions of the current population in the study area. Table 2 shows the current distribution of population throughout the area, with the densest development generally in the northeast.

Table 2 Southwest Valley Existing Population within Study Area – 2010 Census

Jurisdiction (Portion within Study Area)	2010 Census Population	Percent of Total	Population per Acre
West Phoenix	98,825	30%	6.27
Tolleson	6,172	2%	1.85
Avondale	75,588	23%	4.65
Goodyear	65,173	20%	0.58
Litchfield Park	5,065	2%	2.47
Buckeye	47,612	14%	0.36
Unincorporated County Land	31,188	9%	0.18
Total	329,623	100%	0.73

Source: US Census Bureau, 2011.

Transit use correlates to certain household characteristics including median age, median household income, and zero or one auto households. Data for this information are not yet available through the 2010 Census. However, the US Census Bureau provides estimates through the American Community Survey (ACS). The ACS produces data based on a five-year time period that provides intercensal estimates for population characteristics. As shown in Table 3, the percentage of the households in Tolleson with zero or one automobile is the highest among Southwest Valley jurisdictions at 55%. In addition to having the highest percentage of households with zero or one automobile, Tolleson also represents the community with the lowest median household income and youngest median age, which are typical transit ridership characteristics and indicate a potential ridership base for transit service.



Table 3 Southwest Valley Housing Characteristics: 2006 – 2010 ACS*

Jurisdiction (Total)	Total Number of Households	Median Age (Years)	Median Household Income (2010\$)	Zero and One Auto Households	Percent of Households with ≤ 1 Auto
Phoenix	515,701	31.6	\$48,823	240,623	47%
Tolleson	1,833	26.4	\$33,904	1,012	55%
Avondale	21,402	28.5	\$60,907	7,465	35%
Goodyear	18,217	33.4	\$76,221	5,224	29%
Litchfield Park	2,341	43.0	\$73,996	1,003	43%
Buckeye	13,193	28.2	\$62,046	4,415	33%
Maricopa County	1,382,002	34.1	\$55,054	604,796	44%

Source: US Census Bureau, 2011b.

*Note – Data in this table are not clipped to the Study Area and includes information from across each entire jurisdiction.

Table 4 provides the population projections for the region and the jurisdictions in the study area. MAG population projections for 2020 and 2030 are based on official estimates derived from the 2005 Special Census conducted for Maricopa County. MAG estimated the 2010 population of the study area to be just over 350,000. The primary difference between the 2010 projections by MAG and the actual 2010 Census data (shown in Table 2) is the rate of population growth within unincorporated areas. The data in Table 4 indicate that continued growth – and potentially quite substantive growth – is projected in the study area.

Table 4 Southwest Valley Study Area Population Growth – MAG Projections*

Jurisdiction	2005	2010 (Projection)	2020 (Projection)	2030 (Projection)	Projected Percent Growth (2005-2030)
MAG Region	3,681,025	4,216,499	5,230,300	6,135,000	67%
West Phoenix	76,113	100,519	117,469	122,747	61%
Tolleson	5,596	6,696	8,311	8,775	57%
Avondale	63,872	75,938	87,484	89,791	41%
Goodyear	43,750	65,219	148,837	240,534	450%
Litchfield Park	4,593	5,783	7,090	7,284	59%
Buckeye	20,193	48,272	121,938	208,759	934%
Maricopa County	32,038	51,435	121,741	216,845	577%
Total	246,156	353,862	612,872	894,734	263%

Source: MAG, 2007.

*At the time of this analysis, updated population projections were being developed based on the 2010 US Decennial Census

Figure 4 and Figure 5 illustrate the existing (2010) projected (2030) population density patterns throughout the study area. The key growth trend in 2030 is the expansion of residential areas to the west.



Figure 4 2010 Population Density

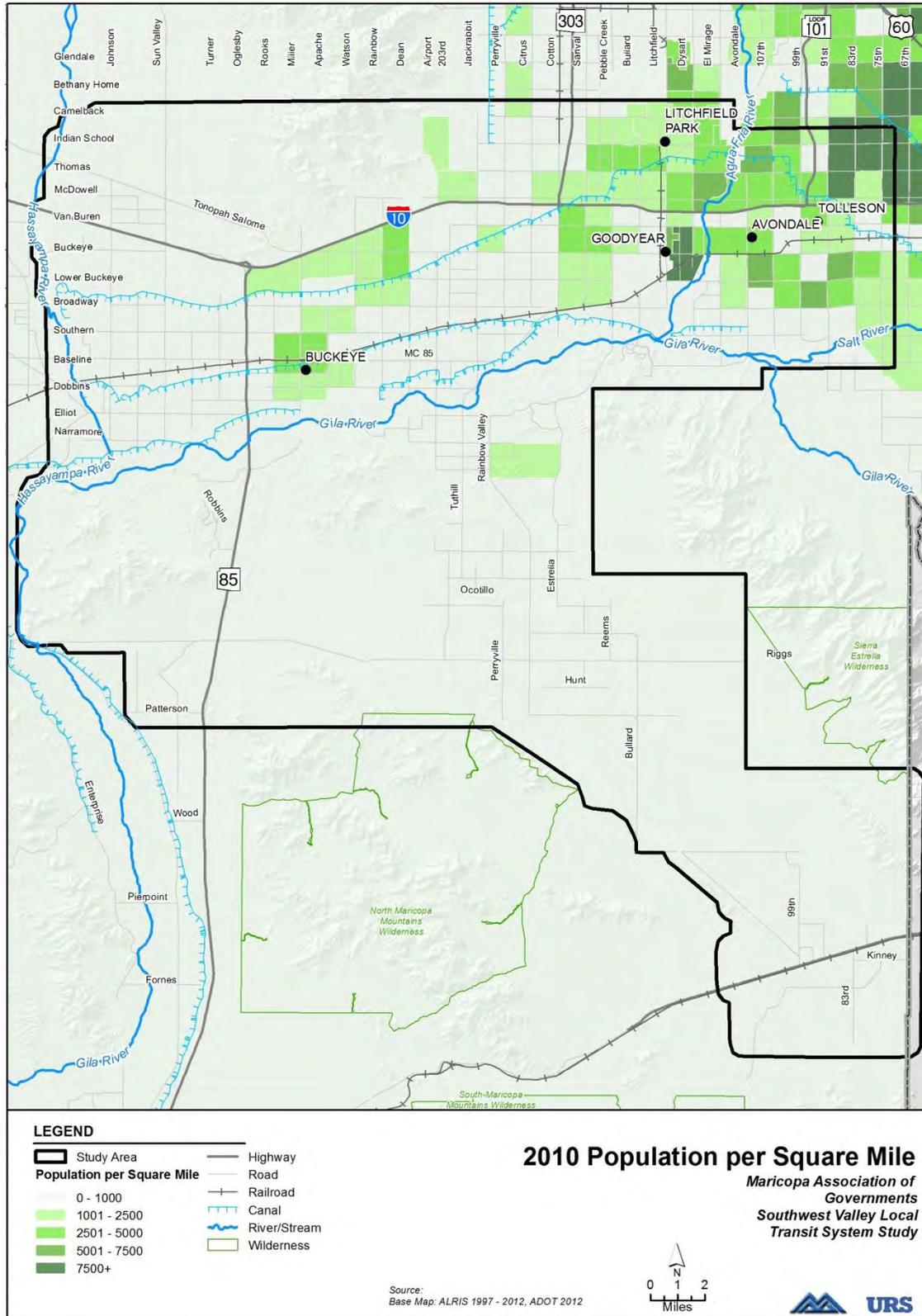
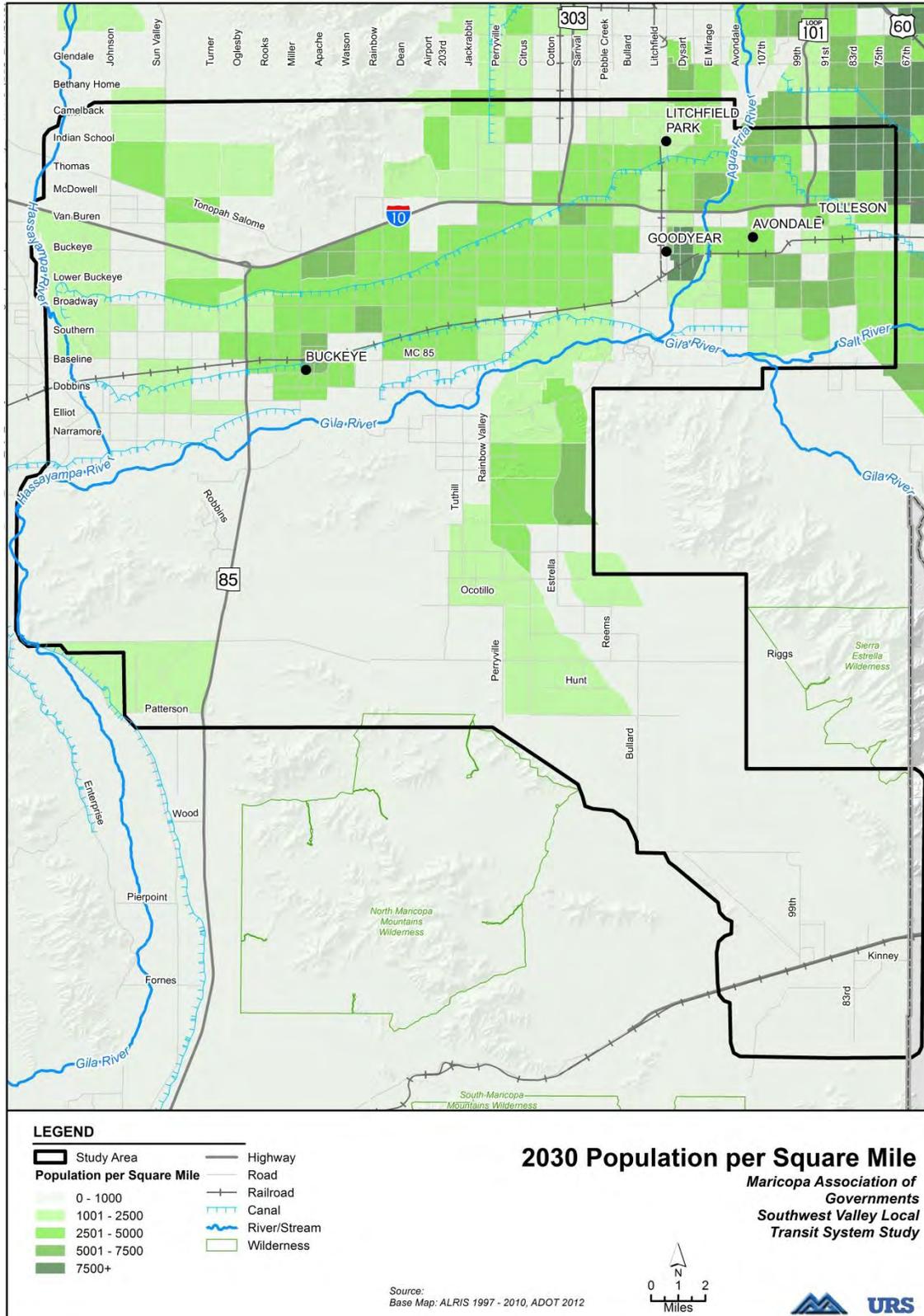




Figure 5 2030 Population Density





2.1.2 Employment

According to MAG data, employment in the study area was estimated to grow nearly 75% between 2005 and 2010 to over 110,000 jobs (see Table 5). Future employment growth in the study area is expected to occur most dramatically in Buckeye by 2030, although the population densities are still expected to remain lower than the areas to the east. Figure 6 and Figure 7 illustrate the current and projected employment densities. Projected growth areas include the portions of Avondale, Goodyear, and Buckeye located south of I-10 to the Gila River. In addition, the southernmost portion of Goodyear is expected to experience increased employment surrounding the Union Pacific Railroad (UPRR) railroad line just west of the Maricopa/Pinal County border. Note that 2010 data identified in Table 5 are derived from an estimate based on 2005 information and does not reflect current 2010 employment data from the US Census because projections were not updated at the time of this analysis.

Table 5 Southwest Valley Study Area Employment Growth – MAG Data

Jurisdiction	2005	2010 (Projection)	2020 (Projection)	2030 (Projection)	Anticipated Percent Growth (2005-2030)
MAG Region	1,747,532	2,157,424	2,788,101	3,378,800	93%
West Phoenix	14,263	24,026	34,754	42,636	199%
Tolleson	11,031	14,155	17,567	19,591	78%
Avondale	11,493	19,082	32,197	42,218	267%
Goodyear	14,995	26,395	64,597	105,324	602%
Litchfield Park	1,275	1,798	2,572	3,607	181%
Buckeye	5,642	15,979	34,696	67,752	1101%
Maricopa County	7,166	13,450	34,399	69,190	866%
Total	65,864	114,885	220,781	350,318	432%

Source: MAG, 2007.



Figure 6 2010 Employment Density

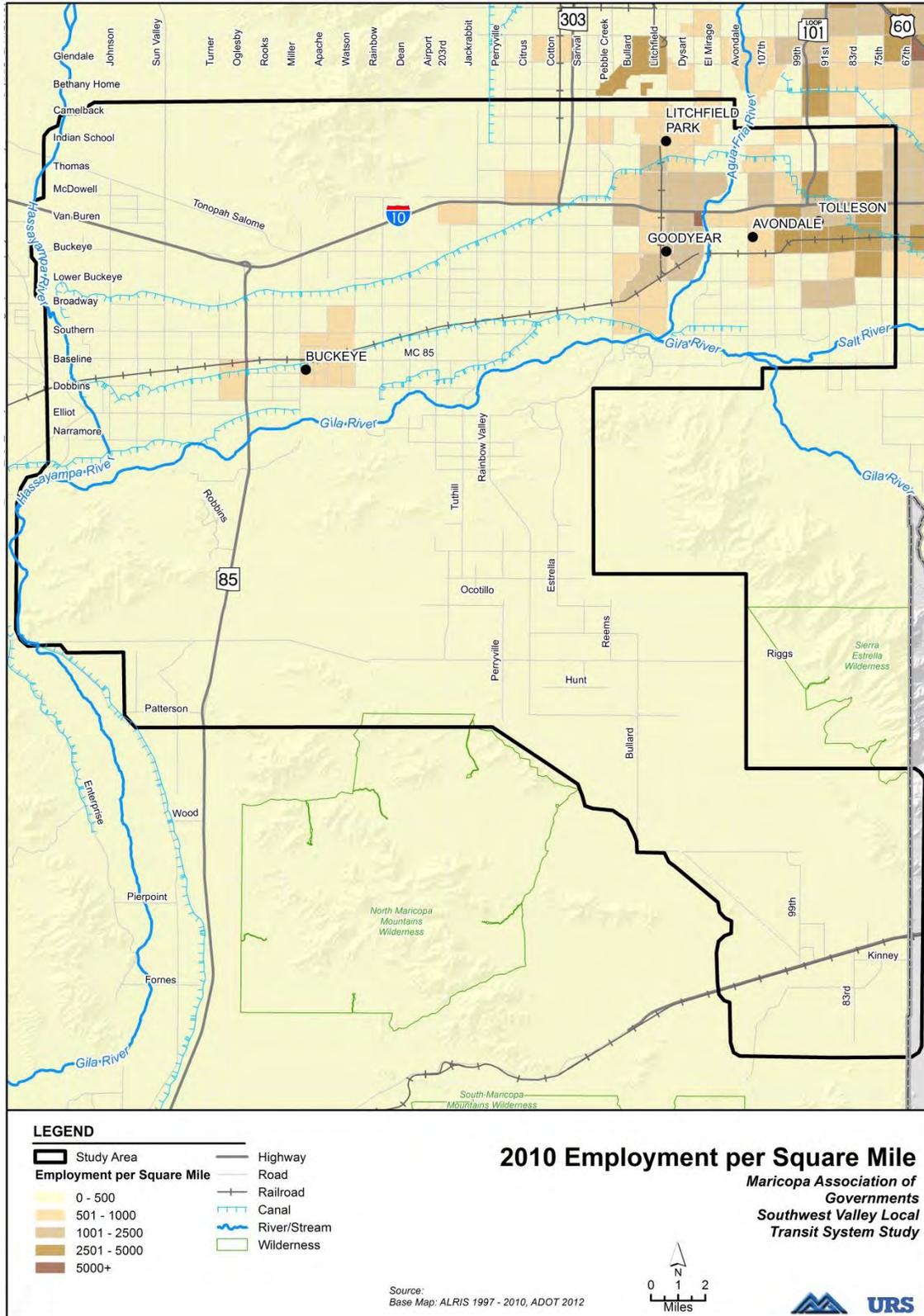
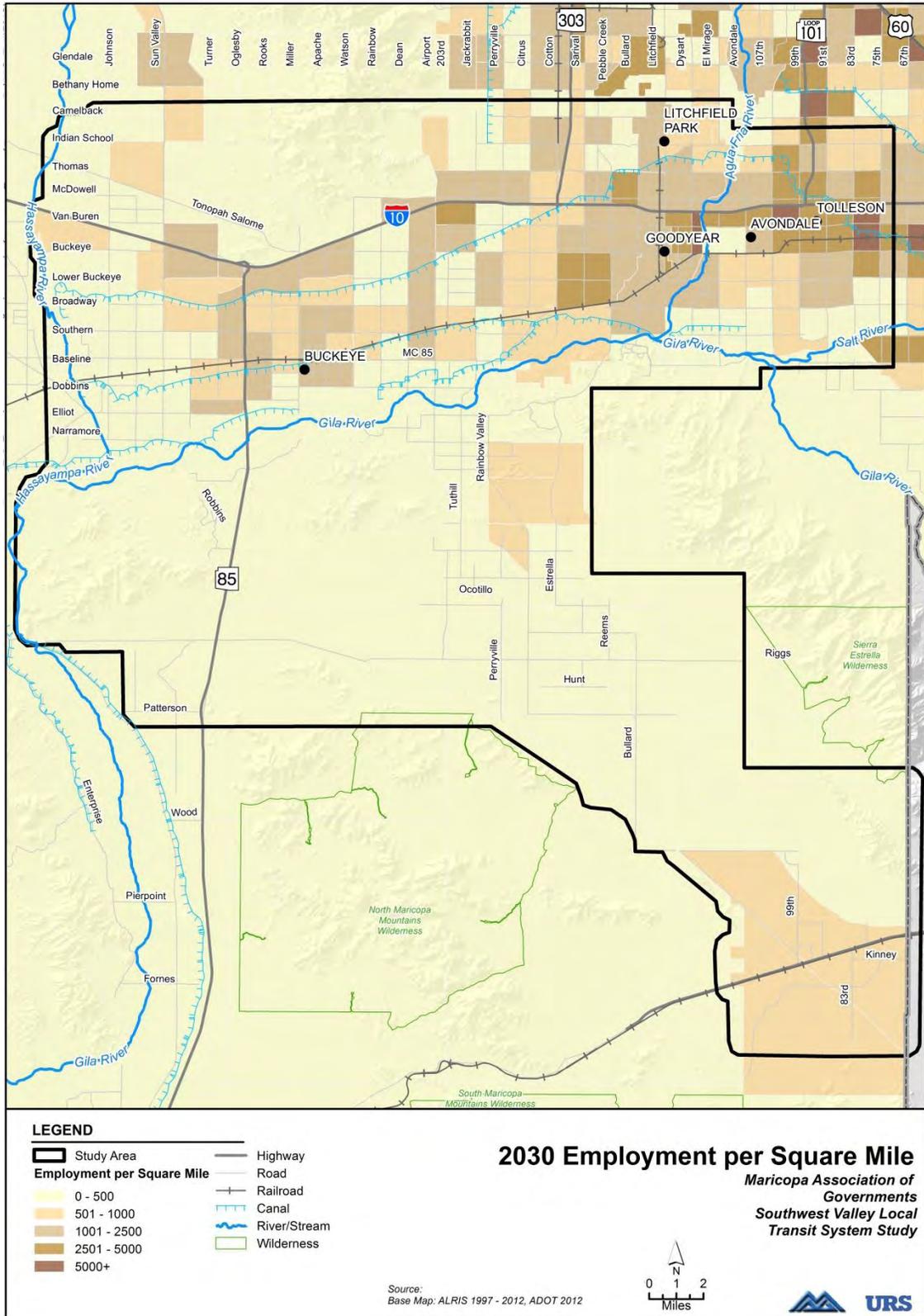




Figure 7 2030 Employment Density



2.2 Land Use

Land use policies that are compatible with transit, such as scalable higher density or mixed use transit-oriented development, would promote the success of an enhanced transit network throughout the Southwest Valley. Land use that promotes higher densities, a mix of employment, residential, and other types of activity centers, typically promotes transit use because there are people living and working in areas that can be accessed either wholly or partially with public transportation.

Existing land uses in the study area are shown in Figure 8. Planned or future local land uses are part of the 2031 MAG model to analyze future transit trip productivity. Trip productivity is defined as the level of ridership estimated to occur and the cost of the service (i.e., is it cost effective to provide a certain level of service for that level of rider benefit), and is partially derived from the density of population and employment in the transit service area. The future land use data in Figure 9 represent land use at the projected build-out point for the study area when there is no vacant land, not necessarily what the future will look like in 2030. The majority of the area that is currently undeveloped and vacant is projected by the local jurisdictions to develop as residential land uses. Other significant land use growth is projected for commercial, office, and industrial land uses.

In August 2012, the City of Avondale completed an update to their General Plan. The City of Goodyear is also conducting an update to its General Plan. Because they are so current, the land uses associated with these general plan updates are not reflected in the 2031 MAG model output. However, through discussions with local PMT representatives and community stakeholders, these land use updates were taken into consideration when identifying the future transit recommendations associated with this plan. In addition, recent or ongoing MAG studies include the *Complete Streets Guide, Sustainable Transportation – Land Use Integration Study*, and the *Designing Transit Accessible Communities Study*. These studies provide information regarding transit-supportive land uses, densities, and design standards for growing communities

Table 6 Southwest Valley Existing and Future Land Use within the Study Area

Land Use Category	Existing Land Use		Future Land Use (Build-out)	
	Acres	Percent of Total	Acres	Percent of Total
Agriculture	83,882	19%	384	<1%
Residential (<1 du/acre)	11,371	3%	54,699	12%
Residential (1 – 4 du/acre)	3,882	<1%	74,465	17%
Residential (>4 du/acre)	20,603	5%	59,774	13%
Multi Family	980	<1%	10,921	2%
Commercial	8,481	2%	24,516	5%
Developing	13,187	3%	5,963	1%
Industrial	3,783	<1%	17,811	4%
Mixed Use	0	0%	8,551	2%
Office	299	<1%	17,091	4%
Open Space / Recreation	130,304	29%	142,786	32%
Public / Private Institutions	8,417	2%	12,175	3%
Transportation / Parking	4,845	1%	6,688	1%
Water	14,631	3%	14,656	3%
Vacant	145,814	32%	0	0%
Total	450,479	100%	450,479	100%

Source: MAG, 2009.



Figure 8 Existing Land Use (2011)

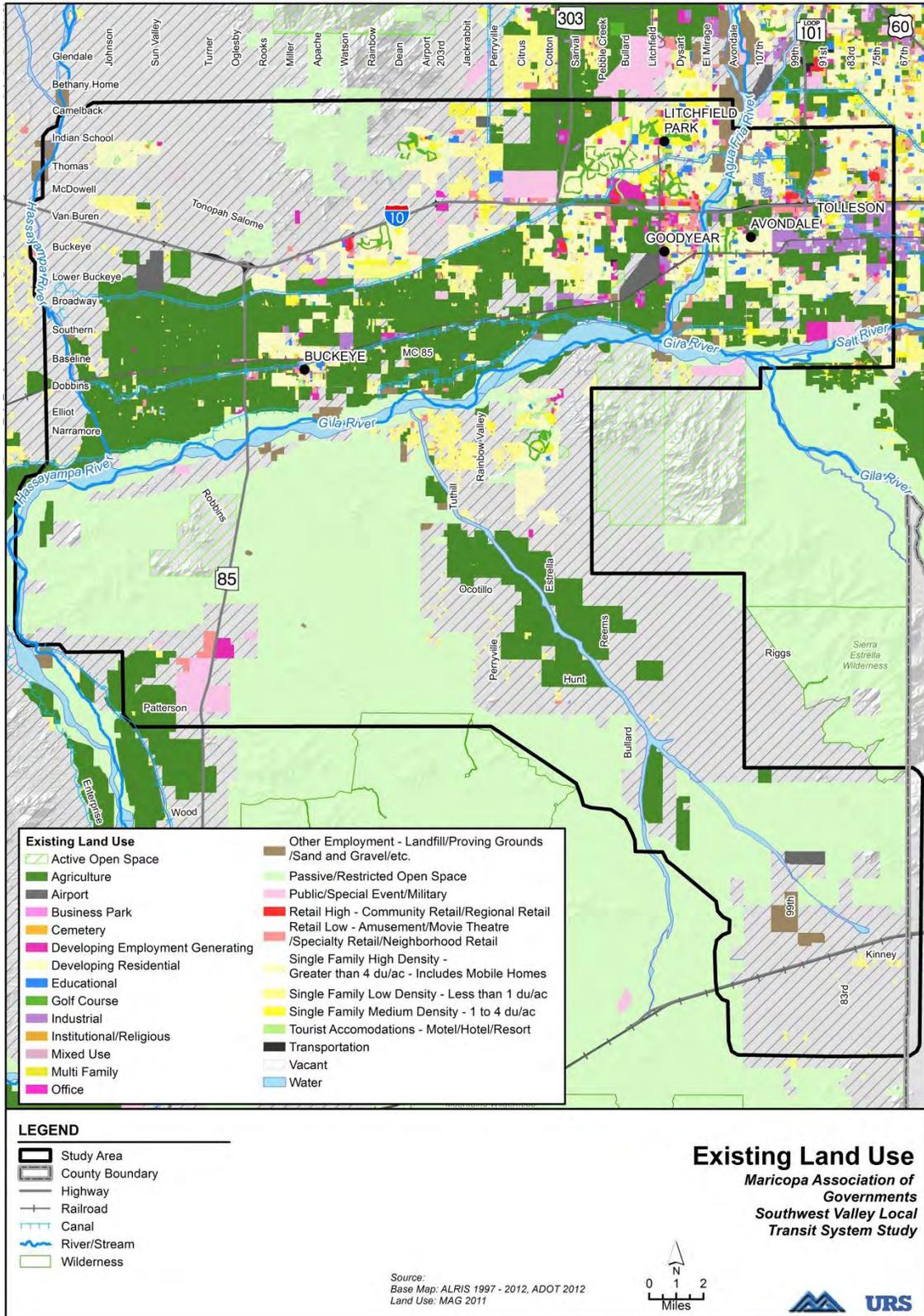
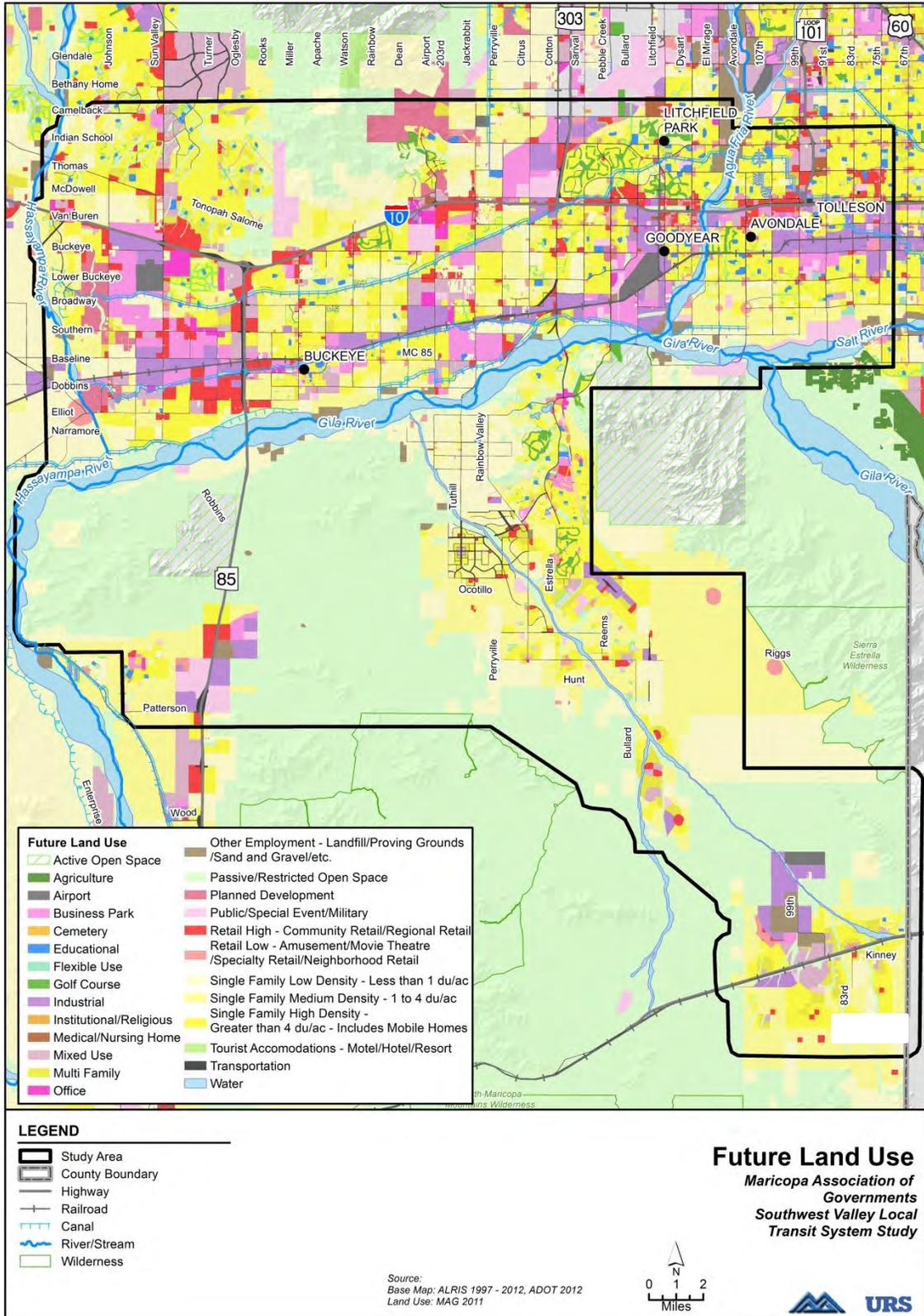




Figure 9 Future Land Use (Build Out)





2.3 Travel Patterns and Markets

An analysis of data from the MAG regional travel demand model was conducted to assess the existing and anticipated trip patterns in the study area. For more detailed trip pattern analysis refer to *Working Paper 4: Local Transit Needs Assessment*. For this analysis, the study area was divided into districts (illustrated on Figure 11), which are described in more detail in *Working Paper 4*.

Model data were analyzed to identify the magnitude of trip generation at the district level and the proportion of trips that are internal (within the study area) versus external (leaving or coming into the study area). A key finding is that the majority of total daily trips are generated within the study area and remain internal to the study area in both 2010 (59.8%) and 2031 (67.8%). This projected increase in internal trips is consistent with the projected land use and demographic patterns that suggest growth and land use diversification (i.e., more retail/commercial uses and employment locally) over time.

In addition, the percentage of internal trips that represent daily commutes to work is projected to increase as the study area more fully develops. Of the daily work trips that originate in the study area today, the majority leave the study area. In 2031, this pattern changes and about 60% of those trips are projected to stay within the study area.

The travel pattern analysis examined specific districts to identify the most intense trip interchanges. Districts with the major trip interchanges are candidates for provision of local connecting transit services, and districts with a large number of internal trips may also be good candidates for circulator services. The top five district-level internal trip interchanges were identified for all trips as well as work commute trips only. Figure 10 and Figure 11 illustrate the top five current and future interchanges for both total and work trips.

For all trips, there is an existing circulation pattern in the Avondale/Goodyear/Tolleson/Litchfield Park/West Phoenix areas in the northeast. In the future, this is expected to stretch westward consistent with projected growth patterns. Specifically for work trips, the most dense trip interchanges are also in the northeastern part of the study area, and the 2031 data suggest new trip patterns emerging in Buckeye.



Figure 10 Top Five Total Trip Interchanges (2010 & 2031)

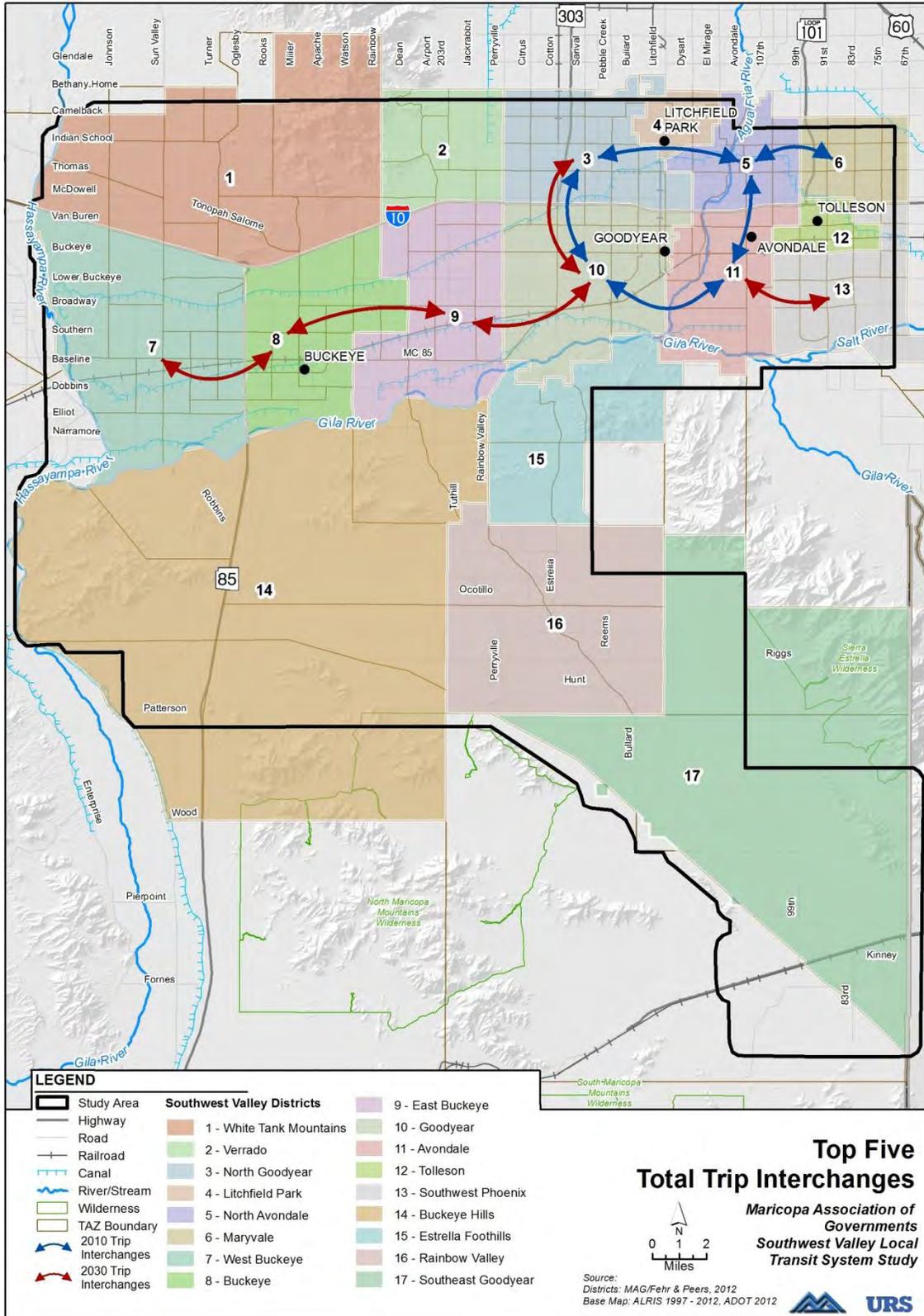
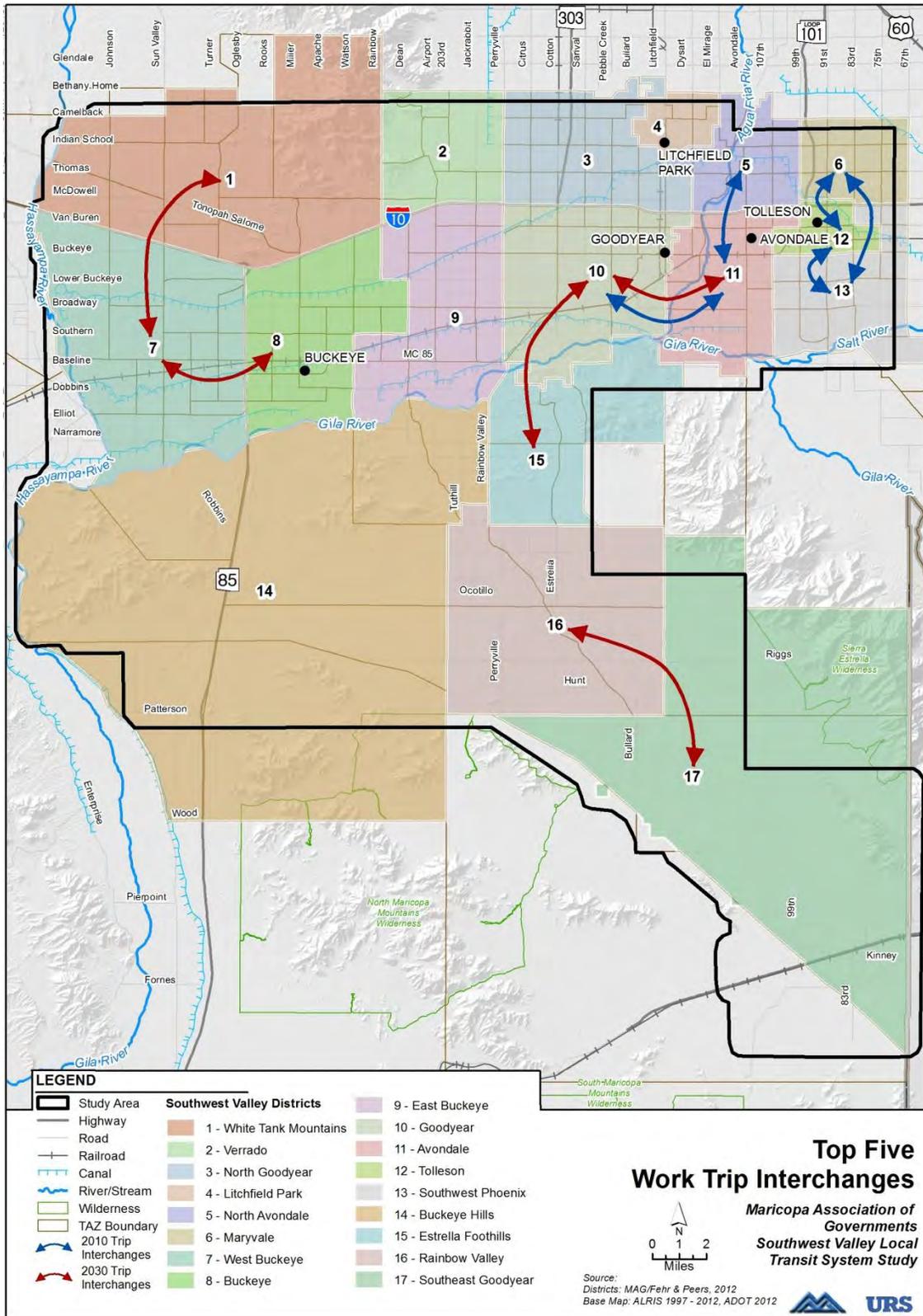




Figure 11 Top Five Work Trip District Interchanges (2010 & 2031)





2.4 Existing and Planned Transit Service

The existing and planned transit services that are fiscally constrained to the RTP were analyzed. Transit services that are currently provided in study area include fixed route arterial bus and circulator service, and ADA-compliant demand-response service. Several park and ride locations are served by express bus service to downtown Phoenix. Existing transit service was analyzed in terms of weekday ridership because, while weekend ridership is important to the success of the overall transit system, services need to operate efficiently on weekdays for the system to be productive.

2.4.1 Existing Fixed Route Bus Service

Bus routes that are currently in operation in the study area are summarized in Table 7 and mapped in Figure 12. Existing service is funded through a combination of regional, federal, and local funds.

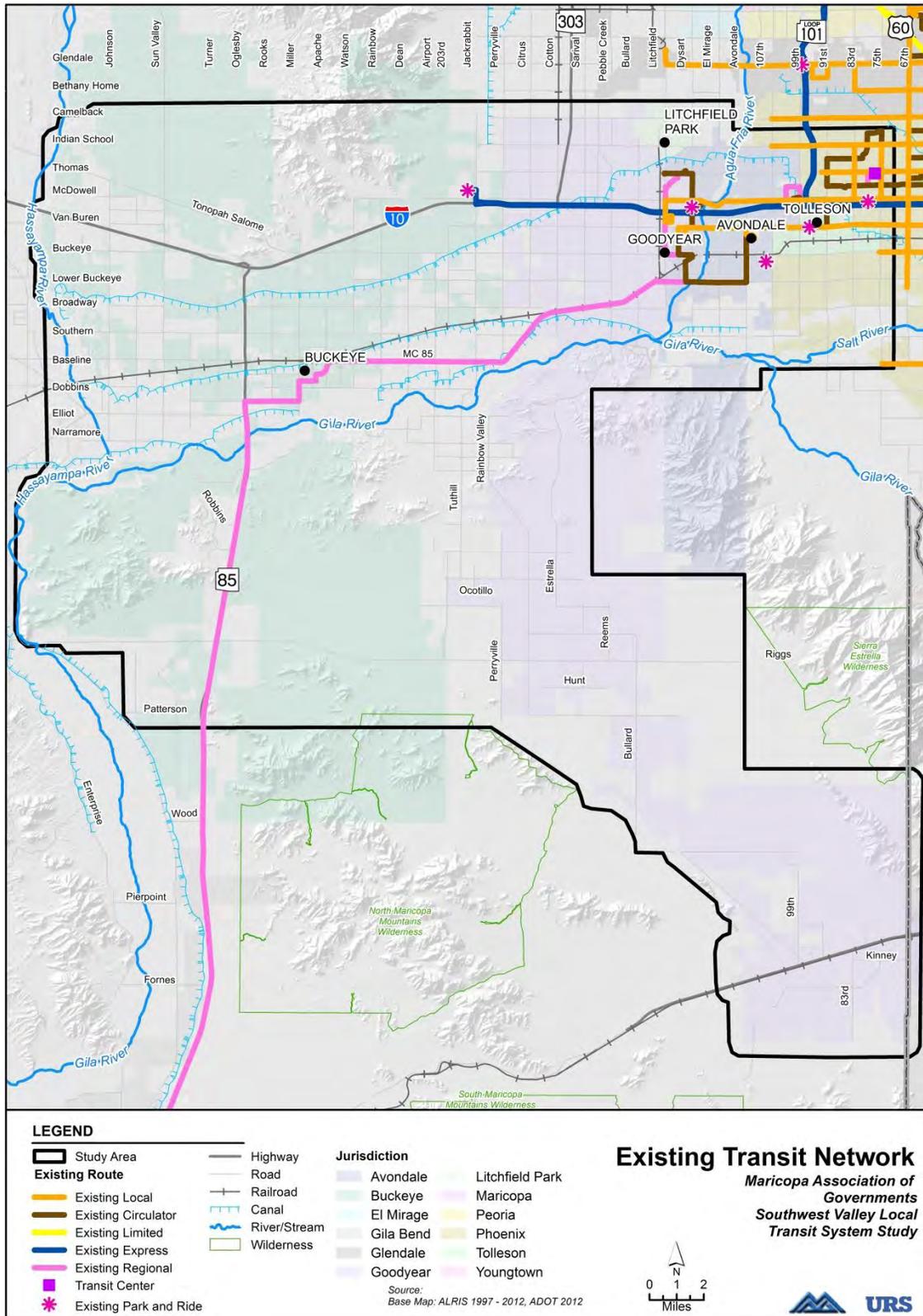
Table 7 Existing Arterial Fixed Route Ridership (Weekday Only)

Route (Jurisdiction)	Total Passengers (FY 2011-2012)	% Change in Total Passengers since 2010-2011	Passengers per Mile	Weekday Service Frequency
Route 3 (Van Buren)				
Phoenix	1,291,709	7.24%	2.9	15/30 minutes
Avondale	49,624	29.17%	1.2	60 minutes
Tolleson	28,556	41.42%	1.3	60 minutes
TOTAL Route 3	1,369,889	8.45%	2.7	Varies
Route 17A (McDowell)				
Phoenix	51,575	8.62%	1.9	60 minutes
Avondale	37,996	8.24%	0.7	60 minutes
TOTAL Route 17A	89,571	8.46%	1.1	60 minutes
Other Regional/Citywide Routes partially within Study Area				
Route 13 (Phoenix)	294,239	11.06%	1.3	30 minutes
Route 17 (Phoenix and Scottsdale)	1,890,205	3.29%	3.2	12/15/30 minutes
Route 29 (Phoenix and Scottsdale)	2,518,739	4.90%	4.1	10/20/30 minutes
Route 41 (Phoenix and Scottsdale)	2,250,607	2.84%	3.3	15/30 minutes
Route 77 (Phoenix, Tempe, Mesa)	716,304	11.40%	2.1	30 minutes
System-wide (All Fixed Route Bus Service)	41,369,327	3.18%	2.2	Varies

Source: FY 2011-2012 Annual Ridership Report prepared by Valley Metro. NOTE: Fiscal year runs from July 2011 through June 2012



Figure 12 Existing Transit Network



Circulator and Rural routes within the study area include the MARY in Phoenix, the ZOOM in Avondale and Tolleson, and Route 685, the Ajo/Gila Bend Regional Route that connects Gila Bend and Ajo to the Desert Sky Mall Transit Facility. Ridership data for these routes are summarized in Table 8.

Table 8 Existing Circulator and Rural Route Ridership (Weekday Only)

Route/Jurisdiction	Total Passengers (2011-2012)	% Change in Total Passengers since 2010-2011	Passengers per Mile (2011-2012)	Weekday Service Frequency
Circulators				
ZOOM/ Avondale	87,876	N/A*	0.4	30 minutes
MARY/ Phoenix	324,170	-6.06%	2.1	60 minutes
Rural Route 685				
Various	13,481	-7.53%	0.1	5 trips per day

*If compared to the discontinued Route 131, which covered a similar route at 60 minute service frequency, the % change would be 106%.

Source: FY 2011-2012 data from FY 2011-2012 Annual Ridership Report prepared by Valley Metro; Route 131 data are from FY 2010-2011 Annual Ridership Report. **NOTE:** ZOOM service began in Tolleson in July 2012 and the expanded route is not included in these data.

2.4.2 Existing Express Bus Service

Express bus service operates during peak periods on weekdays. Two express buses serve the study area. Although the type of regional service provided by express buses is not the focus of the study, this information provides a sense for how many residents are using existing regional commuter services to and from the study area.

The express bus service was restructured in July 2012 to maximize use of park and ride lots and reduce trip times. As part of restructuring, Route 560 was eliminated. Route 560 had traveled on local streets in Avondale. The currently operating express routes are summarized in Table 9.

Table 9 Existing Express Bus Ridership (Weekday Only)

Route/Jurisdiction	Total Passengers (2011-2012)	% Change in Total Passengers since 2010-2011	Passengers per Mile (2011-2012)	Weekday Service Frequency
Route 562				
Goodyear	19,053	-25.30%	2.3	3 AM Trips 3 PM Trips
Phoenix	17,107	14.15%	1.2	
Route 562 Total	36,160	-10.70	1.6	
Route 563				
Buckeye	5,103	N/A	5.5	2 AM Trips 2 PM Trips
Goodyear	3,071	N/A	0.7	
Phoenix	8,785	N/A	1.3	
Route 563 Total	16,959	N/A	1.4	
RAPID I-10 West				
Phoenix	154,844	2.45%	1.9	12 AM Trips 13 PM Trips

Source: FY 2011-2012 Annual Ridership Report prepared by Valley Metro.

2.4.3 Existing Fixed Route Service Performance

The assessment of service efficiency is based on the data compiled by Valley Metro on an annual basis into the Transit Performance Report, and reflects various measures of cost-effectiveness (operating cost per mile as well as subsidy per boarding). Table 10 lists selected data from the annual Transit Performance Report for fiscal year 2011, which reflects the most recent Transit Performance Report at the time of this writing.

Table 10 Existing Fixed Route Service Performance*

Route/Jurisdiction	Net Operating Cost per Revenue Mile	Farebox Recovery Ratio	Net Operating Cost per Boarding
Route 3 (Van Buren)			
Phoenix	\$3.14	53.4%	\$0.71
Avondale	\$6.60	2.2%	\$38.56
Tolleson	\$6.00	11.2%	\$7.11
Route 3 Total	\$4.69	30.5%	\$1.86
Route 17A (McDowell)			
Phoenix	\$4.25	37.1%	\$1.39
Avondale	\$6.11	9.4%	\$6.61
Other Regional/Citywide Routes partially within Study Area			
Route 13 (Phoenix)	\$5.81	14.0%	\$5.35
Route 17 (Phoenix and Scottsdale)	\$4.98	26.2%	\$2.47
Route 29 (Phoenix and Scottsdale)	\$3.63	46.3%	\$0.96
Route 41 (Phoenix and Scottsdale)	\$4.28	36.6%	\$1.44
Route 77 (Phoenix, Tempe, Mesa)	\$4.24	28.6%	\$2.22
Circulators			
Avondale (ZOOM)	\$3.65	N/A	N/A
Phoenix (All circulators)	\$6.50	0	\$2.90
SYSTEM-WIDE (Fixed Route Service Only)	\$7.08	22.0%	\$2.94

Source: Transit Performance Report for FY 2011 prepared by Valley Metro. ZOOM data provided for FY 2011-2012 by Valley Metro.

*Data includes existing circulator service performance

2.4.4 Summary of Existing Service Performance

The data for total Route 3 are consistent in suggesting that this route compares favorably to the system-wide average for fixed route service. The breakdown of information for each city served by the route suggests that productivity and cost-effectiveness decrease as the route moves out from the central city into the lower density land use patterns such as those in the study area. This pattern is typical for this type of route. However, the difference in service frequency may also explain the less effective service within the study area portion of the route; less frequent service is less convenient and thus typically corresponds with lower ridership.

Route 17A connects points in Avondale with Desert Sky Mall and the Desert Sky Mall Transit Center. Growth in ridership on this route has outpaced the system-wide average, but may be limited by the 60-minute headways.



The data for other routes within the study area that continue eastward across the metropolitan area include some of the busiest and most cost-effective routes within the entire system. The higher ridership on Routes 17, 29, and 41 reflects the high service frequency, higher population and employment densities across the central part of the metropolitan area, and connectivity with other services at large transit centers at Desert Sky Mall and downtown Phoenix Central Station.

The ZOOM began service in 2011 and is considered successful because it serves more riders at a more affordable operating cost per passenger than the fixed route/arterial grid service that it generally replaced (Route 131, discontinued in 2011). The ZOOM has experienced higher ridership than Route 131 did the prior year, and increased the number of revenue miles. Due to budget cuts, service frequency on the MARY circulator has been reduced from 30 to 60 minutes in recent years. This change has led to a drop in ridership although the passengers per mile is still fairly consistent with the system-wide average for all fixed route service, suggesting continuing demand for this neighborhood service.

Rural Route 685 has experienced fairly consistent ridership over the past several years. Although the route does not perform well in terms of cost-effectiveness compared to fixed route service, it performs well in comparison to other rural routes within the state and meets a specific need for medical, work and school trips from Ajo and Gila Bend to the Desert Sky Mall Transit Center, which provides transfers into the region's central business district.

2.4.5 Planned Fixed Route Bus Service

Local Bus (Supergrid)

The RTP identifies a total of ten Supergrid routes that are planned to serve the Southwest Valley in some capacity by 2031. These planned Supergrid routes are primarily located in the northeast section of the study area and are identified in Table 11. Supergrid routes will offer a consistent level of service and improved passenger access throughout all jurisdictions within the MAG region. The full network of RTP routes is shown in Figure 13.

The TLCP outlines the expenditures to be funded through regional funding (from sales tax approved under Proposition 400) and is updated regularly to align project expenditures with revenue projections. The current TLCP identifies some earlier funding for the Van Buren route in Avondale as soon as 2015.

Express Bus

The RTP identifies two planned express bus routes that will serve the Southwest Valley by 2031. The Buckeye Express began operation in January 2012 and the Loop 303 Express, as shown in Table 11, is scheduled to be implemented in Phase V (2026-2031) of the MAG RTP.

Table 11 Planned Supergrid and Express Bus Service

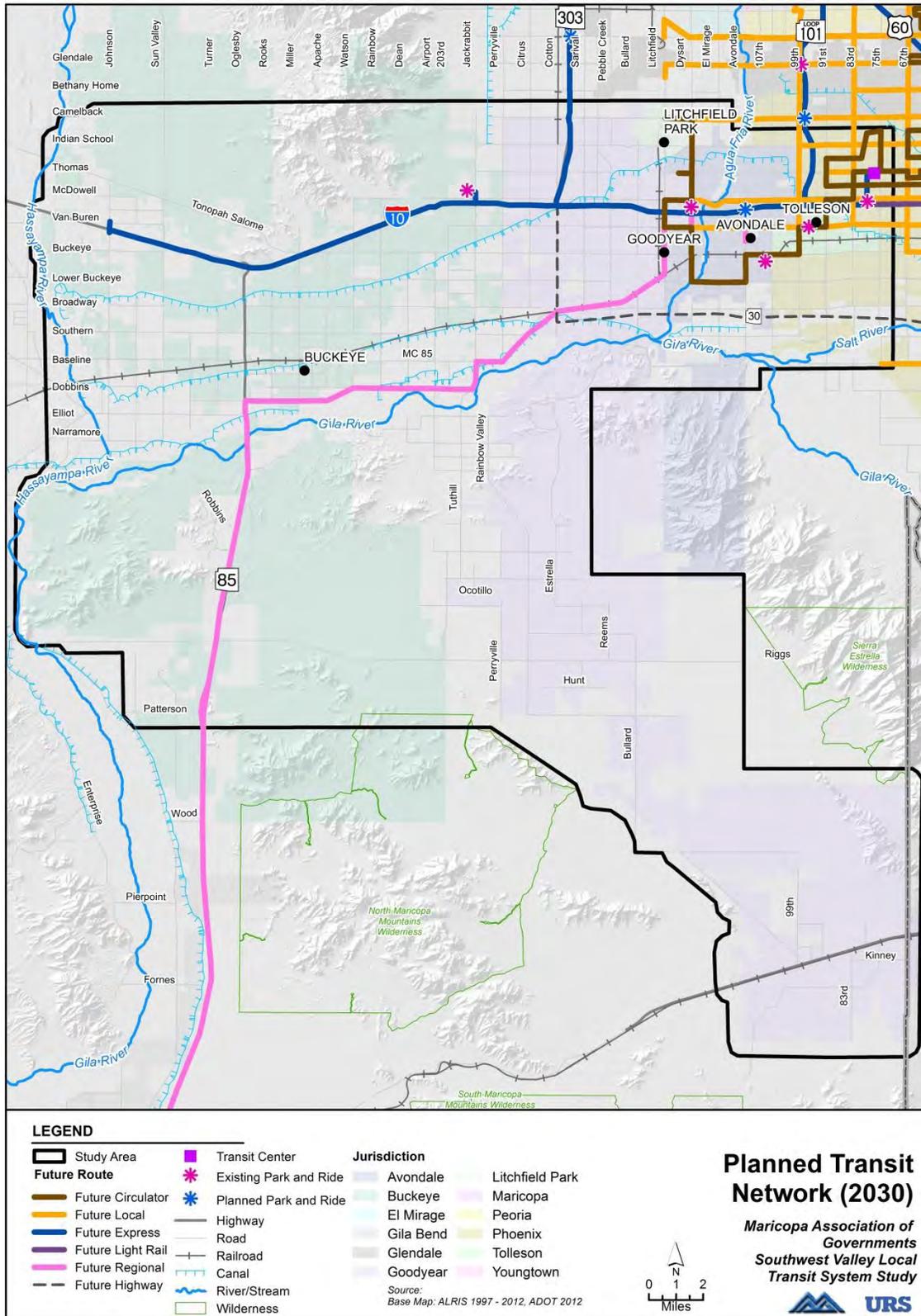
Route	RTP Phase	Weekday			Saturday		Sunday	
		Peak Headway (min)	Base Headway (min)	Service Span (hr)	Base Headway (min)	Service Span (hr)	Base Headway (min)	Service Span (hr)
Supergrid								
McDowell Road	II ('11-'15)	15	30	18	30	17	30	17
Thomas Road	V ('26-'31)	15	30	18	30	17	30	17
Van Buren Street	IV ('21-'25)	15	30	19	30	18	30	18
Indian School Road	V ('26-'31)	15	30	18	30	17	30	17
Camelback Road	IV ('21-'25)	15	30	19	30	17	30	17
Baseline Road	II ('11-'15)	15	30	18	30	17	30	17
Buckeye Road	V ('26-'31)	30	30	18	30	15	30	15
Dysart Road	V ('26-'31)	30	30	18	30	15	30	15
83 rd /75 th Avenue	IV ('21-'25)	30	30	18	30	16	30	16
99 th Avenue	V ('26-'31)	30	30	17	30	15	30	15
Express Bus								
Loop 303 Express	V ('26-'31)	8 Weekday Peak Trips			-	-	-	-

Source: MAG, 2010 and Valley Metro, 2011.

Other transit modes have been subject to planning studies in the study area. The Phoenix West light rail transit extension is under development by the City of Phoenix and Valley Metro, and would extend light rail service to 79th Avenue and the I-10. In addition, the Yuma West Commuter Rail Corridor Development Plan was completed by MAG in 2010, and evaluated the feasibility of commuter rail service along the existing UP corridor that runs through the Southwest Valley.



Figure 13 Planned Transit Network



3.0 RECOMMENDED SERVICE AREA AND SERVICE TYPES

The service area and service types are the building blocks for transit; they define the area to be covered with service and the types of vehicles and trips that would be served. The service types that are recommended for use in the Southwest Valley include:

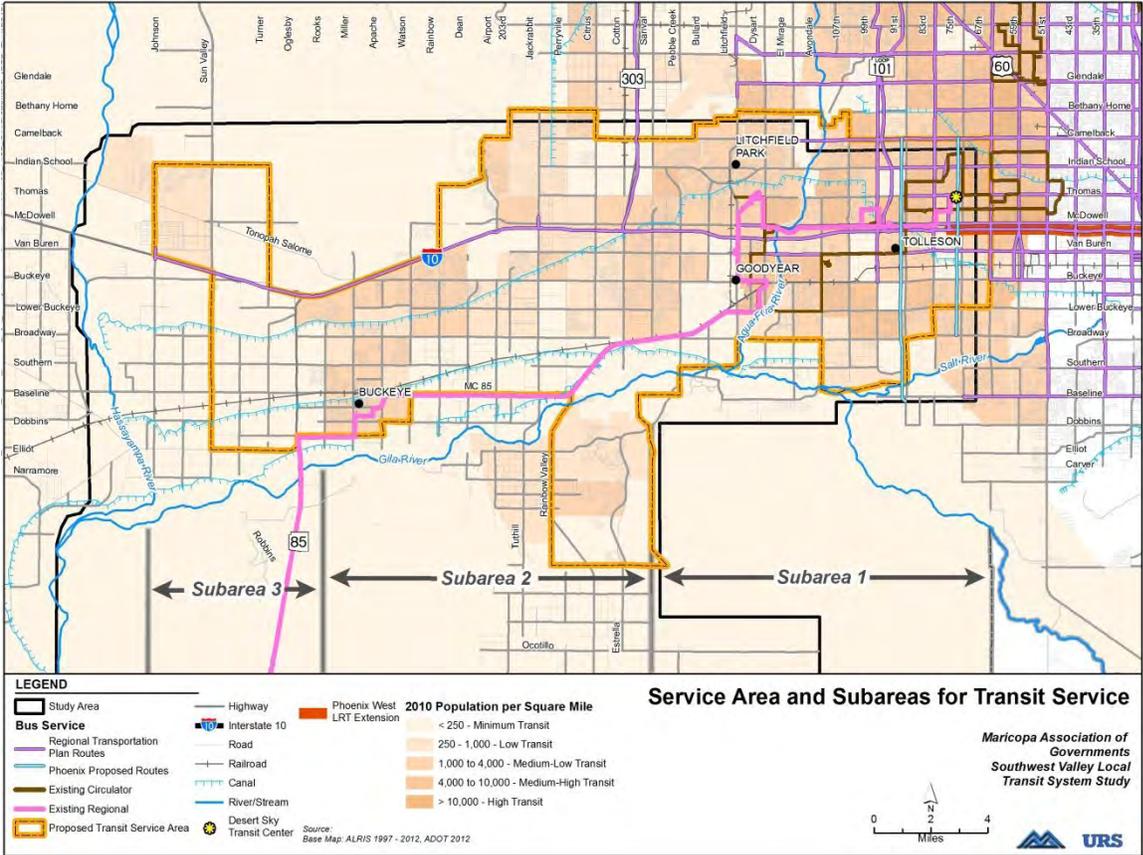
- Arterial grid fixed routes
- Circulator services
- Flexible service
- Americans with Disabilities Act (ADA) service

These are local transit service types that would connect to regional services such as express bus, light rail, or commuter rail. This Plan is focused on the local transit services that would connect to regional services and serve local trips within the study area.

This chapter identifies the service area that was delineated within the study area and describes the rationale for its boundaries, and outlines the service types recommended for future implementation within the Southwest Valley.

Figure 14 illustrates the service area for the Southwest Valley Local Transit Plan.

Figure 14 Service Area and Subareas for Transit





3.1 Service Area

A long range transit service area was defined based on data analysis, as presented in Figure 14, to delineate the portion of the study area within which transit service would be needed and reasonably productive over the next 20 years. The service area represents the locations where transportation needs exist (as determined through the analysis of trip and land use patterns) and areas where there may be a propensity for transit in the future (based on densities and activity centers). The factors considered in defining the transit service area are described in more detail below.

Socio-economic indicators and development densities. These include population densities, employment densities, and development scale. The density data were reviewed to identify areas of relatively higher density and concentrations for inclusion in the service area. The service area includes areas that meet at least two of the following thresholds:

- 500+ jobs/ square mile
- 1000+ populations/ square mile
- 2500+ combined jobs and population /square mile

Downtown and major activity center locations. All downtowns and major activity centers (existing and known planned) are included within the service area. Major activity centers include major medical facilities, community colleges and high schools, major shopping centers, and community centers or event facilities. The activity centers included as part of the service area were identified through a public feedback process which also provided input on service recommendations including routing, service frequency and service span.

Trip patterns. As described in Section 2.3 and in *Working Papers 3 and 4*, an analysis was conducted to assess the most significant travel patterns. This analysis broke the study area down into smaller districts, and included looking at concentrations of trip ends (both origins and destinations) within the study area. The analysis focused on the most common trip interchanges both within the study area and between the study area and the larger region which included the areas just outside the study area boundaries mostly to the north and east. The service area includes:

- Top 5 districts of total trip ends
- Top 5 districts of total trip interchanges
- Top 5 districts of total work internal trips (with the exception of the southern most districts 16 and 17 due to large distance from the core service area).

3.2 Subareas for Transit Service

Within the service area, there are variations in the levels of existing development densities and the projected pace of future development. To address these factors, the service area is divided into generalized subareas as illustrated on Figure 14. Each is described below.

Subarea 1. This subarea includes the easternmost portion of the study area, which currently has the highest population and employment densities as well as some existing transit service and is the focus of the short-term recommendations. This area will support more intense transit service soonest including expansion of the regional arterial grid bus network and circulator



services to provide neighborhood connectivity. Within all subareas, ADA service will be provided within $\frac{3}{4}$ mile of any fixed route as required by law.

Subarea 2. This subarea includes portions of Goodyear and Buckeye that are projected to grow but may not support cost-effective transit service at the same level as Subarea 1. Arterial fixed route service is generally running east-west in order to connect the area to the regional grid system. The analysis concluded that the north-south arterial services would be less productive in this area. It is recommended that circulator service be provided to make those north-south connections and improve neighborhood connectivity. Flex service is a tool that may make sense in this subarea to cover less dense areas more effectively. Flex services are discussed in greater detail below in Section 3.3.

Subarea 3. This subarea includes the westernmost portion of the service area, which is projected to experience development, but may be less dense or farther off in time. The model analysis did not suggest that the larger investment of arterial fixed route service would be cost-effective in this area. It is recommended that the area would be covered more cost-effectively with circulator service connecting downtown Buckeye and other activity centers, and flex services.

3.3 Service Types

The Southwest Valley Local Transit Plan provides recommendations that include a variety of transit service types within the identified service area. The following service types are recommended in some phase of the long range plan for future implementation within the Southwest Valley. The long range plan includes the following service types:

- Arterial grid fixed routes
- Circulator services
- Flex service
- ADA service

Arterial Grid Fixed Routes. The regional bus system in the MAG region is based on an arterial fixed route system that is the backbone for transit services in the region. The long range plan includes expansion of these services into the Southwest Valley service area to provide both local circulation and connections to the larger regional system. Typically these routes are served by 40-foot buses (or larger). The planning level cost estimate associated with the long range plan assumes the implementation of a certain number of route miles within the service area.



This type of service is the largest cost component of the long range plan and represents a fairly large investment. Since multiple jurisdictions would receive benefits from the expansion of the arterial grid system, it is recommended that the communities in the Southwest Valley collaborate on the funding and planning for this service type. More detailed discussion of implementation strategies are provided in Section 4.0.



Circulators. Circulators are typically operated with smaller vehicles and connect neighborhoods with local activity centers such as shopping centers, schools, and community centers. In addition to improving local/neighborhood connectivity, circulators could also provide connections more cost-effectively than arterial grid service in some areas.



Circulators would be a much lower risk investment than arterial grid service, with a lower cost to initiate. In addition, the more localized service means that cities could pursue circulator service independently or in partnership. Circulators are recommended as an initial (short- or mid- term) step to bring more transit into the area, build ridership, and help transit to gain more traction in advance of a larger investment like the arterial grid service.

Flexible Service. Flexible service (or Flex service) is a service type that combines non-ADA demand responsive service with flexible routes over a specific geographic area where traditional fixed route service operates inefficiently. These services can be applied over a single independent coverage area or used as an overlay to traditional fixed route service options. Flex service would be anchored at an existing transit facility such as a park and ride or at well-known landmarks like shopping centers or downtown areas. These anchors would provide a connection to higher level transit services throughout the rest of the region. Flex service could take the form of a specialized peak period service, and during periods of lower demand may include curb-to-curb, reservation-based service that will pick up riders and take them anywhere within the specified service zone. Examples of successful flex service types are described in *Technical Memorandum 1: Best Practices*.

Flex service could be used in the Southwest Valley to provide trips between the fixed route transit services of the MAG region and the surrounding area through timed connections at specified transfer points, although other non-scheduled trips could also be allowed. Flex service would be operated all day with specific stops at park and rides, specified local fixed route bus stops, and at neighborhood circulator connections during the peak travel periods of the day. Customers would be able to directly contact the driver for pick-up or make online reservations for trips anywhere within the service zone.

The benefit of operating flex service within the Southwest Valley would be to keep costs down while providing improved local circulation as well as connections to the MAG regional transit network. Savings could be obtained over fixed route service not only because the vehicle and service type is less expensive, but because fewer vehicle and vehicle hours would be necessary for the same service area compared to traditional fixed route service.

ADA Service. Services provided in accordance with ADA are noted as a required complement to fixed route service. ADA demand-responsive service is federally mandated and must be provided within $\frac{3}{4}$ mile of a fixed route. This type of service is accounted for in the cost estimate. ADA service is provided for persons with disabilities and is not available to the general public. Users must be eligible for the service per ADA requirements.

4.0 PLAN RECOMMENDATIONS AND IMPLEMENTATION APPROACH

The planning effort addressed three different time/planning horizons including short-term (by 2015); mid-term (2020); and long-term (2030). The years 2020 and 2030 coincide with MAG datasets and planning horizons while 2015 is a near-term date associated with potential initial transit refinements. Although general dates are identified for the planning horizons, actual implementation is expected to occur as funding becomes available within each local jurisdiction.

Recommendations for transit coverage were developed based on the key principle of cost effectiveness. The data analysis was conducted to identify the level of arterial grid service that would be appropriate for the projected population and land use. One way to measure this is the number of boardings per revenue mile, which is the total number of passengers per mile of service. Currently, the system-wide average for weekday productivity for arterial fixed routes is 2.2 boardings per revenue mile. It is expected that the edge of the metropolitan area, like the Southwest Valley, would still be considered cost-effective if at least 1.2 to 1.3 boardings per revenue mile are achieved. This rate of ridership at suburban bus speeds and average local fares would result in an approximate 20% farebox recovery, which would be considered good in this setting.

The analysis of circulator services was not driven entirely by boardings per revenue mile, but integrated input from the PMT and the public, connectivity with key activity centers, and consistency with recent circulator studies and updated land use plans.

4.1 Short-term Recommendations: What Can Be Done Now?

Short-term actions would occur within the next several years, in advance of any major funding initiative like a sales tax. Generally, these actions tie back to the goals for this Plan (such as reduced travel times and improved accessibility and amenities) and are intended to build a collaborative foundation for long-term, subregional efforts like expanding the arterial grid system into the service area.

4.1.1 Additional Transit Service

1. **Increase frequency on existing routes 17A and 3 (west of Desert Sky Mall) from 60 minutes to 30 minutes.** The TLCP includes funds to make this service improvement on Van Buren (Route 3) by 2016. The Plan recommendation is to fund this improvement earlier as well as improve service on Route 17A (McDowell). In addition, funding for weekend service or later hours of service would also be consistent with the input on needs from the public survey.

Interlining routes 17A and 3 west of Desert Sky Mall Transit Center into one loop route may provide cost-neutral rider benefits, if it serves existing trips without a transfer. A possible option is to evaluate the use of a circulator route to serve the area west of Desert Sky Mall, as a lower cost way to achieve 30-minute service. The trade-offs would include a required transfer at Desert Sky Mall to arterial bus services and possible capacity issues due to the use of a smaller vehicle.

2. **Increase trips, service area, or capacity on ZOOM Circulator.** To address current capacity concerns it is recommended to (1) fund additional trips, or (2) pursue larger vehicles that may be available for use in Avondale via existing intergovernmental agreements. The City of Avondale is currently part of the small bus procurement with Valley Metro in procuring larger vehicles for the ZOOM route.



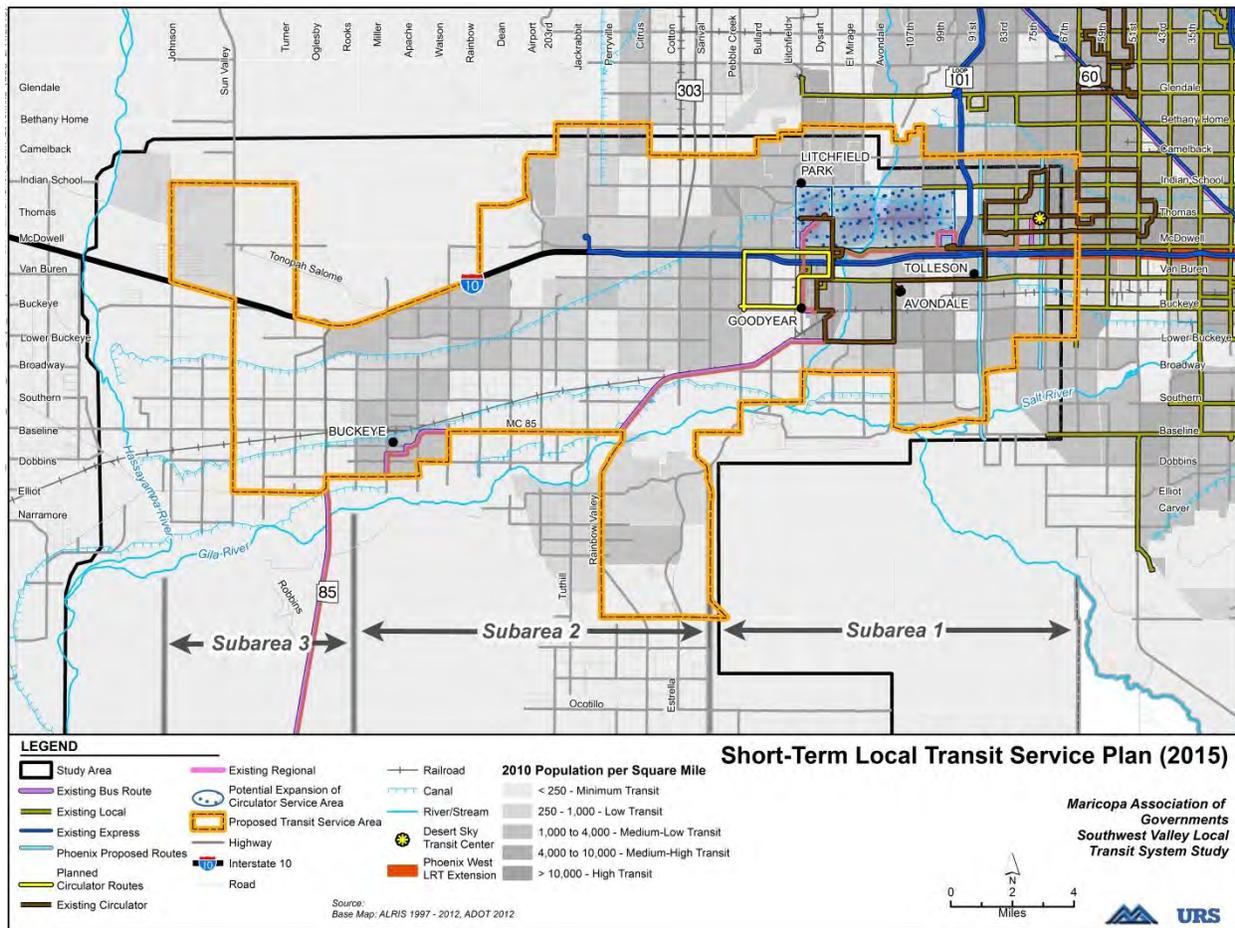
As practicable, explore opportunities for expansion in northern Avondale or with neighboring jurisdictions and to enhance connections with the Valley Metro transit system. For example, the Wigwam resort is located in Litchfield Park and the extension of service to this major activity center would create opportunities for local employees to use transit to and from work. Figure 15 illustrates an area for potential expansion of the circulator service area. A more detailed analysis of a future circulator route would be required to refine the route alignment, assess activity centers to be served at a much finer scale, and engage local residents in that specific discussion. The 2010 Avondale Circulator Plan identifies potential routes in the north Avondale area that may provide a starting point for analysis.

3. **Initiate pilot route for Goodyear circulator.** In 2010, the City of Goodyear adopted a Circulator Plan that identified a recommended pilot route for a neighborhood circulator. This route would connect with the ZOOM as well as regional transit services (via the Goodyear Park and Ride). A new circulator loop route could be advantageous compared to expanding existing circulator services further, to provide shorter and more convenient trips to local Goodyear destinations. The recommended pilot route is shown on Figure 15.
4. **Conduct planning study to identify Buckeye circulator alignment and Service Plan.** The Town of Buckeye has identified the need for and interest in a circulator to connect key activity centers and to connect with downtown Goodyear. The goals of a planning study would include detailed inventory of local existing and planned activity centers and a focused public involvement program, similar to the previous efforts in Goodyear and Avondale. This effort would build local support for a circulator service and define specific service details while funding is secured.

4.1.2 Other Short-Term Actions

5. **Establish a Southwest Valley transit group to lay the foundation for future service expansion.** Short-term implementation steps are designed to be completed without complicated cross-jurisdictional financing or operating agreements. To achieve the long-term objectives of expanding the arterial fixed route system, it would be helpful to have some level of collaboration to align service objectives and priorities and financing strategies. The short-term recommendation is to set up the institutional structure for continuing coordination among the jurisdictions who wish to advance the mid- and long-term implementation steps.
6. **Branding/Foster business partnerships to promote transit use and information.** Input from the Transit Summit conducted in April 2012 suggested the importance of branding and consumer education in building ridership and helping potential riders to understand how to best use transit for trips. It is recommended that partnerships with businesses in the study area be investigated. Stores in locations that are served by local transit may be interested in partnering with existing transit operators on advertising or joint marketing campaigns to promote transit and provide incentives for consumers to use transit. In addition, larger employers could pre-purchase fare media for their employees as a way to subsidize new services.

Figure 15 Short-Term Local Transit Service Plan (2015)



Vanpool programs may provide another opportunity for partnerships with study area employers. Vanpool programs are already operating within the area, particularly for the Palo Verde Generating Station workforce, and the Valley Metro vanpool program may provide additional opportunities to link employment centers with park and rides and/or fixed route service to the study area.

- Promote transit accessibility.** The low-density development, expansive surface parking, and wide street systems that are typically in place throughout the study area may deter transit riders if these features substantially increase the walking distance between destinations and stops. Direct access to office entrances or storefronts and links with sidewalks or other pedestrian walkways are opportune locations for transit stops. Although this study does not directly address this issue, separate efforts such as the *MAG Designing Transit Accessible Communities* study or the *Sustainable Transportation - Land Use Integration Study* may provide analysis or tools that are useful for local jurisdictions. As new development is proposed and considered within the study area, individual jurisdictions could consider the integration of transit accessibility considerations and the recommendations identified in this study through policy or the development approval process which may include zoning and/or rezoning, general and or comprehensive plan updates, transportation and transit plan updates, special use permit applications, and any other proposed land use modification processes that may be applicable.



Transit accessibility considerations should include but not be limited to investments such as bike lanes, paved canal paths, and secure bike storage at transit centers and park and ride lots.

In addition, it is also recommended that dialogue between local community development and economic development staffs and local and regional transit staffs occur to identify opportunities to address walk/bike access to transit services.

4.2 Mid-term Recommendations: Expanding Service by 2020

By 2020, service improvement recommendations are focused in Subarea 1, which is expected to be able to support productive transit (meeting accepted performance metrics) at this level by 2020. It is also recommended that the performance of transit service be reviewed periodically to determine if modifications are required to respond to changes in actual pace and type of development.

Recommendations for the expansion of the arterial grid system on Figure 16 are an illustrative route system, meaning that it is one reasonable configuration of future service. In reality, bus routes may be modified several times a year to optimize use. Specific route alignments may be modified to respond to the pace and nature of development over time. However this level of service (route miles and revenue miles) is projected to be productive in each subarea based on the analysis that was conducted from the regional travel model.

The basic approach to developing the illustrative route map included the following inputs:

- An analysis of transit productivity using the MAG regional travel model
- Refinement to integrate current plans and planning efforts
- Refinement based on PMT and stakeholder input

Additional transit services within this timeframe may include:

8. **Extend arterial grid fixed route service.** Expansion of the arterial grid route system would be part of a coordinated effort as it would affect service in multiple communities. The focus is on Subarea 1 (see Figure 14) and East-West routes are projected to be most productive. The associated cost estimate (see Section 5.2) assumes that these routes offer Saturday service and some 7-day a week service where ridership warrants. Based on data analysis of current socioeconomic projections, the illustrative route map for 2020 would expand service on the following arterials:

Table 12 Arterial Fixed Route Service Expansion in the Mid-Term

East-West Arterial Service	North-South Arterial Service
Route 3 – Van Buren west to Litchfield Rd (existing)	75 th Avenue south to Broadway (Phoenix proposed route)
Route 17A – McDowell west to Litchfield Rd (existing)	91 st Avenue south to Baseline (Phoenix proposed route)
Route 29 – Thomas Road west to Litchfield Rd	Litchfield Road north from Lower Buckeye Road
Route 41 – Indian School west to Litchfield Rd	Dysart north from Lower Buckeye Road
Route 13 – Buckeye Road west to Litchfield Rd	

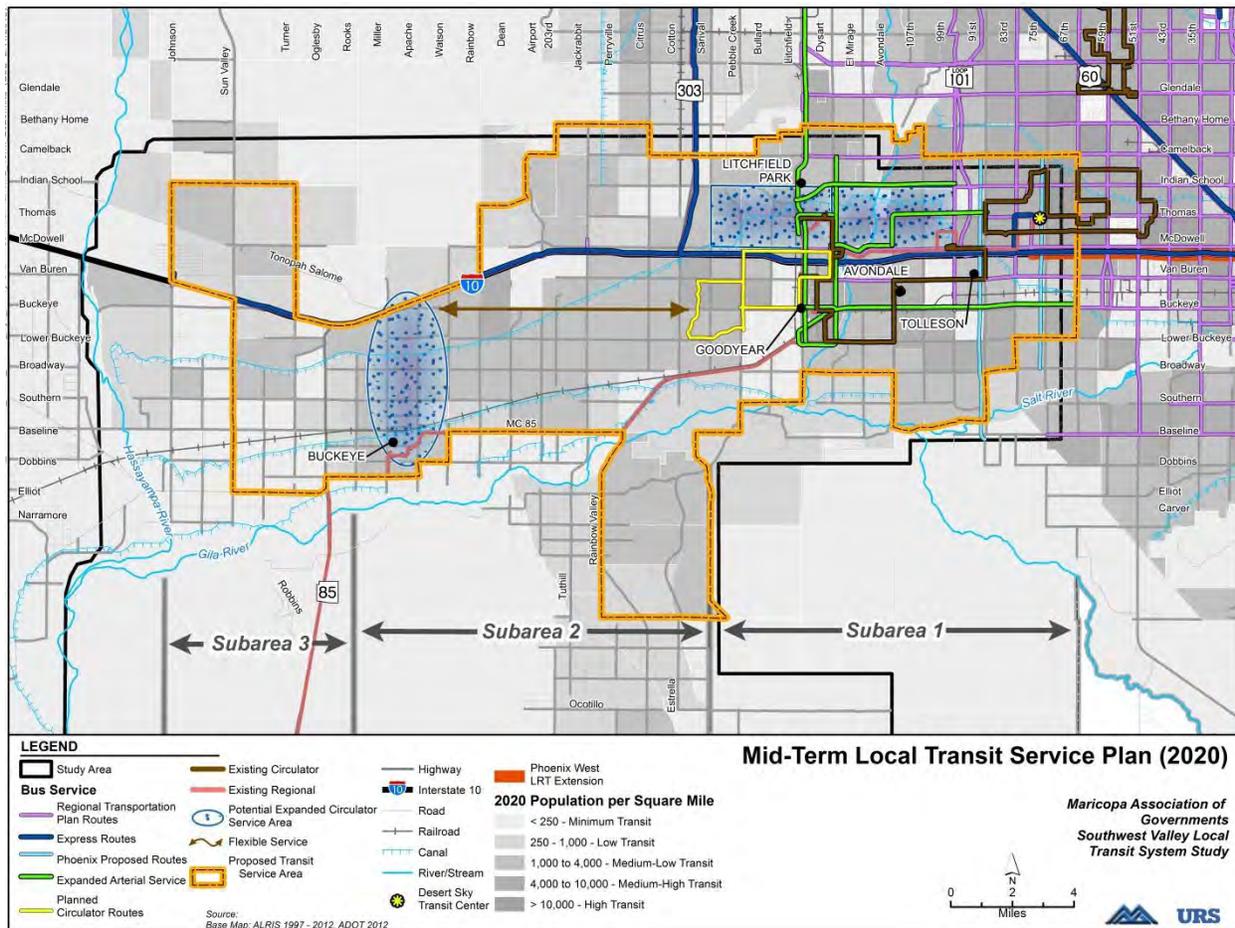
NOTE: Expanded service west to Dysart on Van Buren and McDowell Roads are already in the RTP.



Generally the arterial fixed route service is planned for 30 minute service, and ideally 30 minute service would be a minimum condition. However, the extended routes must at least match the service that they are connecting to. In the case of Thomas and Indian School Roads, the connecting routes in Phoenix are planned (per the current TLCP) to operate at 60 minute frequency and thus the extended routes along those arterials would also be expected to run at 60 minute service or the connecting service level, if better.

- 9. Identify opportunities for flex service along arterial system.** Flex service is a tool available to connect activity centers in areas with less density (see Section 3.3). Depending on how development patterns emerge, there may be a need to consider route deviation or demand responsive, non-ADA service that is reservations-based or that serves specific activity centers. As shown in Figure 16, the recommendation for the mid-term scenario is to consider a limited stop and/or peak period service between downtown Buckeye and Goodyear to more cost-effectively serve those two communities and cover the low density area in between.
- 10. Expand/revise circulator services.** Circulators may be modified to respond to changes in activity centers, land use patterns, or the need to more efficiently provide North-South service that connects arterial grid services. If the ZOOM Circulator has already expanded to the area north of I-10 within the short-term timeframe, route or service refinements would be expected to occur to respond to ridership patterns and other conditions. If the recommended pilot route for the Goodyear circulator is implemented in the short-term timeframe, service expansion may occur to the west or to respond to a major development like a regional mall. The 2010 Circulator Service Plan identified options for both of these routes, which may provide a starting point for evaluating service to new areas. Refinements considered to future circulator routes should include a public involvement process that results in community consensus.
- 11. Initiate Buckeye circulator.** The circulator service area in Buckeye (Figure 16) is preliminary but corresponds to pockets of higher population and employment density and also connects downtown Buckeye with key medical activity centers to the north as well as to the regional express services. The service plan recommended for development under item #4 would identify the specific service characteristics. A public involvement process is recommended to help identify future circulator options in Buckeye.

Figure 16 Mid-Term Local Transit Service Plan (2020)



4.3 Long-term Recommendations: An Approach for Advancing the Transit System in the Southwest Valley

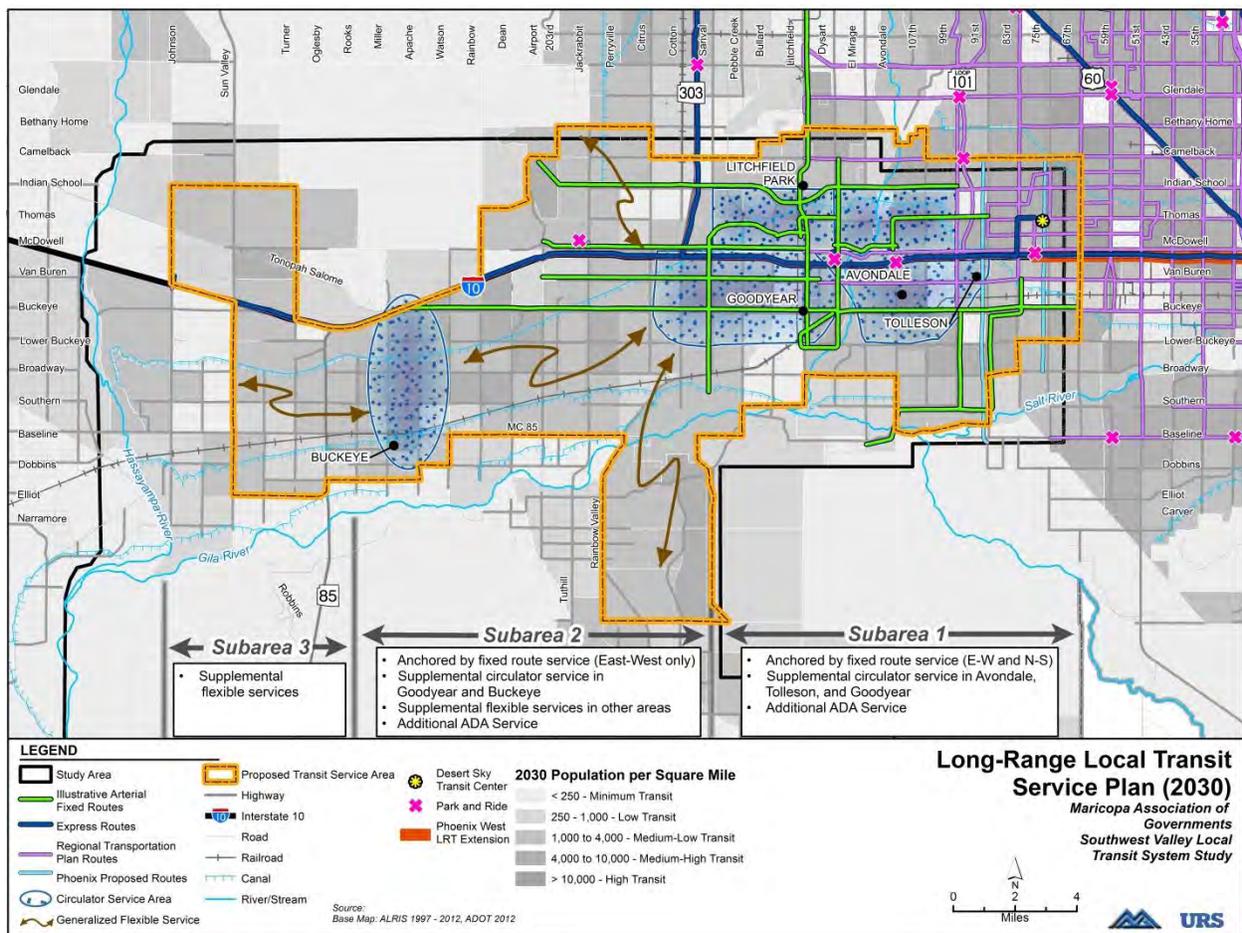
Over the long-term, the service plan illustrated in Figure 17 would be built out, contingent on funding and the realization of the projected pace of development. The implementation steps are focused on expansion of more services into Subarea 2 and continual refinements to service to meet or exceed transit service performance goals.

4.3.1 Additional Transit Service

12. Extension of arterial grid service. Over the long-term time frame, Subarea 2 is projected to be more supportive of a productive transit system. Fixed route arterial service is shown on Figure 17 as a set of illustrative routes. These routes represent the most productive routes based on the model output analysis as well as refinements to connect local activity centers and support local land use goals. However, these illustrative routes are conceptual and flexible to respond to evolving conditions over time. Based on current information, these fixed route concepts are expected to be the most productive in the Southwest Valley, however transit network operations would be expected to be refined over time as needed to respond to local conditions.

13. Improve service frequencies. It is anticipated that the arterial local routes would have at last 30 minute all day frequency. Some of the routes may be able to support 15 minute service during the peak period or other times by 2030. The planning level cost estimate assumes 30 minute weekday frequency. A 15 minute peak period frequency would increase the route operating cost approximately 30% and require additional vehicles.

Figure 17 Long-Term Local Transit Service Plan (2030)



14. Identify opportunities for flex service along arterial system. Similar to #10 described above, flex service is a tool that may be used to more cost effectively cover larger service areas when lower densities or more isolated activity centers may be viable transit destinations but unproductive to service through a traditional type of arterial bus service.

4.3.2 Overall Performance of Long Range Plan

Overall, the long range plan illustrated in Figure 17 would add about 210 two-way route miles of arterial fixed route service, and nearly 8,000 weekday revenue miles of transit to the service area in the Southwest Valley. By 2030, it is projected that the new service would add between 11,000 and 12,000 new weekday boardings to the arterial grid system. The new arterial services would be expected to produce at least 1.4 to 1.5 boardings per revenue mile on the new route segments. The blended productivity combining the new services with the RTP portions of the affected routes would be higher. This would be considered reasonably productive for communities on the edge of the metropolitan area



as the farebox recovery would exceed 20%. The current average productivity for local transit in the region is 2.2 boardings per revenue mile on weekdays. A number of routes in the current regional system have productivity under 2.0 boardings per revenue mile either for the entire route or for route segments in suburban communities.

A “transit index” was calculated to compare the quantity of per capita weekday local arterial fixed route transit service in the RTP with the per capita quantity in the Southwest Valley service area after the new local routes are implemented. Across the region, the per capita value in 2030 (assuming implementation of arterial fixed route service in the RTP) is about 0.018 revenue miles per capita. The long term illustrative transit system for the Southwest Valley shown in Figure 17 (including portions of the RTP routes in the service area) results in about 0.016 revenue miles per-capita. This broad comparison suggests that the level of arterial fixed route transit service in the long term scenario is reasonably consistent with the overall region.

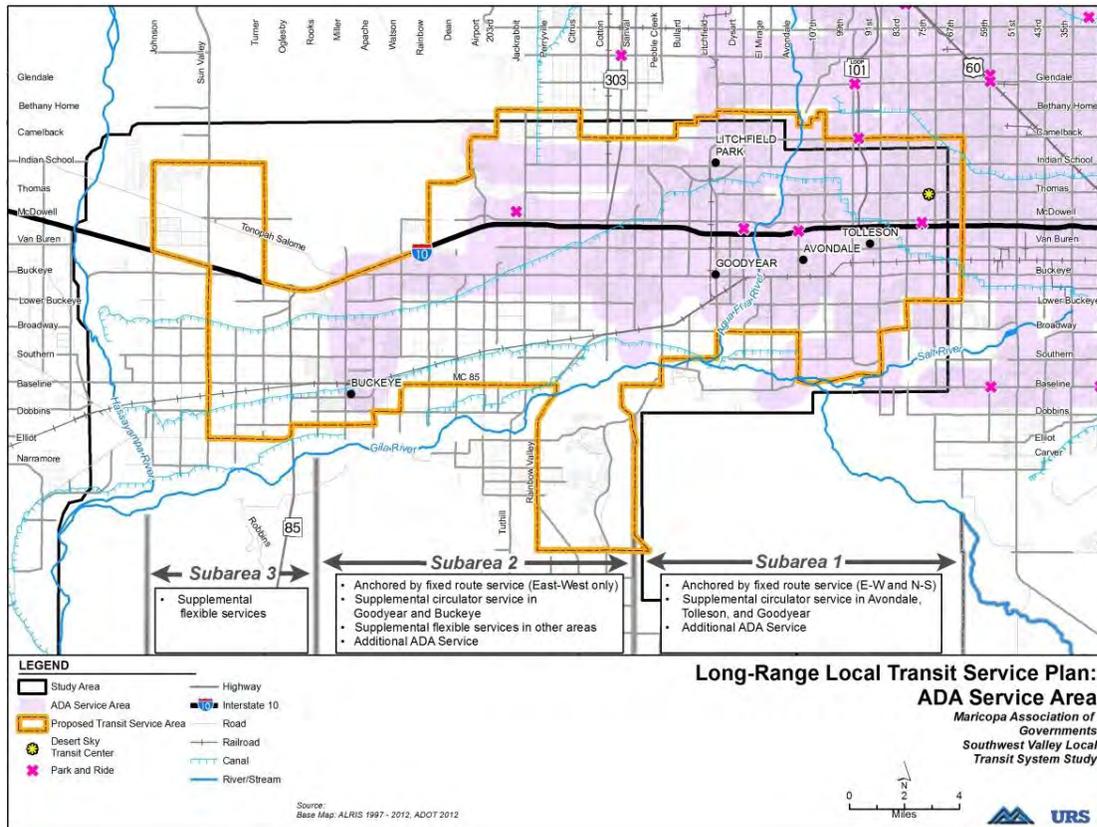
Circulators could add 155 two-way route miles in 2030 and 4,600 weekday revenue miles. Nearly 2,800 daily boardings could be expected, using the ZOOM’s current productivity to estimate future ridership. Fares and farebox recovery are typically much lower on circulators compared to arterial local routes. The relationship between circulators and arterial fixed routes for the Southwest Valley shows a much higher percentage of circulator revenue miles per capita than the region as a whole in 2030. These characteristics fit with the stakeholder desire to have a more “community focused” transit system.

Flexible services would add a few hundred daily boardings in 2030. No estimate has been made for additional ADA riders in the future.

4.4 ADA Accessible Service

By law under the American with Disabilities Act (ADA), ADA-accessible service must be provided within $\frac{3}{4}$ mile of fixed route transit service. Figure 18 illustrates the area subject to ADA coverage over the long range timeframe. This boundary could vary depending on actual routes that are in service, including circulator routes. Related costs are factored into the cost estimate (see Section 5.4).

Figure 18 Potential ADA Service Area



4.5 Summary of Recommendations and Implementation Strategies

There are five recommended guiding principles for implementing the long range plan:

1. Cities and towns should pursue circulator service independently (or in partnership) while continuing overall coordination with other communities in the service area to promote connectivity among service types. This will simplify the funding strategy and not unnecessarily complicate neighborhood-level service delivery.
2. Communities in the Southwest Valley service area should collaborate to pursue funding the expansion of the arterial grid bus system.
3. Communities should purchase service from an existing operator (e.g., Valley Metro or the City of Phoenix) to minimize risk and leverage their expertise.
4. The transit operator and participating jurisdictions should build periodic reassessments into the implementation plan to consider the pace of growth, changes in travel patterns or demands, and funding requirements or priorities. RPTA produces annual transit performance reports and regularly adjusts routes to optimize performance.
5. ADA service will be maintained within $\frac{3}{4}$ mile of fixed route service, as required by law.

Table 13 summarizes the illustrative expansion of the local transit system in the Southwest Valley service area. In accordance with the travel pattern analysis (Figure 10 and Figure 11), the initial



recommendations are focused in the northeast section of the study area. These recommendations speak to realizing short-term efficiencies, circulator service implementation and expansion, and establishing an institutional foundation for transit-supportive policies and long-term community partnership for transit service.

During the mid-term horizon, as growth is expected to occur farther west, local funding strategies that were initiated previously, as part of the short-term recommendations, will drive the expansion of the East-West arterial routes as well as refinements or expansion of circulator services. It is expected that the focus for implementation is still subarea 1, although reassessment of demographic and travel patterns should occur to determine the optimal routes to meet local needs. With bus service, route modifications may be tested and adjusted to obtain the most productive service levels in an area. Typically, bus routes are modified several times a year as needed. As part of these types of refinements, flexible/adaptive service may be utilized including special peak period routing or demand-responsive services.

Over the long-term, service would expand into Subarea 2 and refinements to improve service frequencies and offer flexible/adaptive services to best meet demand will be funded through initiatives set forth in the short-term recommendations. These recommendations are supported by the detailed travel pattern analysis conducted in Working Paper 4 and illustrated in Figure 10 and Figure 11 which shows total daily and work related trips shifting to the central and western portions of the study area. Based on available data, Subarea 3 is not expected to support a major transit investment but would be connected to regional and other local services through flex services and arterial grid connections.

Table 13 Summary: Illustrative Expansion of the Local Transit System

	Current Status in Service Area	Short-Term	Mid-Term (By 2020)	Long-Term (2030)
Governance Actions	N/A	<ul style="list-style-type: none"> Local implementation of circulators Establish subarea coordination to plan and finance expansion of arterial grid bus system Link transit and land use in decision-making 	<ul style="list-style-type: none"> Implement subarea strategy for expansion of arterial grid bus system 	<ul style="list-style-type: none"> Complete and optimize transit plan for the service area
East-West Arterial Routes				
McDowell Road (17)	60 min service to Litchfield	30 min service to Litchfield ²	30 min service to Litchfield	30 min service to Airport Rd/Verrado Way
Van Buren (3)	60 min service to Dysart	30 min service to Litchfield ²	30 min service to Litchfield	30 min service to Airport Rd/Verrado Way
Thomas Road (29)	60 min service to 91 st Ave	No change Serve area with circulators west of 91 st Ave	60 min service to Litchfield ¹ (Match connecting service)	30 min to Sarival
Indian School Road (41)	60 min service to 107 th Ave	No change Serve area with circulators	60 min service to Litchfield ¹ (Match connecting service)	30 min service to Verrado Way
Buckeye Road (13)	30 min service to 75 th Ave	No change Serve area with circulators	30 min service to Litchfield Flex route service to Buckeye	30 min service to Miller Rd
North-South Arterial Routes				
75 th Avenue	No service	No service	Phoenix proposed route south to Broadway	Phoenix proposed route south to Broadway
83 rd Ave/Southern	No service	No service	No service	30 min service connecting to RTP route and south to Baseline
91 st Avenue	No service	No service	Phoenix proposed route on 91 st Ave south to Baseline	Phoenix proposed route on 91 st Ave south to Baseline
99 th Avenue/Southern	No service	No service	No service	30 min service connecting to RTP route and south to Baseline
Litchfield Road (139)	No service	No service Serve area with circulators	30 min service north from Lower Buckeye	30 min service north from Lower Buckeye
Dysart Road (131)	No service	No service Serve area with circulators	30 min service north from Lower Buckeye	30 min service north from Lower Buckeye
Circulators				
ZOOM – Avondale, Tolleson	30 min service on route.	Expand service coverage (potentially with new loop to north)	Modify route(s) or service to respond to conditions.	Modify route(s) or service to respond to conditions.
Goodyear	No service	Implement recommended pilot route as two-way loop.	Implement/improve circulator service: western extension and/or north loop.	Modify route(s) or service to respond to conditions.
Buckeye	No service	Design pilot route.	Implement pilot route.	Expand/modify route to respond to conditions.
Flex Services	None	None	1 route – Goodyear to Buckeye	4 routes TBD based on future conditions
ADA Services	Existing per requirements.	Expand to cover Goodyear circulator pilot route.	Expand per changes in local and circulators (extend to Buckeye).	Expand per local and circulators.

NOTES

1 60 minute service is noted for these routes because the connecting service is estimated to operate every 60 minutes. 30 minute headway is the desired service level.

2 Potential for McDowell and Van Buren routes to be interlined.



Page Left Intentionally Blank

5.0 ESTIMATED COSTS

This section identifies the cost elements necessary to support the successful implementation of a Southwest Valley local transit system. These elements include capital costs (mostly buses but some supporting facility elements), and the operating and maintenance costs (O/M) associated with transit services. Detailed information on the assumptions for the capital and operating costs is presented in *Technical Memorandum #5: Operating and Capital Cost Estimates*. Technical Memorandum #5 provided a base for the cost analysis. Refinements were made to those assumptions and were developed into the final recommendations presented as part of this plan.

The costs presented here are for the three “phase” years 2015 (short-term), 2020 (mid-term), and 2030 (long-term) as described in the previous section. A summary at the end provides an overview of all costs by year between 2015 and 2030. All costs are in 2012 dollars. Costs are “added” costs required above and beyond either existing costs (for 2015 and 2020) or above RTP costs (for 2030). Estimated farebox revenue is also shown to determine the net O/M cost that must be supported. The gross O/M costs (before fare revenue) range from about \$5 million in 2015 to nearly \$27 million in 2030. (Farebox revenue was calculated at 15% of O/M costs for arterial fixed routes, and 5% of O/M costs for the other service types.) Capital costs, mostly for buses, range from about \$3 million in 2015 to \$18 million in 2030. Operating costs remain constant in each year between “phases”. Capital costs vary by year and are zero in some years. Replacement vehicle costs are also shown for interim years in the summary at the end of this this section. These cost results are used to determine the financial feasibility in the next section.

5.1 Year 2015 – Short-Term

Table 14 shows the costs for the year 2015 short-term “added” transit beyond existing services, although the ZOOM Circulator is treated as an “added” cost for this analysis. Gross O/M costs (i.e., without crediting farebox revenues) are estimated at \$4.9 million and are mostly for circulator services, which are the principal focus for the short-term transit plan. A modest cost is shown for the arterial fixed route local transit service enhancement as described in the previous section. This value reflects a credit for additional funding in Avondale that is slated to begin in 2016 per the TLCP. The net O/M cost after farebox revenue is shown as \$4.6 million.

Capital costs for 2015 total \$3.3 million and are entirely for buses. Twenty-four buses are needed for the additional 2015 services, nearly all of which are “cutaways” for Circulators and ADA Service. Seven of these cutaways are assumed to be replacement vehicles for the existing ZOOM Circulator service.

5.2 Year 2020 – Mid-Term

Table 15 summarizes the costs for the year 2020 increase in transit service. It shows a total gross O/M cost of \$13.5 million. Approximately half the O/M costs are for the Circulators followed by extended services for arterial fixed routes. Net O/M costs after farebox revenue total \$12.3 million.

Capital costs total \$12.4 million to cover additional buses, a contribution to bus facilities, and for new stops infrastructure for the arterial route extensions. These new buses supplement the buses purchased in 2015 which are still in service in 2020.

5.3 Year 2030 – Long-Term

Table 16 shows the costs for the long-term service plan in 2030. These costs are above the RTP services and infrastructure. Gross O/M costs total nearly \$27 million. Over half of the O/M costs are for the arterial fixed route services with circulators accounting for 25%. Net O/M costs after farebox revenue is about \$24 million. Capital costs are \$18 million and are mostly for standard transit buses for the arterial fixed routes. Buses purchased and replaced in earlier years are also in service in 2030.

5.4 Cost Summary

Table 17 summarizes the costs over the life of this transit plan from 2015 to 2030. The “plan” years 2015, 2020, and 2030 are shown as described above. The interim years show only O/M costs in years when bus replacement purchases were not required. The years 2022, 2027, and 2029 also show additional capital costs for bus replacements with cutaway vehicles needed in all three of those years and standard transit buses first replaced in 2027.

These costs do not include an allowance for future transit centers. Transit centers provide a focal point in major activity centers where local transit services can come together in an environment that improves the customer experience for boarding, alighting, and transfers. Three potential transit centers have been discussed for the SWV but not studied in this effort. These three transit centers are estimated to cost at least \$3 million each for a total of \$9 million. Actual costs may vary widely depending on property acquisition and the type of facility or amenities that are planned.



Table 14 Cost Summary – 2015

Row	Service Type	Ops - 2012 \$ \$/M	Capital Costs – 2012 \$				Total for Year	New Buses	Remarks
			\$ Vehicles	Bus Facilities	New Stops	Subtotal			
1	Arterial Local	\$585,364	\$1,710,000	\$-	\$-	\$1,710,000	\$2,295,364	3	O/M net of new TLCP \$; 3 vehicles w/o facility allowance.
2	Circulator	\$3,774,710	\$1,472,500	\$-	\$-	\$1,472,500	\$5,247,210	19	19 buses; 7 are replacements for ZOOM
2a	Avondale* - ZOOM	\$1,561,570	\$542,500					7	Replace existing ZOOM buses.
2b	Avondale - North Allowance	\$1,224,720	\$465,000					6	New buses; no additional spares.
2c	Goodyear Pilot	\$988,420	\$465,000					6	New buses (2 spares)
2d	Buckeye Pilot	\$-	\$-					0	Service starts 2020.
3	Flex Services	\$-	\$-	\$-		\$-	\$-		
4	ADA	\$523,209	\$155,000	\$-		\$155,000	\$678,209	2	New buses - no additional spares
5	Total	\$4,883,283	\$3,337,500	\$-	\$-	\$3,337,500	\$8,220,783	24	
5a	Farebox Revenue	\$302,701							
6	Net O/M Cost	\$4,580,582							

*Tolleson partners with Avondale on the ZOOM.

Note 1: Cost methodology in Technical Memorandum #5.

Note 2: The recommended circulators are defined by major geographic area and the communities leading those efforts. Should smaller communities such as Tolleson, Litchfield Park, and areas of Unincorporated Maricopa County want future circulator service, they can contract with planned services identified in Avondale, Goodyear, or Buckeye.



Table 15 Cost Summary – 2020

Row	Service Type	Ops - 2012 \$ \$/M	Capital Costs – 2012 \$				Total for Year	New Buses	Remarks
			\$ Vehicles	Bus Facilities	New Stops	Subtotal			
1	Arterial Local	\$4,903,964	\$9,120,000	\$1,600,000	\$386,400	\$11,106,400	\$16,010,364	16	New buses + facility contribution + new stops
2	Circulator	\$6,874,991	\$930,000	\$-		\$930,000	\$7,804,991	12	New buses
2a	Avondale - ZOOM	\$1,831,525						0	Replaced in 2015; replace again in 2022
2b	Avondale - North Allowance	\$1,244,250	\$-					0	New in 2015; replace in 2022
2c	Goodyear Pilot + West	\$1,548,800	\$465,000					6	Total needed = 12; 6 purchased in 2015.
2d	Goodyear North Allowance	\$1,200,650	\$-						
2e	Buckeye Pilot	\$1,049,766	\$465,000					6	New buses (2 spares)
3	Flex Services	\$271,800	\$155,000	\$-		\$155,000	\$426,800	2	1 in service + 1 spare
4	ADA	\$1,413,475	\$232,500	\$-		\$232,500	\$1,645,975	3	Need 5 but 2 purchased in 2015
5	Total	\$13,464,230	\$10,437,500	\$1,600,000	\$386,400	12,423,900	\$25,888,130	33	
5a	Farebox Revenue	\$1,163,608							
6	Net O/M Cost	\$12,300,622							

Note 1: Cost methodology in Technical Memorandum #5.

Note 2: The recommended circulators are defined by major geographic area and the communities leading those efforts. Should smaller communities such as Tolleson, Litchfield Park, and areas of Unincorporated Maricopa County want future circulator service, they can contract with planned services identified in Avondale, Goodyear, or Buckeye.



Table 16 Cost Summary – 2030

Row	Service Type	Ops - 2012 \$ \$/M	Capital Costs – 2012 \$				Total for Year	New Buses	Remarks
			\$ Vehicles	Bus Facilities	New Stops	Subtotal			
1	Arterial Local	\$15,546,960	\$14,250,000	\$2,500,000	\$625,600	\$17,375,600	\$32,922,560	25	Need 44 buses but 19 bought or replaced previously.
2	Circulator	\$7,399,874	\$155,000	\$-		\$155,000	\$7,554,874	2	
3	Avondale - ZOOM	\$1,831,525	\$-						All buses replaced in 2022 & 2029.
4	Avondale - North Allowance	\$1,244,250	\$-						
6	Goodyear Pilot + West	\$1,548,800	\$-						All buses replaced in 2022 & 2029.
7	Goodyear North Allowance	\$1,200,650	\$-						
9	Buckeye Pilot	\$1,049,766	\$-					0	All buses replaced in 2027
10	Buckeye Expansion Allowance	\$524,883	\$155,000					2	In service only; no additional spares.
12	Flex Services	\$1,087,200	\$310,000	\$-		\$310,000	\$1,397,200	4	Need 6 but 2 previously purchased
13	ADA	\$2,753,620	\$465,000	\$-		\$465,000	\$3,218,620	6	Need 11 but 5 previous purchased/replaced
14	Total	\$26,787,654	\$15,180,000	\$2,500,000	\$625,600	\$18,305,600	\$45,093,254	37	
15	Farebox Revenue	\$2,894,079							
16	Net O/M Costs	\$23,893,575							

Note 1: Cost methodology in Technical Memorandum #5.

Note 2: The recommended circulators are defined by major geographic area and the communities leading those efforts. Should smaller communities such as Tolleson, Litchfield Park, and areas of Unincorporated Maricopa County want future circulator service, they can contract with planned services identified in Avondale, Goodyear, or Buckeye.



Table 17 Summary of Costs by Year – 2015 to 2030

Row	Item	Costs by Year - 2012 \$										15 Year Total	
		2015	2016-2019*	2020	2021	2022	2023-2026*	2027	2028	2029	2030		
OPERATING & MAINTENANCE COSTS													
1	Arterial Local	\$585,364	\$585,364	\$4,903,964	\$4,903,964	\$4,903,964	\$4,903,964	\$4,903,964	\$4,903,964	\$4,903,964	\$4,903,964	\$15,546,960	\$67,513,420
2	Circulators	\$3,774,710	\$3,774,710	\$6,874,991	\$6,874,991	\$6,874,991	\$6,874,991	\$6,874,991	\$6,874,991	\$6,874,991	\$6,874,991	\$7,399,874	\$95,023,334
2a	Avondale ZOOM	\$1,561,570	\$1,561,570	\$1,831,525	\$1,831,525	\$1,831,525	\$1,831,525	\$1,831,525	\$1,831,525	\$1,831,525	\$1,831,525	\$1,831,525	\$27,954,625
2b	Avondale North	\$1,224,720	\$1,224,720	\$1,244,250	\$1,244,250	\$1,244,250	\$1,244,250	\$1,244,250	\$1,244,250	\$1,244,250	\$1,244,250	\$1,244,250	\$19,810,350
2c	Goodyear Pilot	\$988,420	\$988,420	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$4,942,100
2d	Goodyear Pilot + West	\$-	\$-	\$1,548,800	\$1,548,800	\$1,548,800	\$1,548,800	\$1,548,800	\$1,548,800	\$1,548,800	\$1,548,800	\$1,548,800	\$17,036,800
2e	Goodyear North	\$-	\$-	\$1,200,650	\$1,200,650	\$1,200,650	\$1,200,650	\$1,200,650	\$1,200,650	\$1,200,650	\$1,200,650	\$1,200,650	\$13,207,150
2f	Buckeye Pilot	\$-	\$-	\$1,049,766	\$1,049,766	\$1,049,766	\$1,049,766	\$1,049,766	\$1,049,766	\$1,049,766	\$1,049,766	\$1,049,766	\$11,547,426
2g	Buckeye Expansion	\$-	\$-									\$524,883	\$524,883
3	Flex services	\$-	\$-	\$271,800	\$271,800	\$271,800	\$271,800	\$271,800	\$271,800	\$271,800	\$271,800	\$1,087,200	\$3,805,200
4	ADA services	\$523,209	\$523,209	\$1,413,475	\$1,413,475	\$1,413,475	\$1,413,475	\$1,413,475	\$1,413,475	\$1,413,475	\$1,413,475	\$2,753,620	\$16,888,370
5	Total all O/M costs	\$4,883,283	\$4,883,283	\$13,464,230	\$26,787,654	\$185,846,369							
5a	Farebox Revenue	\$302,701	\$302,701	\$1,163,608	\$1,163,608	\$1,163,608	\$1,163,608	\$1,163,608	\$1,163,608	\$1,163,608	\$1,163,608	\$2,894,079	\$16,043,664
6	Net O/M Costs	\$4,580,582	\$4,580,582	\$12,300,622	\$23,893,575	\$169,802,705							
CAPITAL COSTS													
7	Arterial buses	\$1,710,000	\$-	\$9,120,000		\$-		\$1,710,000		\$-	\$14,250,000	\$26,790,000	
8	Arterial bus facilities	\$-	\$-	\$1,600,000							\$2,500,000	\$4,100,000	
9	New stops	\$-	\$-	\$386,400							\$625,600	\$1,012,000	
10	Circulator buses	\$1,472,500	\$-	\$930,000		\$1,472,500		\$930,000		\$1,472,500	\$155,000	\$6,432,500	
11	Flex Buses	\$-	\$-	\$155,000		\$-		\$155,000		\$-	\$310,000	\$620,000	
12	ADA buses	\$155,000	\$-	\$232,500		\$155,000		\$232,500		\$155,000	\$465,000	\$1,395,000	
13	Total capital	\$3,337,500	\$-	\$12,423,900		\$1,627,500		\$3,027,500		\$1,627,500	\$18,305,600	\$40,349,500	
GRAND TOTAL GROSS O/M + CAPITAL		\$8,220,783	\$4,883,283	\$25,888,130	\$13,464,230	\$15,091,730	\$13,464,230	\$16,491,730	\$13,464,230	\$15,091,730	\$45,093,254	\$226,195,869	
GRAND TOTAL NET O/M + CAPITAL		\$7,918,082	\$4,580,582	\$24,724,522	\$12,300,622	\$13,928,122	\$12,300,622	\$15,328,122	\$12,300,622	\$13,928,122	\$42,199,175	\$210,152,205	

Note:

Years 2022, 2027, 2029 vehicle replacements:

2022: 21 cutaways; 2027: 3 standard transit + 17 cutaways; 2029: 21 cutaways

*Cost provided in these columns represent the per year cost for the years within the identified timeframe.



6.0 FUNDING AND FINANCING STRATEGIES

The estimated costs provided in Section 5.0 cover all of the service types in the long range plan. A variety of federal, state, and local sources are available to assist with capital investments. The key financing strategy to consider is how to obtain dedicated, sustainable funds for operations. A sustainable source of operating funds is the limiting factor in implementing the local transit plan, since the initial capital investments would not be made otherwise. The primary suggestions for financing a major expansion of transit services include:

- Strategize a collaborative approach to expanding the arterial grid system and revenue generation for multi-jurisdictional investments that may entail a transportation sales tax.
- Pursue local funding opportunities for direct investment but also to leverage federal funds.

This section addresses federal funding opportunities that are currently available as well as data on what a sales tax might generate and how to balance the benefits with the costs among multiple jurisdictions. For additional information, refer to *Working Paper 5: Financial Analysis*.

6.1 Leveraging Federal Funds

MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law by President Obama on July 6, 2012. This new law authorizes \$10.6 billion in FY 2013 and \$10.7 billion in FY 2014 for public transportation nationwide.

The primary changes in federal funding opportunities for capital and operating assistance to the cities within the Southwest Valley are in the flexibility now offered under the 5307 Urban Transit Formula Assistance Program and the consolidation of the 5316 Job Access and Reverse Commute Program into the 5307 and 5311 formula funding programs. In addition, some changes to the Section 5309 Program, Fixed Guideway Capital Investment Grants, could affect the potential for grant funding for capital projects. It should be noted that a federal rulemaking process must be completed for some of these changes to be enacted.

This section summarizes several updated federal funding sources made available primarily through authorization from U.S. Congress by way of the Federal Transit Administration (FTA). These federal sources that may be applicable to the study area and their general requirements are discussed below.

6.1.1 Urban Transit Formula Assistance Program (Section 5307)

The Urban Area Formula Funding Program (49 U.S.C. 5307) is provided for bus transit capital and operating assistance to urbanized areas defined as “incorporated areas with a population of 50,000 or more” as designated by the Census Bureau. Total national funding under MAP-21 is \$4.9 billion in FY 2013 and \$5 billion in FY 2014.

The Goodyear-Avondale small urbanized area (UZA) includes portions of the study area. A small UZA is comprised of an urbanized area under 200,000 in population. The Goodyear-Avondale UZA is eligible for FTA funds independently of the Phoenix-Mesa urbanized area. The formula funding in this program is based on statistics for population, service, and productivity. New services would only receive the funding attributable to the community’s population. After two years of service, the service and productivity statistics would be available in the National Transit Database and would factor into the

formula funding amounts, potentially increasing funding availability. For FY 2013, \$2.77 million was apportioned for the Goodyear-Avondale small UZA. These funds will be available for programming for bus capital and operating costs, and a local match is required of 50% for operating costs and 20% for capital costs.

The 2010 Census population within the Goodyear-Avondale UZA is 197,041. It is anticipated that the population after the next census (2020) will exceed 200,000, which may result in the small UZA being agglomerated into the Phoenix-Mesa urbanized area funding formula. If this happens, all 5307 funds would be allocated to capital procurements and would be distributed through the designated recipient, the City of Phoenix. This would impact the Southwest Valley because it would have to compete with other communities in the region for federal funds, and operating costs would no longer be eligible for FTA funding within the larger urbanized area.

The Section 5316 Job Access and Reverse Commute (JARC) Program is now combined with both the urban (5307) and rural (5311) formula funding programs. The JARC Program was established to provide funding for capital, planning, and operating expenses for projects that support the transportation of low-income individuals to employment and activities related to employment and also to reverse commute. These projects are now eligible expenses under 5307.

6.1.2 Bus and Bus Facilities Program (Section 5339)

A new formula grant program for capital expenditures is established under Section 5339, replacing the previous Section 5309 discretionary Bus and Bus Facilities program. This capital program provides funding to replace, rehabilitate, and purchase buses and related equipment, and to construct bus-related facilities. Authorized funding is \$422 million in FY 2013 and \$428 million in FY 2014. Each year, \$65.5 million will be allocated with each state receiving \$1.25 million and each territory (including DC and Puerto Rico) receiving \$500,000. The remaining funding will be distributed by formula to both UZAs with populations over 200,000 and small UZAs (under 200,000) based on population, vehicle revenue miles and passenger miles. This program requires a 20% local match, and the funds are programmed through MAG.

6.1.3 Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310)

The Enhanced Mobility of Seniors and Individuals with Disabilities program consolidates the current 5310 and 5317, New Freedom program eligibilities into one single formula program. This program provides Federal funding to increase the mobility of seniors and individuals with disabilities. Funds are allocated to both states (provided to areas under 200,000 people, which includes the Goodyear-Avondale small UZA) and large UZAs (over 200,000 people). Under this new program, 55% of program funds must be used on capital projects planned and designed to meet the special needs of seniors and those with disabilities when public transportation is insufficient or unavailable. The remaining 45% may be used for public transportation projects that exceed the requirements of the ADA. Eligibility of these funds for operating expenses requires a 50% local match, and the use of these funds for capital expenses requires a 20% local match. These funds are programmed for communities within the Phoenix-Mesa UZA through MAG and the City of Phoenix, and programmed through ADOT for communities outside of the Phoenix-Mesa UZA.

6.1.4 Congestion Mitigation and Air Quality

Under the auspices of the FTA and the Environmental Protection Agency (EPA), the purpose of Congestion Mitigation and Air Quality (CMAQ) funds is to provide a flexible funding source for local



governmental agency transportation projects to meet the air quality standards set forth by the Clean Air Act. The CMAQ program is intended for use in areas that do not meet federally required air quality standards. The funding from this program can be used for service or system expansion, new transit service, operating assistance, new vehicles, and fare subsidies. Southwest Valley communities may pursue CMAQ funding. Eligible transit activities include costs associated with capital purchases to initiate local transit services including vehicles, transit centers, bus stop hardware, etc. In addition, a portion of new bus routes may be funded for up to three years with CMAQ funds.

6.2 State Funding Sources

This section provides a description of the State funding sources that could support the implementation of transit services throughout the Southwest Valley.

6.2.1 Surface Transportation Program Flexible Funds

On an annual basis, the State of Arizona Transportation Board authorizes \$6.5 million of Surface Transportation Program (STP) Flexible or “Flex” funding for transit projects throughout Arizona that meet specific qualifications, as required by the Federal government. MAG also allocated about \$34.1 million per year of STP funds through FY 2014, but these are currently allocated to the arterial and freeway programs. MAG has also committed approximately \$3 million annually for regional transportation planning and air quality studies. STP funding is generally used for capital costs, including vehicles and facilities with a match ratio. Existing transit programs that are already within an FTA program would be qualified for this source of capital funding. Southwest Valley communities could pursue a portion of this funding, as available, after establishing transit services.

6.2.2 Local Transportation Assistance Fund II Funding

For the past decade ADOT has distributed the Local Transportation Assistance Fund II (LTAF II) to provide transportation funding to qualified towns, cities, and counties. This funding source was repealed, but was reinstated in 2011 for Maricopa County. Arizona Revised Statutes requires that jurisdictions must use the funding for public transportation purposes only. For LTAF II funding within the MAG region, applications are reviewed on an annual basis by members of the Regional Public Transportation Authority.

Arizona Revised Statutes require Powerball lottery proceeds to support LTAF II distributions on an annual basis. Once Powerball revenue meets a threshold of \$31 million, proceeds above that amount spill over into LTAF II, up to a legislatively required capped amount of \$18 million. LTAF II is an uncertain or unstable funding stream because of its reliance on Powerball revenue, which can fluctuate significantly each year. Between 1999 and 2009, annual funding available varied between about \$5 and \$18 million. Beginning in September 2011 after the reinstatement of LTAF, \$16.2 million was available for cities and towns.

6.3 Regional and Local Government Funding Sources

Regional funds are primarily the portion of the Proposition 400 sales tax revenues that are allocated for transit (about 33% total between Bus and LRT) via the Public Transportation Fund (PTF), which are distributed to specific projects through the development of the Transit Life Cycle Program (TLCP). This sales tax will continue through 2025 unless extended. Local funding sources may include General Fund commitments, bond funds, sales tax revenues, or fare revenues. The following section is focused on

potential sales tax revenue, which is the best candidate for new funding sources to finance operating costs and to leverage federal funding opportunities.

6.4 Approach to a Local Sales Tax

The analysis of a potential local sales tax focused on (1) the potential amount of revenue that may be generated, and (2) addressing proportionality issues among the jurisdictions that may opt to fund future transit service. The expansion of the arterial fixed grid service is the best candidate for this type of financing approach, since it would require a collaborative effort among jurisdictions and is the largest cost component in the long range plan. Individual jurisdictions may elect to fund transit through an alternative type of tax, bond, or general fund commitment.

6.4.1 Potential Revenue Generation

This portion of the financial analysis evaluates the amount of local funding that could result from a sales tax (transactions privilege tax) for transit in the participating communities. Under a possible scenario, this tax would only be levied on the five jurisdictions that are substantially located within the proposed 2030 service area including Avondale, Buckeye, Goodyear, Litchfield Park, and Tolleson. The City of Phoenix was excluded from a potential sales tax because the City already maintains a transit tax and could opt to allocate funds to opportunities as it sees fit. In addition, a city-wide tax would be inappropriate in Phoenix since only a small portion of the City is included in the service area. Unincorporated portions of Maricopa County were considered to the extent they are included within municipal planning areas (MPAs) associated with each jurisdiction. Unincorporated Maricopa County comprises a substantial portion of the study area but these areas are scattered throughout the area and not necessarily contiguous. It is reasonable to assume that areas within MPAs may be subject to annexation by 2030 and thus would be subject to a sales tax. This approach also solves the issue of how to account for funding part of the system that is in currently unincorporated areas.

Taxable sales in the five MPAs combined are projected to increase from about \$3.7 billion in 2010, to \$9.3 billion in 2020, and \$16.2 billion by 2030. However, some of the MPAs will not be incorporated. At present, the incorporated areas comprise about 92% of the MPA areas. This is expected to increase slightly to 94% in 2020 and 96% in 2030, as nearly all of the new growth will be occurring in the current and future incorporated areas. By applying this adjustment factor and the 0.10% tax rate to the projections of taxable sales the projected annual local transportation revenue would be about \$8.7 million by 2020, and \$15.6 million by 2030. Given the extended timeline, and existing level of economic uncertainty, it would be appropriate to view these projections as a range with a margin of approximately 20%. This would imply annual local transportation revenue in 2030 of between \$12.5 million and \$18.7 million, respectively.

Local funding is required to contribute to the net operating subsidy for expanded transit service and to leverage federal funding opportunities. This analysis is based on a 0.1% sales tax. The local funding could be fully covered by a uniform 0.2% sales tax within the communities in the service area, excluding the City of Phoenix because it already levies a transit tax.

Additional detail on this analysis is provided in *Working Paper 5: Financial Analysis*.



6.4.2 Proportionality

This portion of the revenue analysis evaluates the proportionality of revenue generation and the amount of benefit related to arterial fixed route services accruing to each jurisdiction. In terms of the benefit, two metrics were considered including share of long range (2030) service area, and total route miles by MPA. For this part of the analysis, only arterial fixed route service is addressed since it is the major cost item and also would be the primary reason for continued collaboration among the Southwest Valley jurisdictions. Circulators are not included in the discussion in this section, as it is assumed that individual jurisdiction(s) would pursue funding such services.

Table 18 shows a comparison of the two benefit metrics to 2030 sales tax generation by jurisdiction. The table reveals large differences between the share of each MPA in the 2030 service area and the number of route miles for arterial fixed route service in the illustrative route system on the long range plan. In particular, Buckeye represents just over 40% of the service area, but only gain 14.8% of the arterial route miles. While it would be desirable to use a metric such as service area that would not change over time, the disconnect between land area and the amount of service provided seems to indicate otherwise. The service area is simply too large, diverse, and rapidly changing for such an approach to provide an equitable distribution. The distribution of route miles was determined to be the best metric to use in this analysis and is more relatable to the distribution of the revenue that could generated by a 0.10% sales tax.

Table 18 Benefit and Revenue Comparison

MPA	Service Area		Route Miles		2030 Tax Revenue*	
	SQMI	Share	Miles	Share	Millions	Share
Avondale	26.09	10.8%	53.53	25.5%	\$3.04	19.6%
Buckeye	98.75	40.8%	31.16	14.8%	\$5.26	33.8%
Glendale	2.58	1.1%	0.72	0.3%	\$0.00	0.0%
Goodyear	73.51	30.4%	80.10	38.1%	\$6.20	39.9%
Litchfield Park	4.23	1.7%	8.11	3.9%	\$0.23	1.5%
Phoenix	30.64	12.7%	29.67	14.1%	\$0.00	0.0%
Tolleson	5.95	2.5%	6.89	3.3%	\$0.82	5.2%
TOTAL	241.75	100.0%	210.17	100.0%	\$15.55	100.0%

* Based on a 0.10% local transportation tax.

The comparison between route miles and potential 2030 tax revenue raises two issues. First, there is the need to incorporate some type of revenue figure for the City of Phoenix since it receives about 14% of arterial route miles from the new service. In addition, the investments that the City of Phoenix is making in the Desert Sky Mall Transit Center and light rail extensions to 79th Avenue would benefit from the strengthening of the supporting bus network in the Southwest Valley. The second continuing issue is the need to explore some alternative methods of equalizing the benefits and revenues (costs). Table 19 illustrates three possible methods for making the benefits and the costs proportional. These methods are general concepts to illustrate possible mechanisms for addressing this issue of proportionality; this topic warrants further investigation among communities that are interested in further collaboration.

Table 19 Potential Proportionality Adjustments

MPA	Method 1 Adjust Rate			Method 2 Equalization Funding @ \$15.5 Million				Method 3 Equalization Funding @ \$12.0 Million			
	Cost (M)	Share	Tax Rate	Tax Rev*	Adj.	Cost (M)	Share	Tax Rev*	Adj.	Cost (M)	Share
Avondale	\$3.96	25.5%	0.130%	\$3.04	(\$0.92)	\$3.96	25.5%	\$3.04	(\$0.01)	\$3.06	25.5%
Buckeye	\$2.31	14.8%	0.044%	\$5.26	\$2.96	\$2.31	14.8%	\$5.26	\$3.48	\$1.78	14.8%
Glendale	\$0.05	0.3%	na	\$0.00	(\$0.05)	\$0.05	0.3%	\$0.00	(\$0.04)	\$0.04	0.3%
Goodyear	\$5.93	38.1%	0.096%	\$6.20	\$0.28	\$5.93	38.1%	\$6.20	\$1.63	\$4.57	38.1%
Litchfield Park	\$0.60	3.9%	0.260%	\$0.23	(\$0.37)	\$0.60	3.9%	\$0.23	(\$0.23)	\$0.46	3.9%
Phoenix	\$2.19	14.1%	na	\$0.00	(\$2.19)	\$2.19	14.1%	\$0.00	(\$1.69)	\$1.69	14.1%
Tolleson	\$0.51	3.3%	0.062%	\$0.82	\$0.31	\$0.51	3.3%	\$0.82	\$0.42	\$0.39	3.3%
TOTAL	\$15.55	100.0%		\$15.55	\$0.00	\$15.55	100.0%	\$15.55	\$3.55	\$12.00	100.0%

* Based on a 0.10% local transportation tax.

The first method (shown under Adjust Rate) would have each jurisdiction pay its proportional share of the cost based on route miles using only revenues from a new transportation tax that would be dedicated to transit. This would imply a different tax rate in each jurisdiction, ranging from a high of 0.26% in Litchfield Park to a low of 0.04% in Buckeye. The implied rate in Goodyear and Tolleson would be below the 0.10% basis, while Avondale would be slightly above at about 0.130%. This method would have the City of Phoenix contributing about \$2.3 million per year by 2030 from existing funding sources, in lieu of implementing a new transportation tax.

The second method (shown under Equalization Funding @ \$15.5 million) would implement the same tax rate in all of the jurisdictions, and then establish a funding formula whereby the participants adjust their contributions to be proportional with the benefits. This approach would assume a more generalized transportation tax since some communities would generate revenues beyond their transit contribution. The total amount of money to be raised for transit funding under this method would be \$15.5 million, the same as in the first method. In the case of the City of Avondale, this would imply contributing nearly \$1 million per year (in 2030) beyond the amount expected to result from the 0.10% tax. On the flip side, the Town of Buckeye would get to keep almost \$3 million per year in local transportation tax revenues to use for other transportation/transit projects. This method would also help to adjust for the fact that the projected growth in Buckeye is much greater than the other jurisdictions, and therefore much more subject to change. Buckeye’s “required” contribution could be generated by the 0.10% tax rate with less than half of the growth that is projected.

The third method is the same as the second one, except the total amount of money to be raised for transit funding under this effort would be reduced to \$12.0 million per year. This lowers the additional amount the City of Avondale would need to pay (over and above the new tax revenues) from \$1 million per year to about \$100,000 per year. Litchfield Park’s net deficit would also be reduced. Under this method, both Buckeye and Goodyear would be left with significant amounts of tax revenues to pursue other transportation/transit improvements.

A sales tax is one method for financing service but individual communities may opt to pursue other types of taxes, use an existing tax for capital improvements, or pursue other budget commitments.



7.0 CONCLUSIONS

The Southwest Valley is expected to continue to experience population and employment growth. The analysis of potential future transit potential suggests that local transit use may be productive if bus service is provided at a reasonable level of service (at least 30 minute headway). This plan lays out a future service area to delineate areas that are potentially transit-supportive, recommended service types, and an illustrative route system that corresponds to future land use and projected population levels. The expansion of transit as illustrated in this Plan would serve to connect all the communities within the service area with at least one type of service.

It is recommended that cities and towns pursue circulator services independently (or in partnership) while continuing overall coordination with other communities in the service area to promote connectivity among service types. This will simplify the funding strategy and not unnecessarily complicate neighborhood-level service delivery of circulator services. However, communities in the Southwest Valley service area would benefit from collaboration to pursue funding the expansion of the arterial grid bus system and to promote reasonable continuity of service across jurisdictional boundaries.

A variety of federal, state, and local sources are available to assist with capital investments. The primary financing requirement to consider is how to obtain dedicated, sustainable funds for operations. A sustainable source of operating funds is the limiting factor in implementing the local transit plan, since the initial capital investments would not be made otherwise.

At this time, the Urban Area Formula Funding Program (Section 5307) and CMAQ (Congestion Mitigation and Air Quality) are key potential sources of federal funds for building and operating local transit. These funds are allocated through MAG and require a local match. Regional funds from the sales tax approved under Proposition 400 are allocated through the Transit Life Cycle Program (TLCP). In addition, the Southwest Valley communities may look toward future regional initiatives to extend sales tax revenues for transportation beyond the life of the current tax for projects that are outside the scope of the current Regional Transportation Plan.

To generate and leverage additional funds for transit, communities may opt to make local funding commitments out of the general budget or an existing tax revenue stream. Given the expenditures required to expand the arterial grid system, communities could opt to pursue a local sales tax. Section 6.0 of this report investigates this possibility in more detail, and concludes that a local sales tax of between 0.1% and 0.2% sales tax would generate adequate revenues to pursue the illustrative system laid out as part of the recommendations.

8.0 REFERENCES AND LITERATURE CITED

Maricopa Association of Governments (MAG). 2010. *MAG Regional Transportation Plan 2010 Update*. July 2010.

United States Census Bureau. 2011. *2010 Census: American Fact Finder*. Available at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml> (accessed December 2011).

United States Census Bureau. 2011b. *2006-2010 American Community Survey 5 Year Estimates*. Available at <http://www.census.gov/acs/www/> (accessed December 2011).

Valley Metro. 2012. *Transit Performance Report FY 2011 (July 1, 2010 – June 30, 2011)*. (January) and *Annual Ridership Report FY 2011-2012*.

_____. 2011. *Project Assessment Reports*. 2011.

DATA USED IN ANALYSIS AND GIS MAPPING:

Arizona Department of Transportation (ADOT). 2012, Shapefile for Highways.

Arizona State Land Department. 2010, Shapefile for Jurisdictional Boundaries.

Bureau of Land Management. 2009. Shapefile for Wilderness areas.

Maricopa Association of Governments (MAG). 2012. Shapefiles for Existing Transit Routes. Shapefiles and data for Population and Employment Projections by TAZ for 2010, 2020, 2030 [Generated in 2007].

_____. 2011. Shapefiles and data for Future/Planned Transit Routes (Regional Transportation Plan), Transit Centers, Existing/Planned Park and Rides, and Land Use [Generated in 2009].

Maricopa County. 2010. Shapefiles for Canals and Roads.



Page Left Intentionally Blank