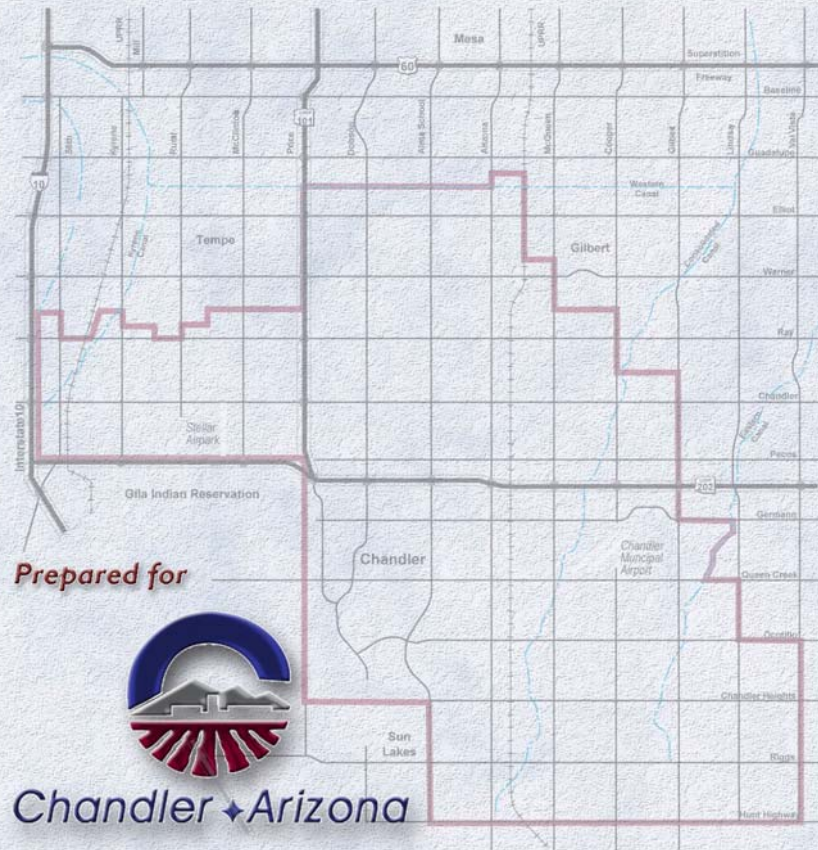


# City of Chandler TRANSPORTATION MASTER PLAN UPDATE

## Final Report

April 2010



Prepared for



Chandler ♦ Arizona

Prepared by







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# VISION STATEMENT

**Develop an environmentally-friendly, multimodal transportation system that provides choices to make Chandler known as the “Most Connected City.”**



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## SECTION 1.0 INTRODUCTION

### Background

Substantial growth has occurred in Chandler since the completion of previous studies. This updated Chandler Transportation Plan was prepared to reflect the City's growth and the corresponding existing and future transportation needs. The analysis on which it is based uses revised socio-economic and traffic forecasts.

### Executive Summary

Section 1.0 – Introduction: Provides a general description of the study process, an executive summary of the Final Report, and information on the study area.

Section 2.0 – Goals and Objectives: Lists City Council's Goals, Objectives and Policies and the Transportation Commission's Vision Statement, Goals and Objectives, and the City's Goals and Objectives of the Circulation Element of the General Plan Update.

Section 3.0 – Economic and Future Socio-Economic Conditions: Summarizes the data collected and projected that was used as the basis for the identification of problem factors on which the analysis of needs was based.

Section 4.0 – Roadway Plan: This section details the existing and future roadway conditions and uses this information to create recommendations for improving Chandler's arterial roadway system. It is recommended that the City accept higher levels of service in certain major activity center locations where additional roadway widening is either cost-prohibitive (Northern Chandler) or contrary to the type of development desired (downtown Chandler on Arizona Avenue). Where widening is not recommended (or possible), recommendations for improvements to transit service and/or bicycle and pedestrian improvements were developed. See Figure 1-2 for the recommended 2030 Roadway System.

**Roadway recommendations begin on Page 71.**

Section 5.0 – Transit Plan: This section details existing transit conditions and presents route-specific recommendations for the near-term (2010 – 2014), mid-term (2015 – 2019) and long-term (2020 – 2030). These recommendations include the creation of a circulator system, a continued commitment to Bus Rapid Transit and Express Bus services, long-term commitments to Light Rail service, as well as enhancements to local bus service and ADA and non-ADA Paratransit. See Figures 1-3, 1-4 and 1-5 for the Near-, Mid- and Long-Term Transit Recommendations.

**Transit recommendations begin on Page 116.**

Section 6.0 – Bicycle and Pedestrian Plan: This section details the existing characteristics of the City's bicycle and pedestrian policies and facilities. The focus of these recommendations is to make the City's bicycle and pedestrian facilities more user friendly to recreational users. Recommendations focus on non-arterial streets and



paths. In addition, this section identifies guidelines for pedestrian improvements based on safety, comfort and destination; both on and off street. Corridor and area focus recommendations are also presented that identify 11 corridors and specific recommendations for making them more bicycle and pedestrian friendly. See Figure 1-6 for the Recommended Bikeway and Pedestrian Improvements.

***Bicycle and Pedestrian recommendations begin on Page 145.***

## **Study Area**

This study examines the transportation conditions and needs within the Chandler Municipal Planning Areas (MPA), which includes the corporate limits of the City plus any adjacent areas that are anticipated to become a future part of its corporate limits. The Chandler MPA is bounded by the Gila River Indian Community on the south, the City of Phoenix on the west, the Cities of Tempe and Mesa on the north, and the Town of Gilbert on the east. The regional context of the Chandler MPA is shown on Figure 1-1.

## **Planning Process**

The process that was used in the preparation of the plan included a combination of technical research and analysis, coordination with City staff persons, recommendations of the Transportation Commission, and a series of public involvement activities.

The technical research included a review of existing plans, data collection and analysis of existing conditions, projection and analysis of future conditions, definition and evaluation of alternative transportation system improvements, and provisions for the implementation of the needed projects. Periodic briefings to the Transportation Commission include reports on study progress and incorporate guidance from the Commission into the technical evaluations and conclusions. The public involvement activities include newsletters, agency and stakeholder meetings, public open houses, and the use of the City website.



Figure 1-1: Regional Context and Chandler Planning Area

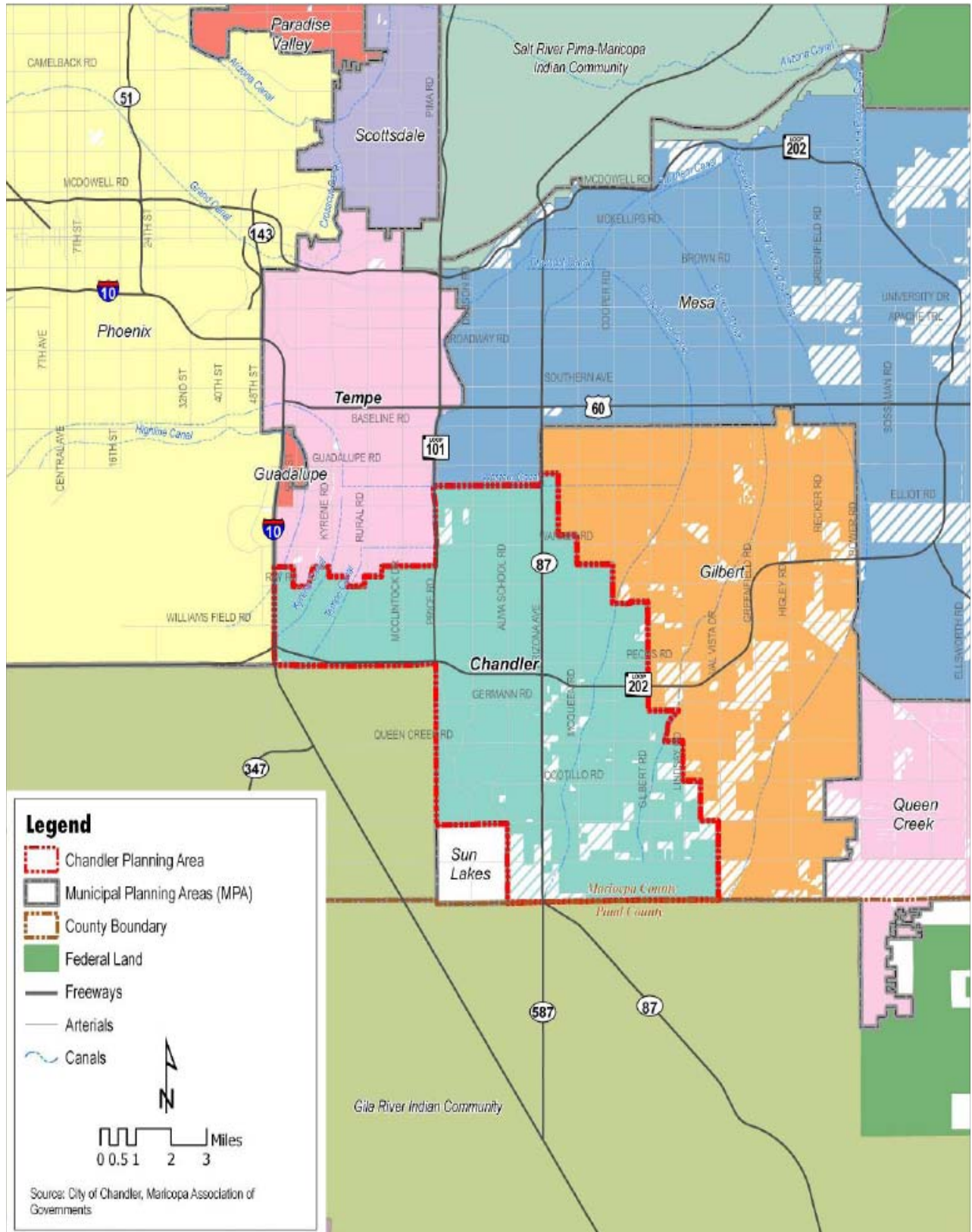




Figure 1-2: 2030 Roadway System

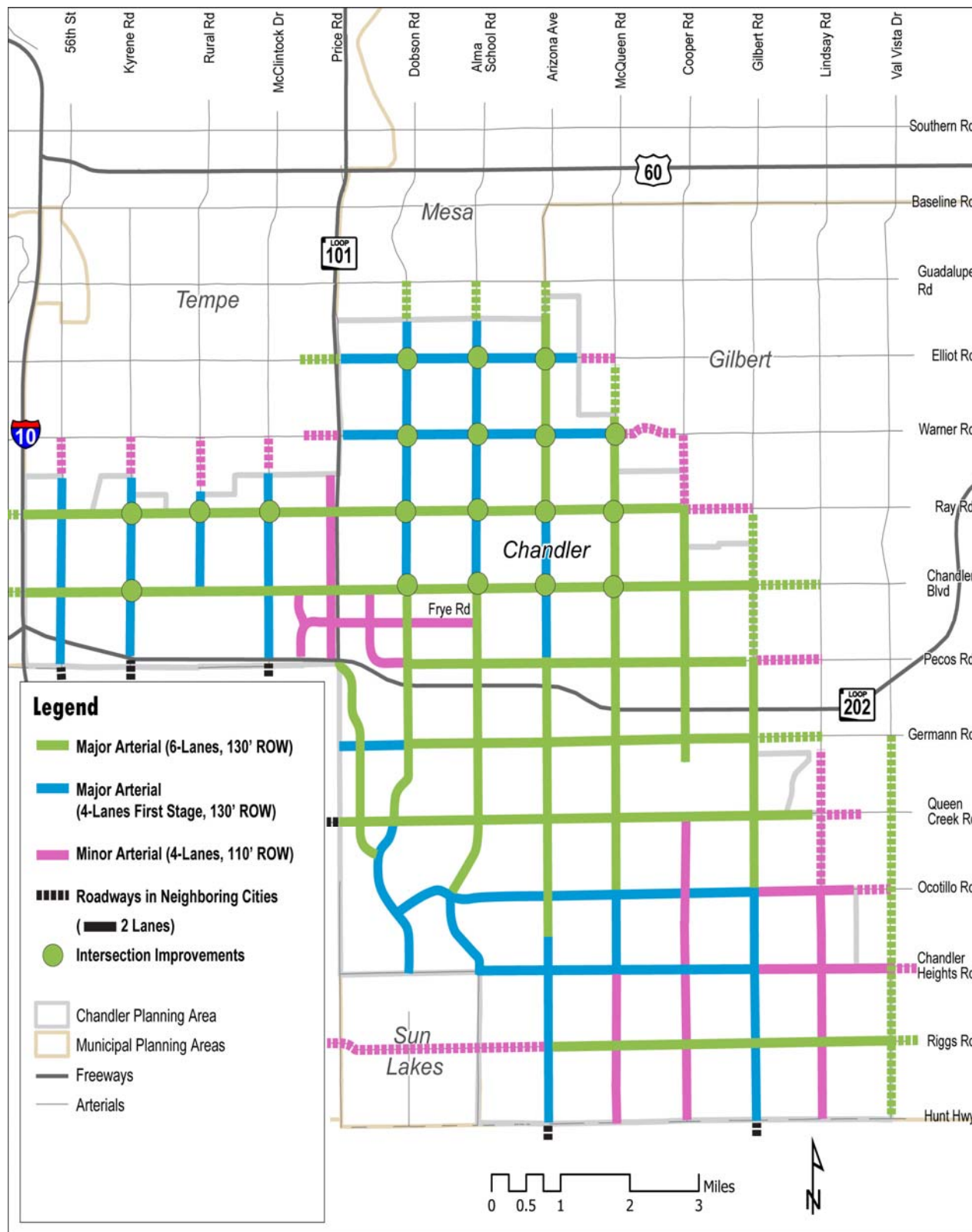






Figure 1-3: Near-Term Transit Improvements

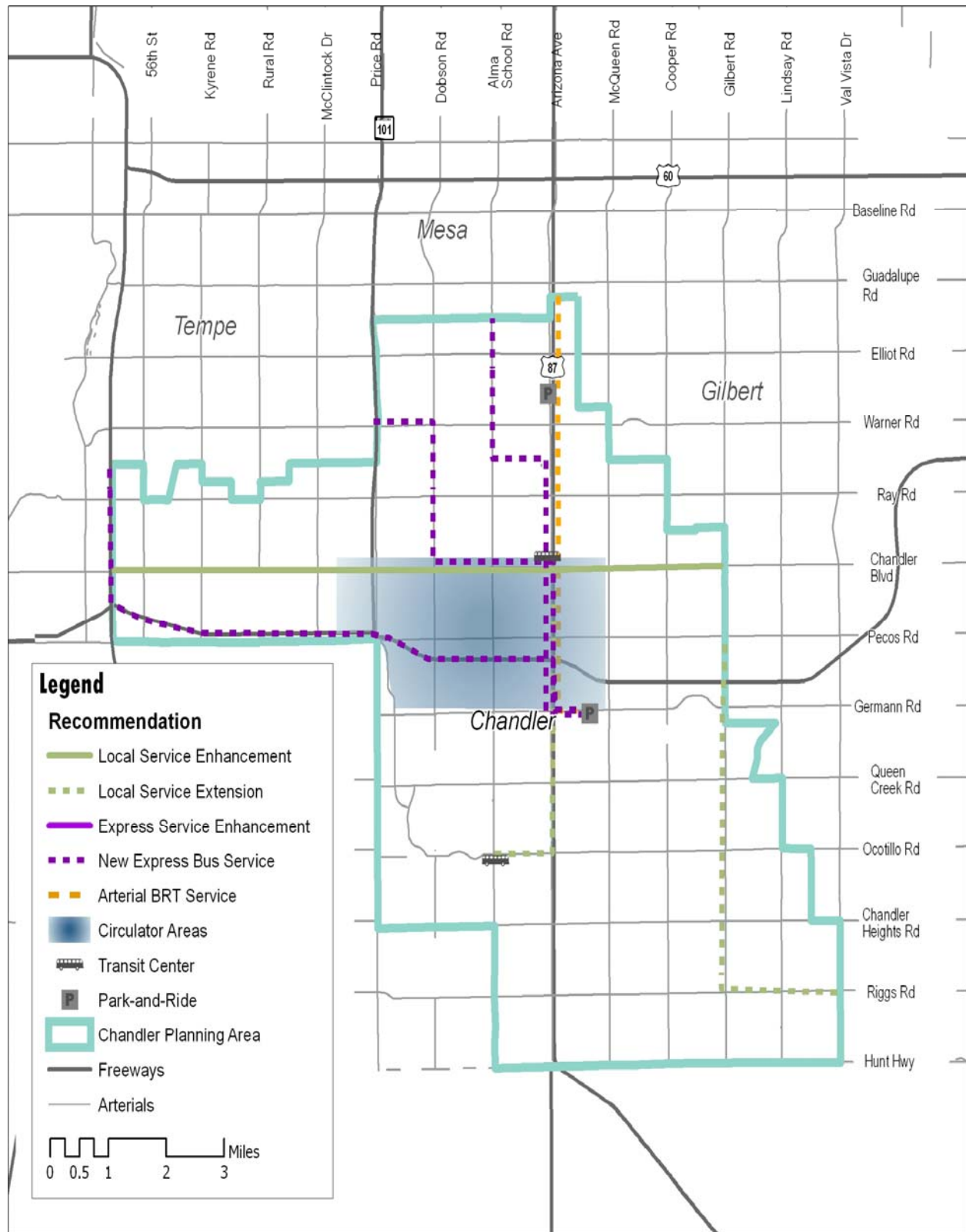




Figure 1-4: Mid-Term Transit Improvements

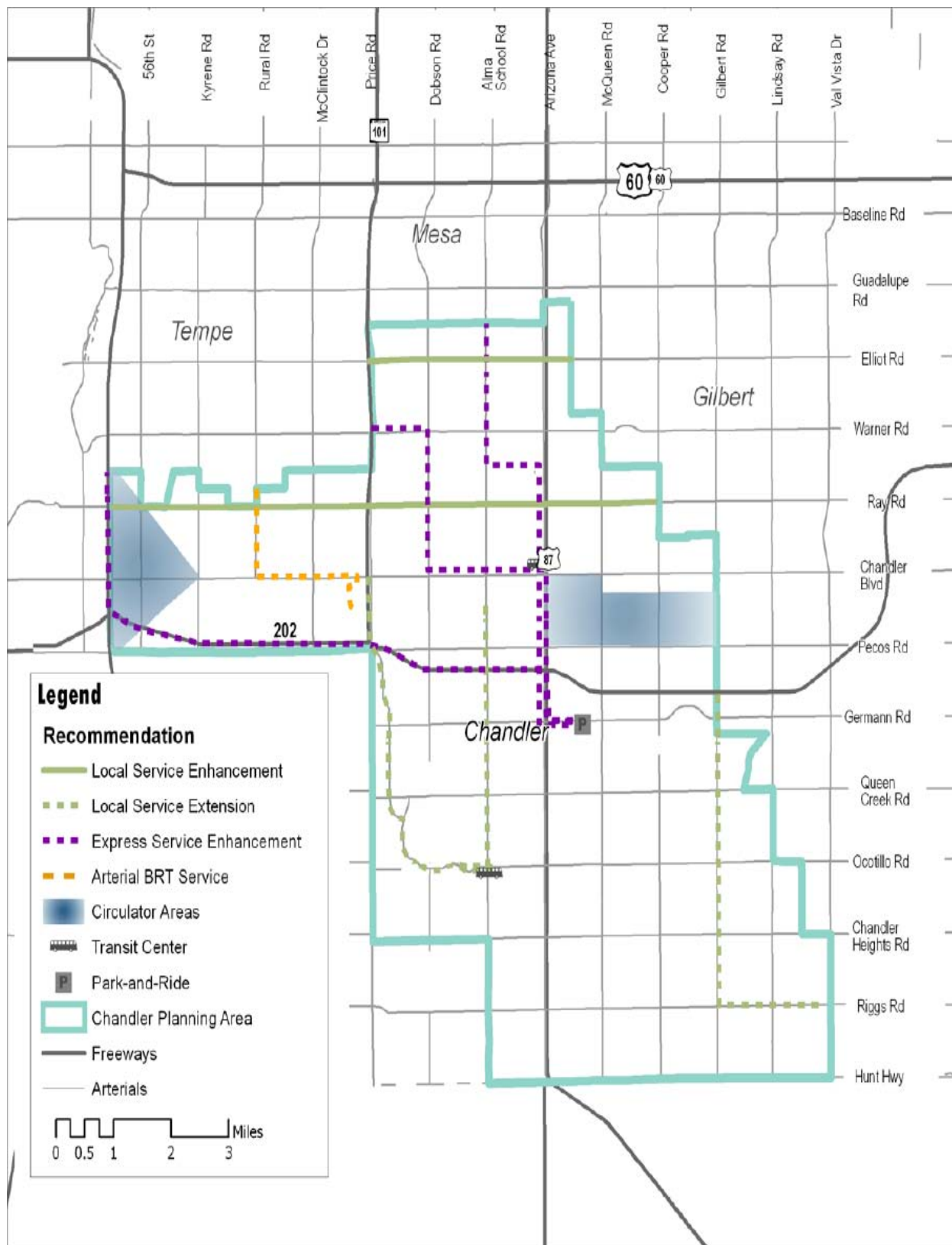




Figure 1-5: Long-Term Transit Improvements

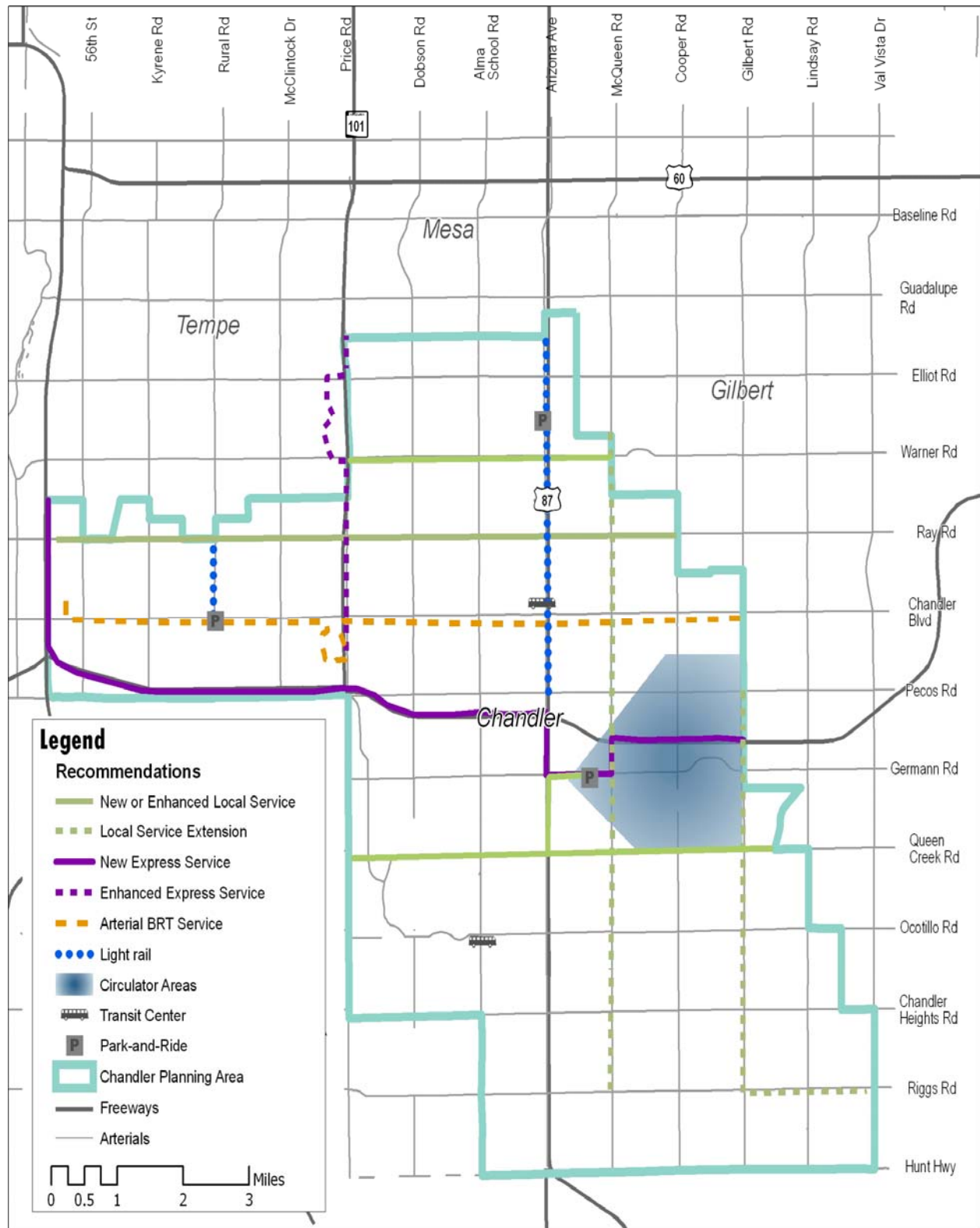
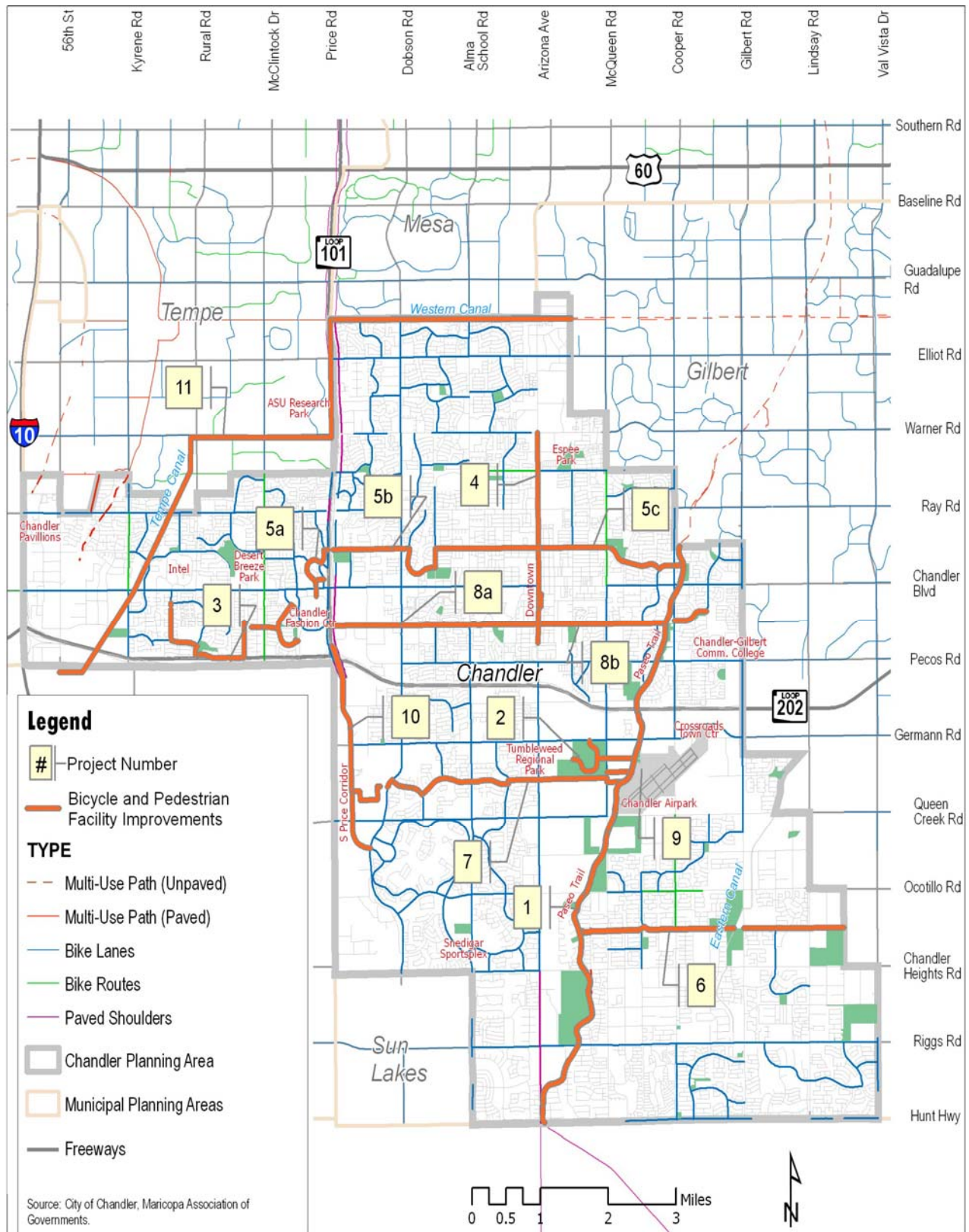




Figure 1-6: Recommended Bikeway and Pedestrian Improvements





## SECTION 2.0 GOALS AND OBJECTIVES

Transportation goals, objectives, and policies have been developed at both the regional and local levels. These statements provide the basis for identifying and evaluating alternative actions and for making decisions on the allocation of future transportation resources.

On May 28, 2008, the City of Chandler Transportation Commission created a vision statement and a series of goals and objectives to help guide the development of the Chandler Transportation Master Plan Update and future transportation development within the City.

The relationship of goals, objectives, and policies can be explained by the definitions below.

- **Goals:** Statements concerning desirable long-range achievements. These goal statements are general in nature and describe the ideal future situation.
- **Objectives:** Intermediate milestones that are essential to achieve the goals. They are expressed in terms that are measurable and achievable. Several objectives may apply to each goal.
- **Policies:** Approved courses of action to be followed. These policies describe the actions that are needed to achieve the objectives and, ultimately, the goals.

### 2.1 Goals and Objectives of the Chandler City Council

**Goal 1: The Most Connected City – Complete and connect Chandler’s parks, open spaces, trails, and community facilities in innovative ways so all residents will be able to reach key locations without a car if they want to.**

Related Objectives:

- Encourage designs that include community gathering places and pedestrian activity by using shade and other techniques.
- Join the Valley Metro Rail Board; position Chandler for light rail extension; monitor planning for commuter rail between Phoenix and Tucson.
- Investigate the possibility of accelerating the general purpose lanes on the Price Freeway to coincide with the construction of the HOV lanes.
- Develop options for finding and implementing a neighborhood connector transit system.
- Consider the feasibility of a shuttle service between Downtown and Chandler Fashion Center.
- Consider ways to enhance our existing pedestrian/bikeway system.



## 2.2 Transportation Commission Vision Statement, Goals and Objectives

### 2.2.1 Goals and Objectives

**Goal 1: Continue the development of an integrated, balanced multi-modal transportation system that facilitates the use of alternative modes of travel throughout the City of Chandler.**

Related Objectives:

- Objective 1.1: Facilitate the use of streets, transit operations, aviation facilities, rail facilities, bicycle lanes and paths, and pedestrian features as integral parts of the transportation system.
- Objective 1.2: Recognize the need to accommodate transportation choices and alternatives by including the consideration of all transportation modes in the preparation of City plans and the approval of private developments.
- Objective 1.3: Provide for efficiency, convenience, and reliability in the design and operation of each mode of the transportation system.
- Objective 1.4: Investigate opportunities for current businesses to construct site improvements that make their facilities friendlier to pedestrians, bicycles, and transit.
- Objective 1.5: Facilitate residents' accessibility to regional and interstate transportation facilities by creating multi-modal connections to bus systems, rail, air passenger services, and freeways.
- Objective 1.6: Strive to achieve efficient truck routes, reducing conflicts with passenger vehicles.
- Objective 1.7: Develop and maintain long-term plans for all transportation modes.
- Objective 1.8: Support major employer trip reduction efforts by providing infrastructure and transportation service improvements that encourage or facilitate the use of alternative modes of travel for employees to and from the work site.

**Goal 2: Develop and maintain a system of streets that provides for the safe and efficient movement of people and goods throughout the City.**

Related Objectives:

- Objective 2.1: Design, build, and maintain a street system that serves current and projected traffic volumes.
- Objective 2.2: Evaluate construction and right-of-way costs, economic and business impacts, and social effects of street widening and construction and mitigate negative impacts where possible.
- Objective 2.3: Identify and implement measures to reduce congestion on major arterials.
- Objective 2.4: Widen congested intersections by adding turn lanes and bus pullouts to provide additional capacity.



- Objective 2.5: Coordinate the design of roadway improvements with neighboring communities.
- Objective 2.6: Review and update street design standards as needed.

**Goal 3: Improve public transportation alternatives for Chandler citizens, commuters, and visitors.**

Related Objectives:

- Objective 3.1: Engage in long-range planning for light rail system extension into the city along High Capacity Transit Corridors and/or commuter rail service on existing railroad facilities.
- Objective 3.2: Expedite High Capacity Corridor improvements, including high speed bus rapid transit connections with metropolitan area destinations.
- Objective 3.3: Provide connections from outlying lower-density neighborhoods (e.g. dial-a-ride local bus service) to Downtown Chandler and transit centers.
- Objective 3.4: Encourage ridership through transit-oriented development.
- Objective 3.5: Expand transit services as appropriate to meet demand.
- Objective 3.6: Support transit services with appropriate levels of amenities.
- Objective 3.7: Support transit service and promote transit use through innovative land use, design, and parking policies.
- Objective 3.8: Ensure that transit service is easy to use and comfortable for users.
- Objective 3.9: Develop options for funding and implementing a neighborhood connector transit system.
- Objective 3.10: Identify and prioritize routes for shuttle service between major activity centers and establish priorities for implementation as funding is available.

**Goal 4: Provide for bicycling as a viable transportation choice by providing on-road and off-road bicycle facilities designed for maximum safety, convenience, and comfort.**

Related Objectives:

- Objective 4.1: Plan a continuous and interconnected system for bicycle travel among Chandler neighborhoods, downtown, and adjoining communities.
- Objective 4.2: Enhance the existing pedestrian/bikeway system by continuing the implementation of bicycle lanes on arterial streets where feasible and in accordance with established safety and design standards.
- Objective 4.3: Encourage bicycle commuting through education and outreach programs.
- Objective 4.4: Consider the placement of bicycle lanes on arterial streets where feasible.
- Objective 4.5: Include bicycle plan integration in new developments, street improvements, and neighborhood revitalization strategies.
- Objective 4.6: Design bicycle facilities that serve bicyclists of all ages and skill levels.



- Objective 4.7: Improve safety for bicycle paths and lanes by designing and implementing a bicycle safety program.
- Objective 4.8: Provide bicycle transport facilities on buses and light rail cars.

**Goal 5: Design and implement pedestrian infrastructure improvements that provide comfortable, safe, and convenient pedestrian access in appropriate areas of Chandler.**

Related Objectives:

- Objective 5.1: Prepare and adopt a Pedestrian Master Plan.
- Objective 5.2: Revise Chandler Standard Details to encourage pedestrian mobility.
- Objective 5.3: Develop pedestrian access design guidelines for developers that encourage pedestrian activity.
- Objective 5.4: Complete pedestrian improvements in conjunction with projects currently funded by the Capital Improvement Projects Budget, such as those listed under Parks, Community Services, Streets and Transit.
- Objective 5.5: Develop funding assistance for pedestrian improvements, possibly modeled after the Downtown Improvement Fund.
- Objective 5.6: Survey existing pedestrian facilities to identify problem areas/issues and develop a hierarchical list of remediation projects.
- Objective 5.7: Enhance off-road corridors as pedestrian connections, especially in neighborhood revitalization areas.
- Objective 5.8: Collaborate with the community to implement and market a “Safe Routes to School” program where appropriate.
- Objective 5.9: Develop minimum “safety” criteria for pedestrian facilities that include such elements as sidewalk width, driveway crossings, access ramps, separation from traffic, lighting, and crosswalks.
- Objective 5.10: Develop “comfort” criteria that further enhance pedestrian facilities in selected areas by considering such elements as wider sidewalks, additional separation from traffic, traffic calming improvements, more consistent lighting, improved pedestrian crossings, and more shade.
- Objective 5.11: Develop “destination” criteria that seek to enhance the “comfort” criteria in selected high density, urban residential and urban commercial areas, such as the downtown and the Arizona Avenue corridor.
- Objective 5.12: Conduct an education and marketing campaign, possibly in conjunction with the City Manager’s Office, Community Services, State and County Health Departments, Education Departments, and Trip Reduction Programs to increase awareness of pedestrians and walking as a viable transportation option.

**Goal 6: Facilitate the integration and coordination of transportation and land-use planning.**





Related Objectives:

- Objective 6.1: Maintain communication with adjacent communities and regional agencies to coordinate transportation planning, programming, design standards and system improvements.
- Objective 6.2: Communicate and promote an overall transportation “vision” that references transit-oriented development principles to encourage mixed-use “live, work, play” opportunities.
- Objective 6.3: Require transportation area plans for major development to document and address transportation needs (street, pedestrian, bicycle and transit).
- Objective 6.4: Plan high capacity corridors near planned high intensity land uses.
- Objective 6.5: Design optimum roadway widths, geometrics, ingress-egress and signalization in high capacity corridors tied to land use intensity.
- Objective 6.6: Discourage through traffic in residential neighborhoods by means of efficient signalization on arterial streets and traffic calming.
- Objective 6.7: Coordinate with regional and neighborhood community transportation plans.
- Objective 6.8: Establish site planning design criteria that relate vehicular access/parking with bike and pedestrian connections between adjacent land uses.
- Objective 6.9: Review and update standards and policies for implementing traffic calming measures in neighborhoods.
- Objective 6.10: Engage the City’s Art Commission to identify opportunities to integrate public art into transportation projects.
- Objective 6.11: Establish development design standards and policies that encourage and facilitate both bike and pedestrian access between adjacent land uses.
- Objective 6.12: Develop policies and programs that protect existing residential neighborhoods (and other sensitive land uses) from adverse traffic impacts and enhance quality of life in the community.
- Objective 6.13: Integrate the City’s diverse travel needs, history, and cultural values in planning and operating the transportation system.
- Objective 6.14: Utilize aviation facilities to attract business and accommodate local aircraft owners.

**Goal 7: Adopt policies and implement programs and procedures that will protect the public investment, provide sufficient maintenance, and ensure the long-term viability of the City’s transportation infrastructure.**

Related Objectives:

- Objective 7.1: Develop a financial strategy for long-term funding for the construction and maintenance of City transportation facilities.
- Objective 7.2: Establish maintenance standards for street surfaces, streetlights, sidewalks, curb and gutter, signals, signs and markings, landscaping and storm drains.
- Objective 7.3: Establish fiscal policies that provide for system capacity improvements needed to accommodate new development.



- Objective 7.4: Review the adequacy of existing arterial street impact fee policies.
- Objective 7.5: Develop policies and procedures for mitigating transportation impacts related to infill development outside of the existing impact fee area.
- Objective 7.6: Pursue additional outside funding sources, including federal and state grants.

**Goal 8: Identify transportation system opportunities to conserve energy, reduce air pollution, protect water quality, and recycle materials when expanding/improving transportation infrastructure.**

Related Objectives:

- Objective 8.1: Apply new and emerging technologies to improve traffic operations, reduce vehicle miles traveled, reduce vehicle emissions, and improve the operational efficiencies of the existing transportation infrastructure.
- Objective 8.2: Evaluate expanding the City's low emissions and/or alternative fuel vehicle fleet.
- Objective 8.3: Increase the City's use of Intelligent Transportation Systems (ITS) to improve traffic flow.
- Objective 8.4: Evaluate the City's Commuter Trip Reduction program and revise measures as needed.
- Objective 8.5: Investigate use of recycled materials in street construction (i.e. crushed glass, rubberized asphalt, recycled asphalt).
- Objective 8.6: Work with communications companies to coordinate installation of Fiber Optic network along all established and planned transportation corridors.

**Goal 9: Improve public information and encourage citizen input in transportation decision-making.**

Related Objectives:

- Objective 9.1: Develop alternative transportation mode education and awareness programs and encourage their use.
- Objective 9.2: Seek citizen input on transportation projects and issues and develop transportation related information for public distribution.
- Objective 9.3: Maintain the City website with information on transportation projects and public meetings.
- Objective 9.4: Establish a presence at City sponsored events.

## **2.3 Goals and Objectives of the Circulation Element of the General Plan Update**

**Goal 1: Improve public transportation alternatives for Chandler citizens, commuters and visitors.**



Related Objectives:

- Objective 1.1: Engage in long-range planning for light rail system extension into the city along High Capacity Transit Corridors and/or commuter rail service on existing railroad facilities.
- Objective 1.2: Expedite High Capacity Corridor improvements, including high speed bus rapid transit connections with metropolitan area destinations.
- Objective 1.3: Provide connections from outlying lower-density neighborhoods (e.g. dial-a-ride local bus service) to Downtown Chandler and transit centers.

**Goal 2: Match land-use intensities with planned transportation system capacities.**

Related Objectives:

- Objective 2.1: Plan High Capacity Corridors near planned high intensity land uses.
- Objective 2.2: Design optimum roadway widths, geometrics, ingress-egress and signalization in “high capacity corridors” tied to land-use intensity.
- Objective 2.3: Emphasize transportation safety in all parts of the city.
- Objective 2.4: Discourage through traffic in residential neighborhoods by means of efficient signalization on arterial streets and traffic calming.
- Objective 2.5: Coordinate with regional and neighborhood community transportation plans.
- Objective 2.6: Establish site planning design criteria that relate vehicular access/parking with bike and pedestrian connections between adjacent land uses.

**Goal 3: Continue the Development of an integrated multi-modal transportation system.**

Related Objectives:

- Objective 3.1: Utilize aviation facilities to attract business and accommodate local aircraft owners.
- Objective 3.2: Facilitate residents’ accessibility to regional and interstate transportation with links to bus, rail, air passenger services, and freeway connections.
- Objective 3.3: Strive to achieve efficient truck routes, reducing conflicts with passenger vehicles.
- Objective 3.4: Plan multi-modal connections – public transportation, roadway capacity, bike lanes, pedestrian paths – through employment corridors and growth nodes.



**Goal 4: Broaden bikeways scope to connect neighborhoods with downtown.**

Related Objectives:

- Objective 4.1: Complete bicycle lanes on all arterial streets.
- Objective 4.2: Encourage bicycle commuting.
- Objective 4.3: Include bicycle plan integration in new developments, street improvements and neighborhood revitalization strategies.
- Objective 4.4: Plan a continuous and interconnected system for bicycle travel among adjoining communities.

**Goal 5: Design on- and off-road bicycle facilities for maximum safety, convenience and comfort.**

Related Objectives:

- Objective 5.1: Serve bicyclists of all ages and skill levels.
- Objective 5.2: Improve safety for bike paths and lanes.
- Objective 5.3: Provide bicycle transport on buses and light rail.
- Objective 5.4: Add bicycle amenities such as parking and rest areas.
- Objective 5.5: Provide an educational bike safety program.



## SECTION 3.0 EXISTING AND FUTURE SOCIO-ECONOMIC CONDITIONS

This chapter summarizes the existing and future socio-economic conditions that provide the basis for the identification of problem areas and the analysis of future needs. Included are descriptions of the socioeconomic factors on which the analysis of needs will be based.

In order to develop effective recommendations for roadway, transit and bicycle/pedestrian facilities and services, past and existing information is collected that is the foundation for all projections and modeling. Unfortunately, vital information such as socioeconomic data is collected every five or ten years by the U.S. Census Bureau. It is important to note that while older data may be shown in this section, updated data is incorporated into the process of developing recommendations so that all recommended improvements are accurate and meaningful.

### 3.1 Existing Conditions

Population and employment data form the basis for the assessment of future transportation needs. The Maricopa Association of Governments (MAG) is the designated Metropolitan Planning Organization (MPO) for transportation planning in the Maricopa region. Arizona Executive Order 95-2 mandates that the Arizona Department of Economic Security (DES) prepare the state and county population projections. In Maricopa County, MAG prepares projections below the county level that are consistent with the county totals generated by DES. These socioeconomic projections are used in computer models to forecast future travel conditions and needs.

Existing socioeconomic data are used to develop a simulation of existing travel demand. The existing year model provides a baseline for verifying that the model correctly simulates existing conditions and therefore provides a basis for analyzing future conditions. This section presents a summary of existing population and employment.

The socioeconomic data are defined at three geographic levels. Maricopa County is subdivided into 27 Municipal Planning Areas (MPA), which include the corporate limits of each municipality plus any adjacent areas that are anticipated to become a future part of its corporate limits. The MPAs are subdivided into 145 Regional Analysis Zones (RAZ), which are the basic units used by the spatial allocation model to prepare sub-regional projections. Maricopa County is further subdivided into 1,864 Traffic Analysis Zones (TAZ) which are subunits of the Regional Analysis Zones and are the smallest units for which MAG prepares projections. The TAZ boundaries are defined using major streets and landmarks.



Figure 3-1 illustrates the seven Regional Analysis Zones that are within the Chandler Municipal Planning Area. The corresponding 73 Transportation Analysis Zones are shown in Figure 3-2.



Figure 3-1: Regional Analysis Zones (RAZ) 2007

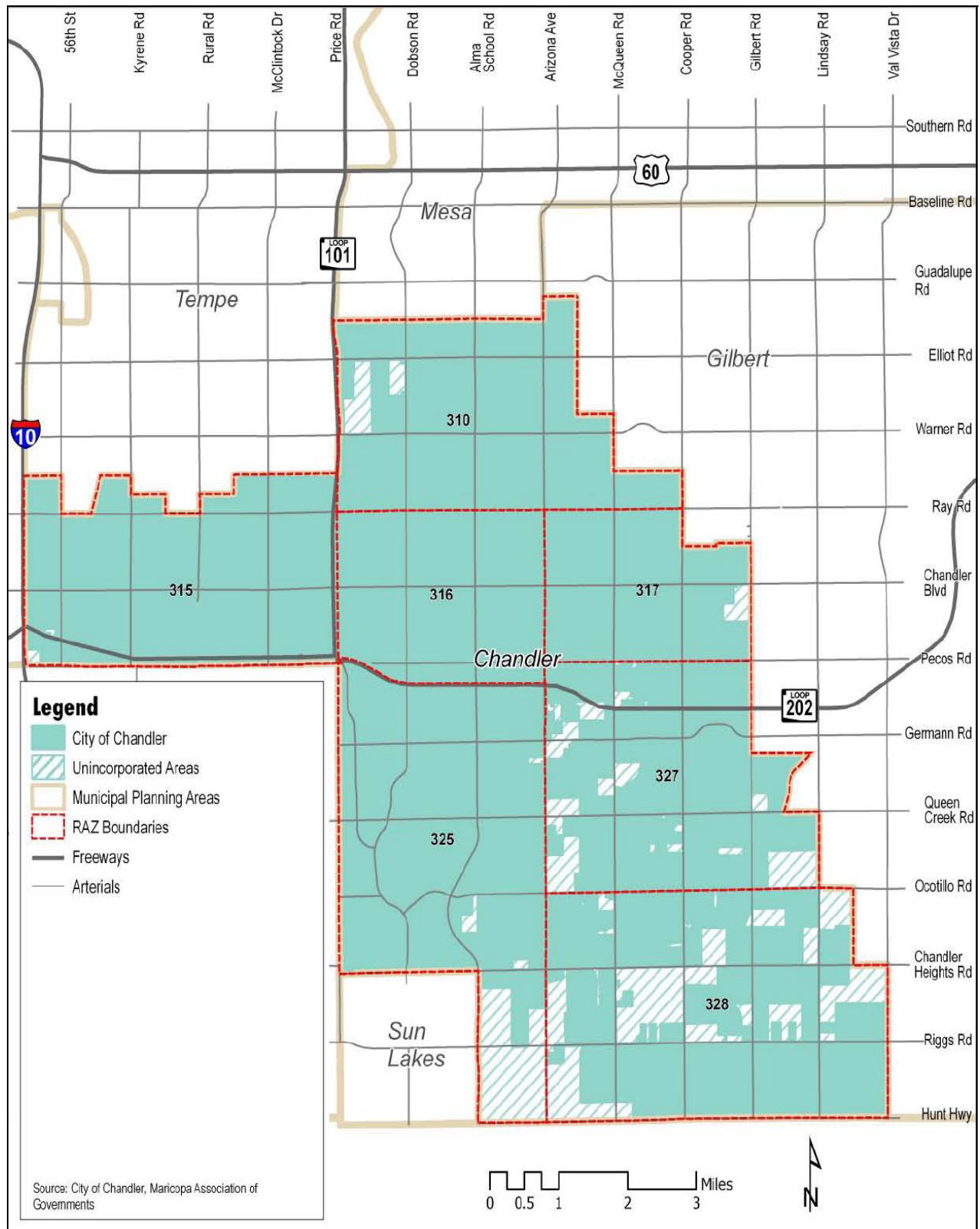
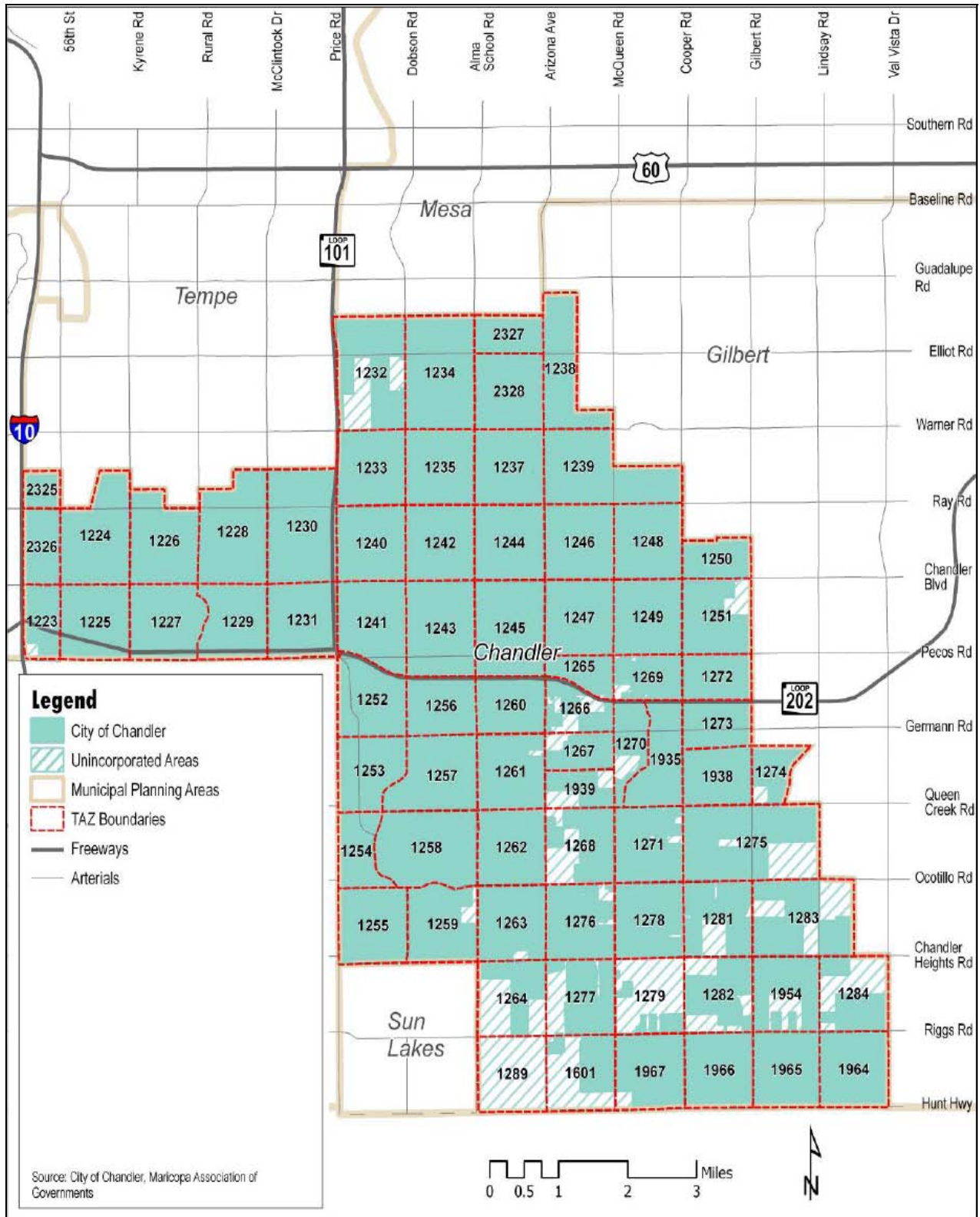




Figure 3-2: Transportation Analysis Zones (TAZ) 2007







### 3.1.1 Population

#### Total Population and Population Growth

The estimated 2005 resident population for the Chandler MPA is 236,073 persons. Table 3-1 shows this population for each Regional Analysis Zone (RAZ). Figure 3-3 illustrates a range of population for each of the smaller Traffic Analysis zones.

**Table 3-1: 2005 Population Summary**

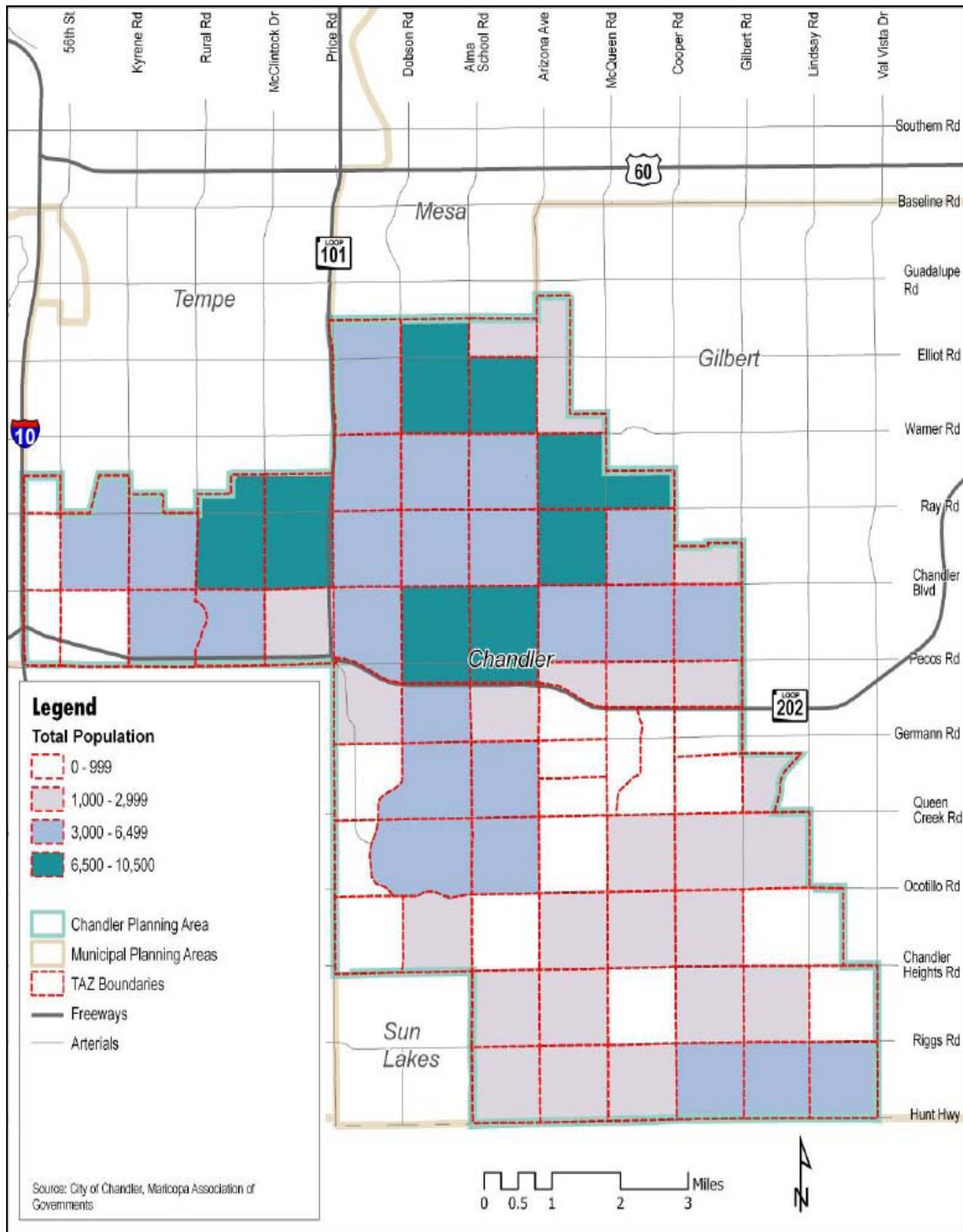
RAZ	Population (2005)
310	52,825
315	39,659
316	36,110
317	33,027
325	33,108
327	11,201
328	30,143
TOTAL	236,073

*Source: Socioeconomic Projections of Population, Housing and Employment by Municipal Planning Area and Regional Analysis Zone, Maricopa Association of Governments, May 2007*

Like the urban area of Maricopa County and the State of Arizona, Chandler has experienced substantial population growth over the last 25 years. Table 3-2 shows the historical population change for Chandler, Maricopa County, and the State of Arizona.



Figure 3-3: Total Population by TAZ (2005)





**Table 3-2: Historic Population Change in Chandler, Maricopa County, and State of Arizona**

Year	Chandler	Maricopa County	State of Arizona
1980	29,673	1,509,052	2,718,215
1990	90,533	2,122,101	3,662,228
2000	176,581	3,072,123	5,130,632
2005	236,073	3,768,123	6,166,318
Change, 1980-1990	205 %	41 %	35 %
Change, 1990-2000	95 %	45 %	40 %
Change, 2000-2005	34 %	23 %	20 %

*Source: 2006 Community Survey, US Decennial Census 1980, 1990, 2000*

**Title VI and Environmental Justice Populations**

Title VI of the Civil Rights Act of 1964 provides that individuals may not be excluded from participation in, denied the benefit of, or subjected to discrimination on the basis of race, color, national origin, religion, age, gender, or disability. Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued in February 1994. This executive order requires federal agencies to identify and avoid “disproportionately high and adverse effects of its programs, policies, and activities on minority populations and low-income populations”. Recipients of federal assistance for transportation-related projects must be in compliance with the requirements of Title VI and the Environmental Justice Executive Order.

The demographic characteristics that are considered in the evaluation of disproportionate adverse effects include the following:

- Race (percent minority)
- Age (percent 65 and older)
- Low-Income (defined by federal poverty guidelines)
- Mobility Disability (prevalence of persons with mobility or self-care limitations)
- Female Head of Household (percent single female parent)

The demographic characteristics are summarized in Table 3-3. The locations of the environmental justice populations are shown on Figure 3-4 through Figure 3-9.



**Table 3-3: Summary of Population Characteristics**

Census Data Category	State of Arizona		Maricopa County		City of Chandler	
	2000 Census	2006 Community Survey	2000 Census	2006 Community Survey	2000 Census	2006 Community Survey
Total Population	5,130,632	6,166,318	3,072,149	3,768,123	176,581	241,064
White	3,873,611	4,741,310	2,376,359	3,019,221	136,296	195,259
Percent White	75.5	76.9	77.4	80.1	77.2	81.0
Non-White	1,257,021	1,425,008	695,790	748,902	40,285	45,805
Percent Non-White	24.5	23.1	22.6	19.9	22.8	19.0
Population Over 65	667,839	789,751	358,979	417,424	10,284	14,419
Percent Over 65	13.0	12.8	11.7	11.1	5.8	6.0
Population Below Poverty Level	698,669	(NA)	355,668	(NA)	11,632	19,767
Percent Below Poverty Level	13.9	14.2	11.7	12.5	6.6	8.2



Figure 3-4: Non-White Population (2000 Census)

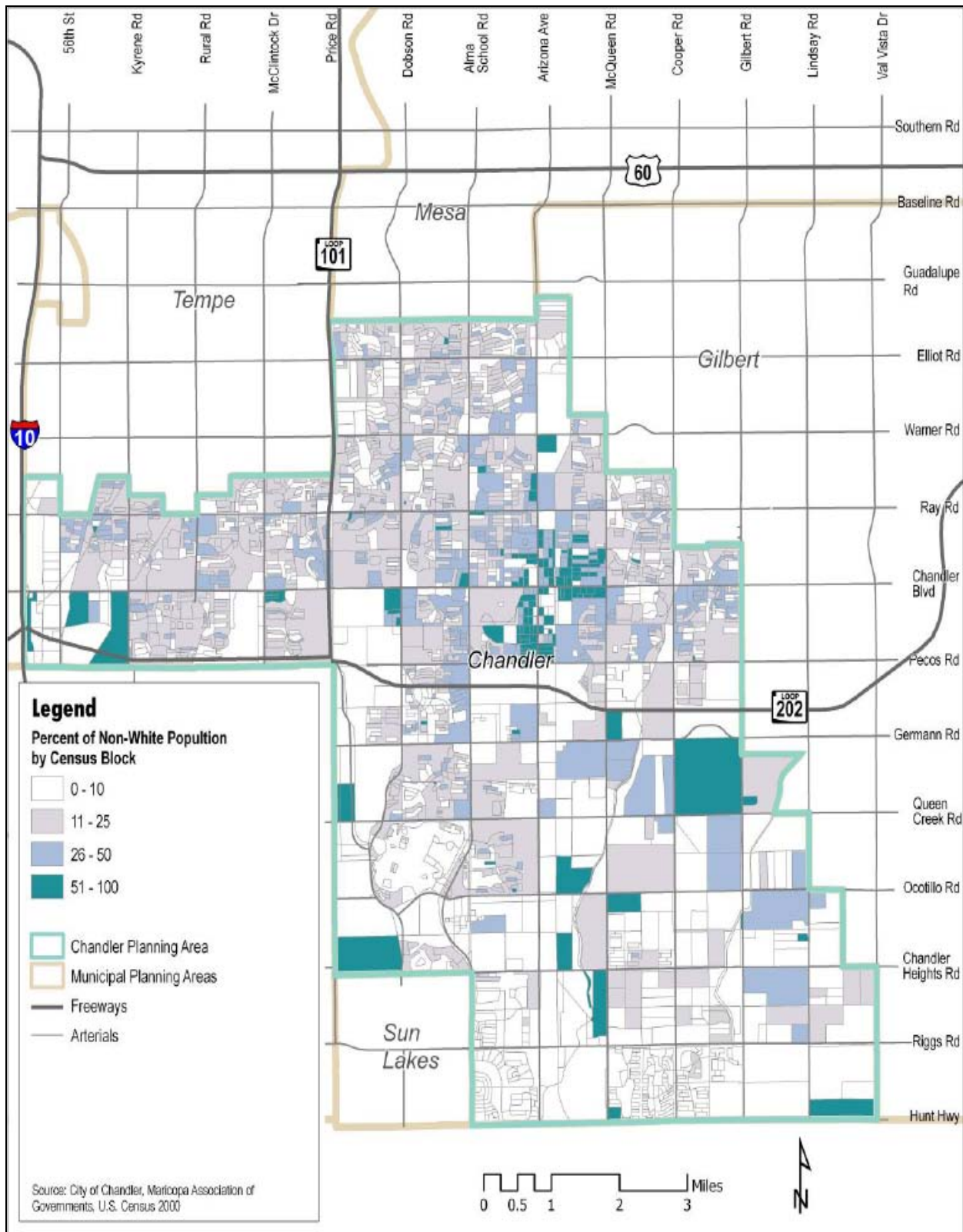




Figure 3-5: Hispanic Population (2000 Census)

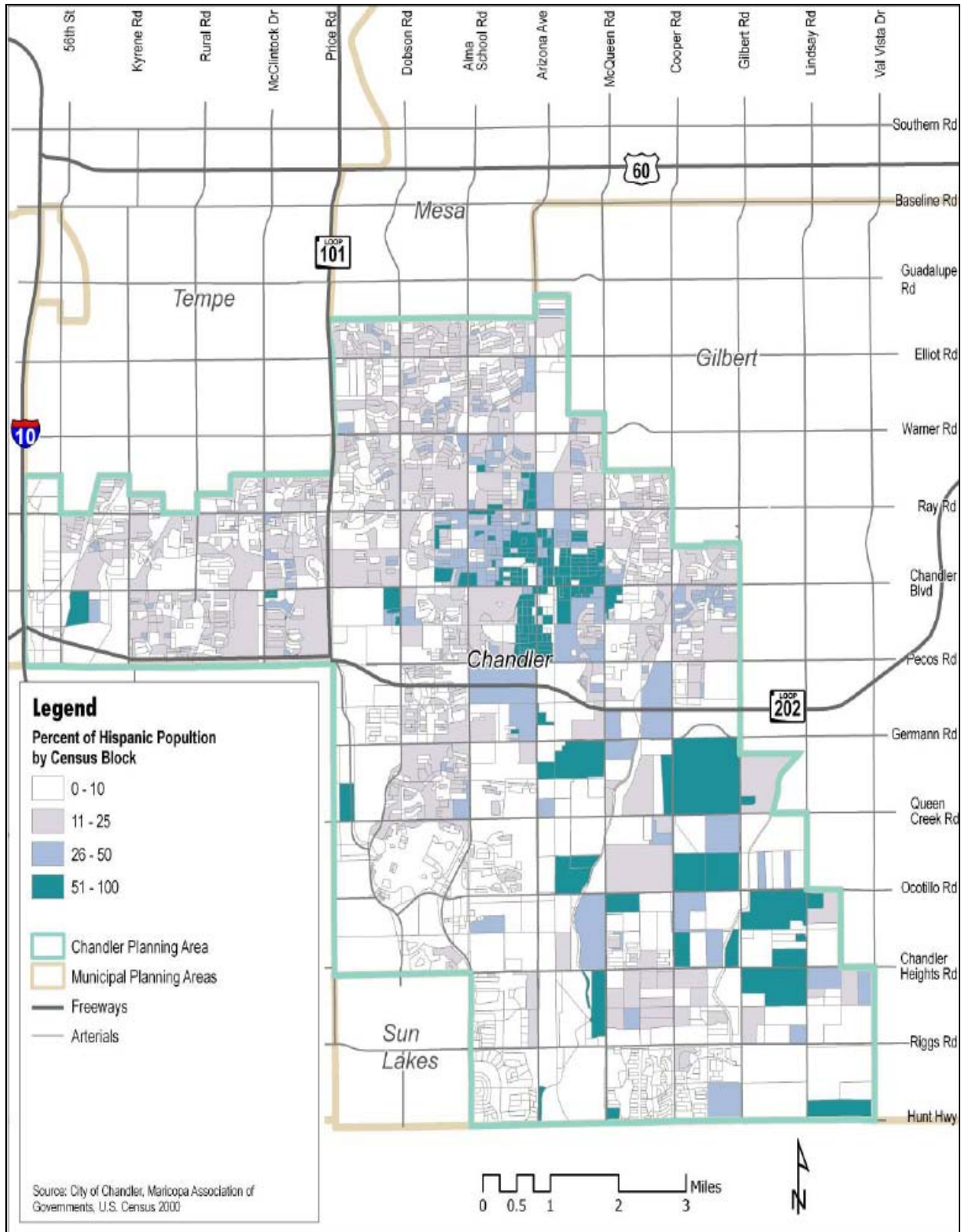




Figure 3-6: Population 65 and Older (2000 Census)

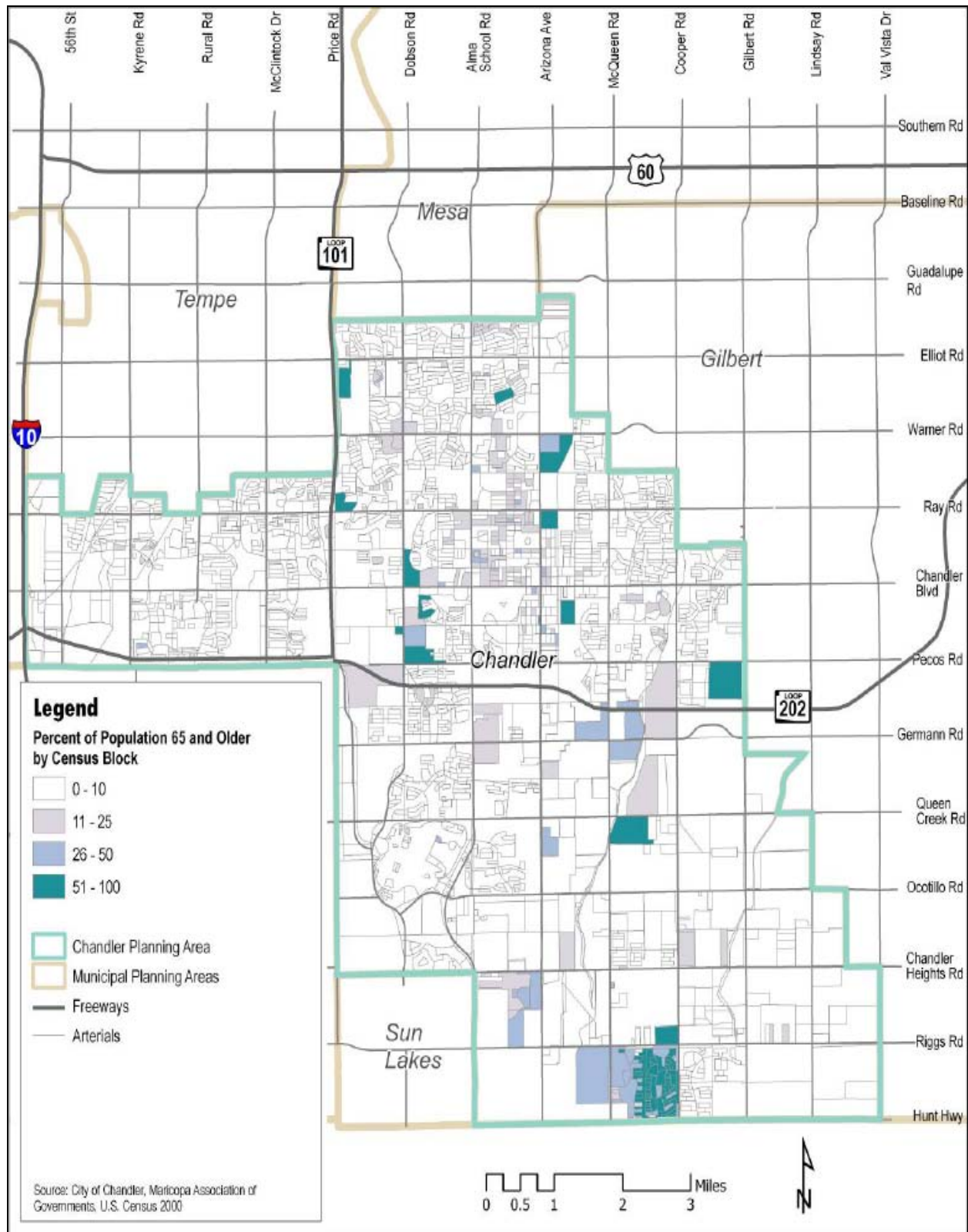




Figure 3-7: Population in Poverty (2000 Census)

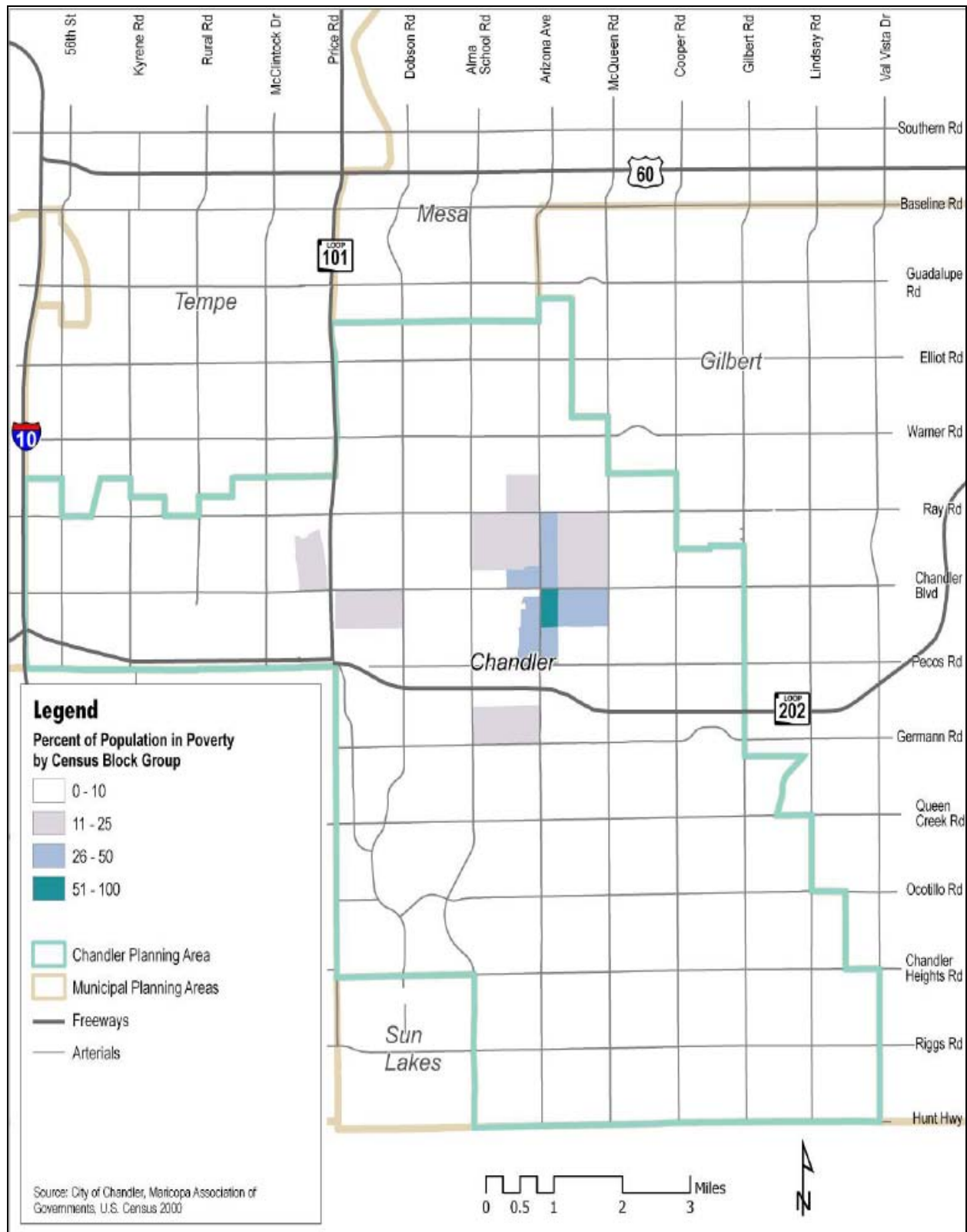






Figure 3-8: Mobility Disability Population (2000 Census)

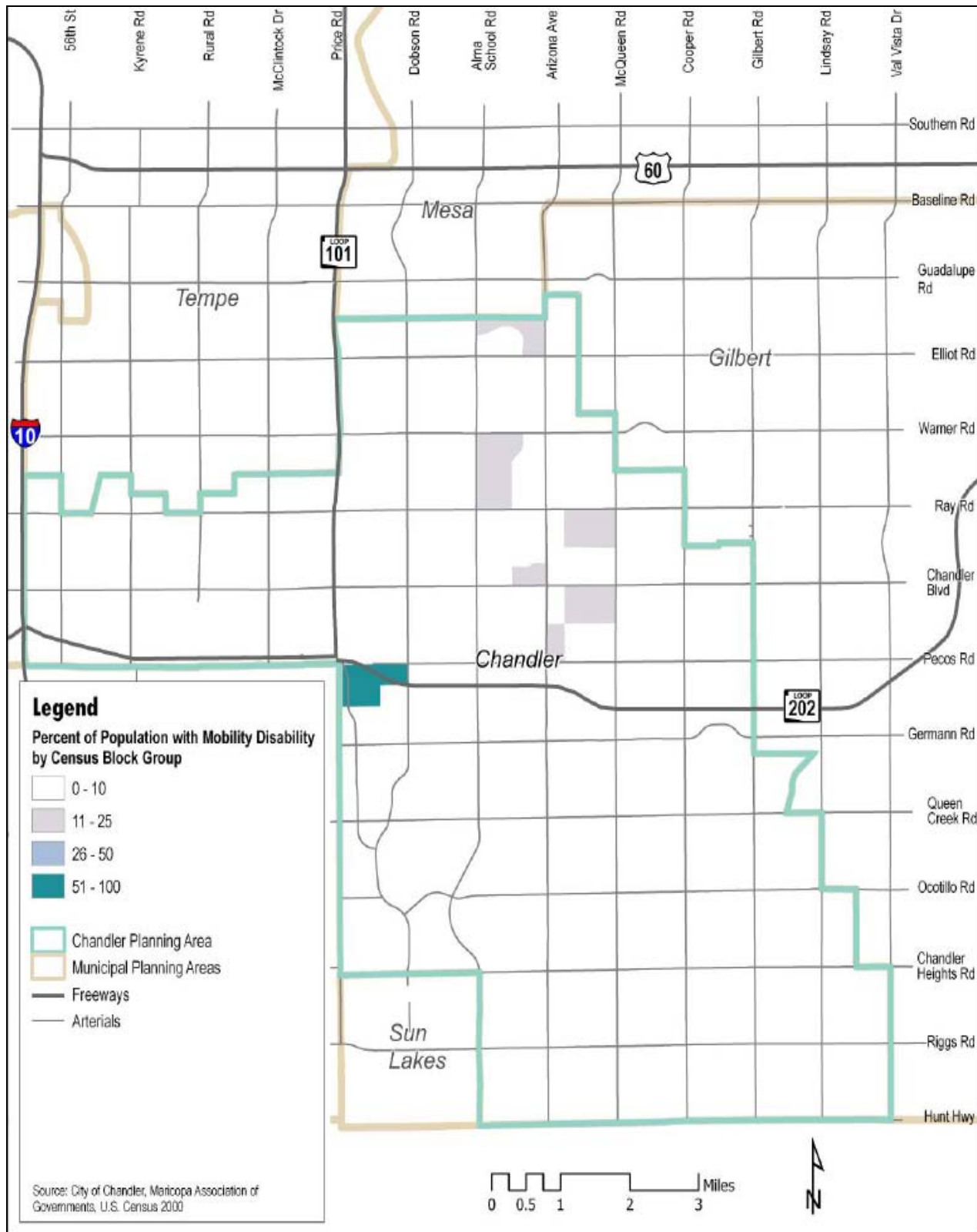
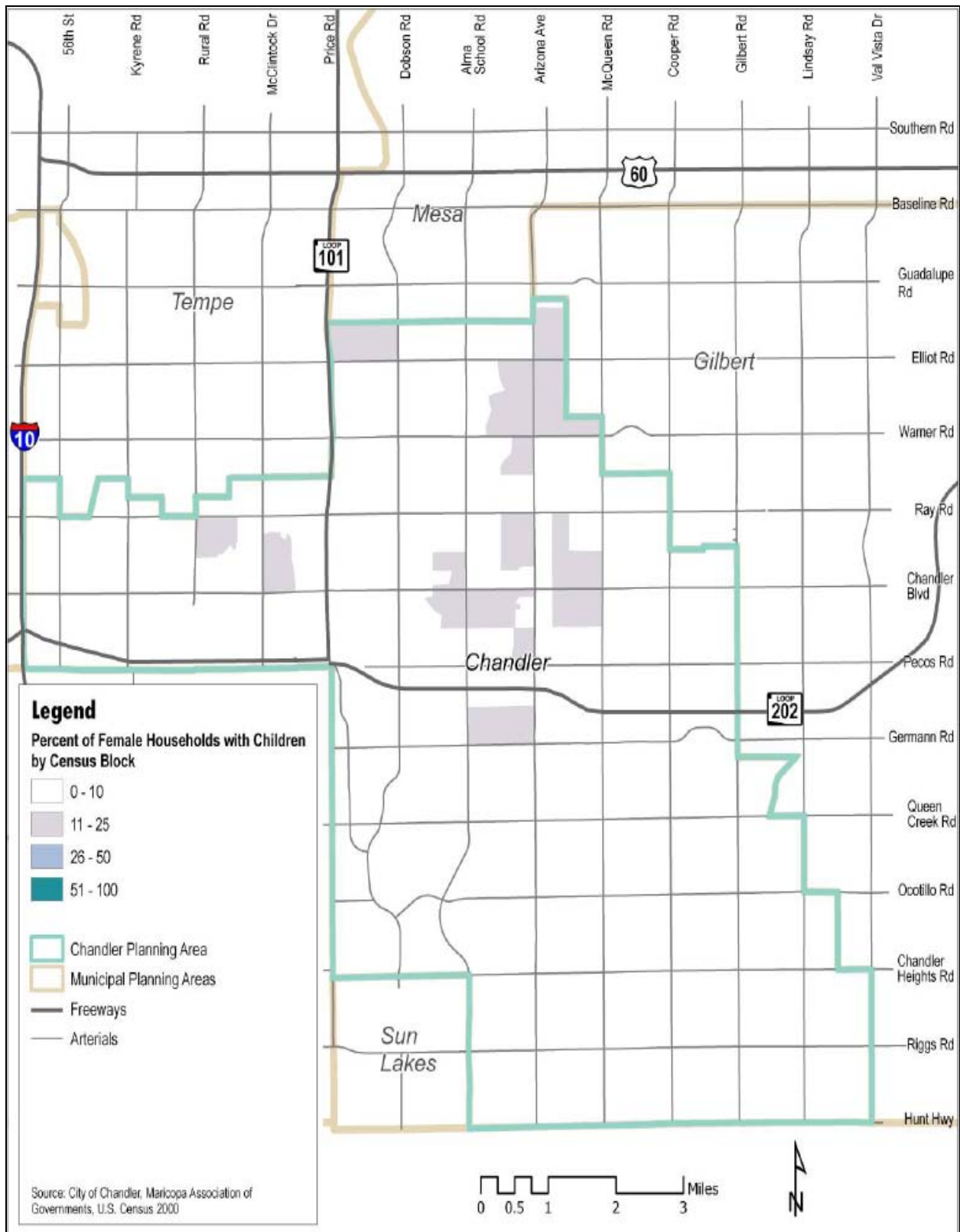




Figure 3-9: Female Households with Children (2000 Census)





### 3.1.2 Employment

The total number of persons employed within the Chandler MPA in 2005 was estimated to be 86,732. Table 3-4 shows the employment data by RAZ and by type of employment. Figure 3-10 illustrates a range of employment for each of the smaller Traffic Analysis Zones.

**Table 3-4: Employment Summary**

RAZ	Total	Retail	Office	Industrial	Public	Other
310	18,376	6,862	1,665	5,838	1,362	2,649
315	28,055	6,664	2,159	16,629	1,043	1,760
316	13,363	5,366	1,184	2,349	1,475	2,989
317	6,279	1,319	292	360	3,665	643
325	14,294	2,201	2,624	6,537	1,157	1,775
327	3,283	961	0	540	290	1,492
328	3,082	425	0	519	815	1,323
<b>TOTAL</b>	<b>86,732</b>	<b>23,798</b>	<b>7,924</b>	<b>32,572</b>	<b>9,807</b>	<b>12,631</b>

*Source: Socioeconomic Projections of Population, Housing and Employment by Municipal Planning Area and Regional Analysis Zone, Maricopa Association of Governments, May 2007*

### 3.1.3 Major Activity Centers

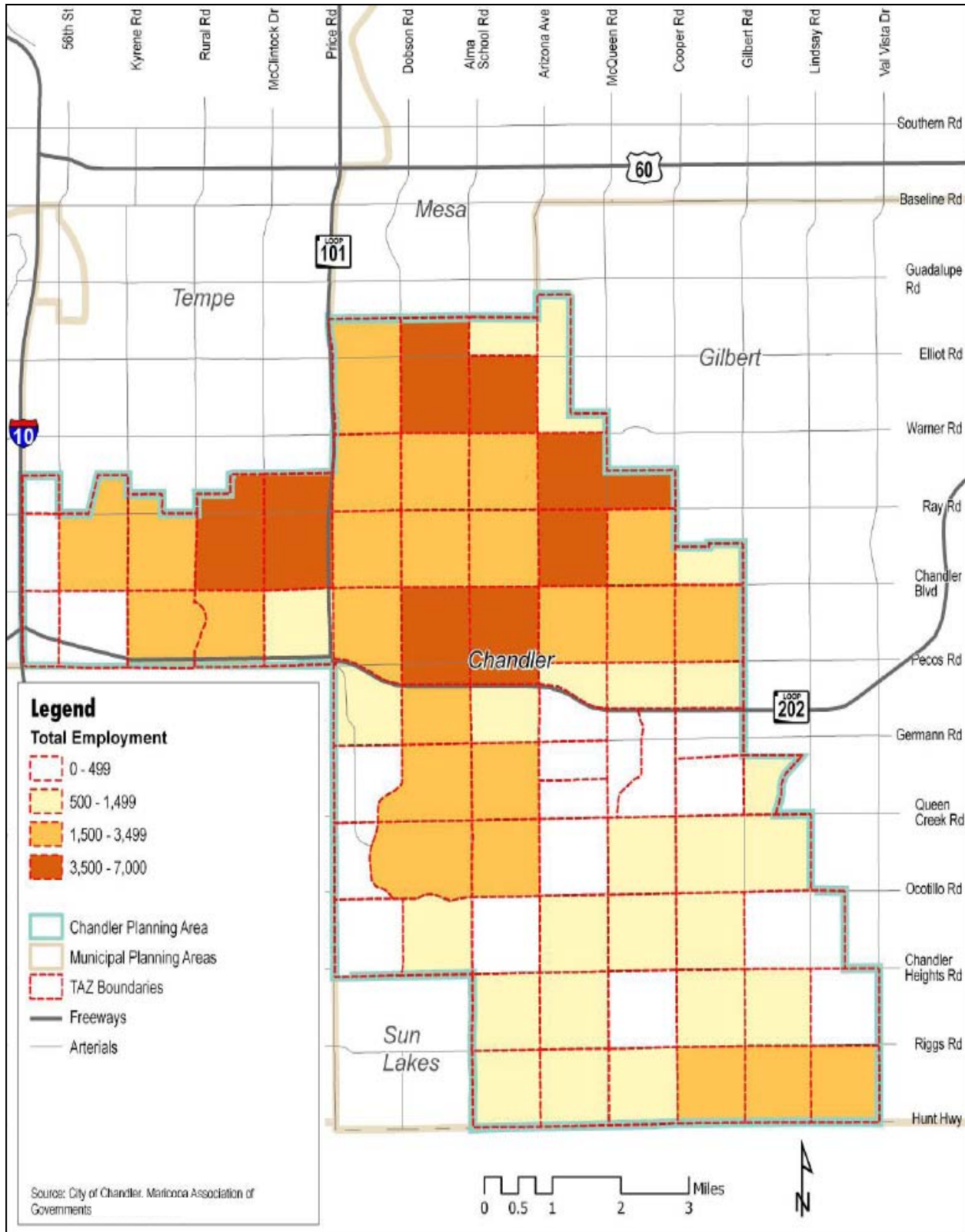
For transportation planning purposes, major activity centers are defined as facilities that produce a significant number of trips on a daily basis. These areas include employment centers, shopping malls, schools, government offices and airports.

The transportation system should be structured to serve and promote the land use patterns that have been identified in the updated General Plan. Coordination of transportation facilities with the existing and planned land uses is essential.

The locations of major activity centers in Chandler are illustrated on Figure 3-11.



Figure 3-10: Total Employment by TAZ (2005 Special Census)







### 3.1.4 Land Use

Existing land uses are the result of historic uses and later developments in accordance with the 2008 General Plan. Growth in the city has created a transition from agricultural lands to a more urbanized pattern. The most recent developments have tended to maintain Chandler’s overall low density. Specific developments have been in accordance with guidelines established by a series of area plans.

In general, residential land uses lie within the square-mile sections as defined by the major arterial streets. Commercial uses are located at major intersections and along the arterials. Employment areas are also located on major arterials, with concentrations in the west and southwest portions of the city. The existing acreages of the various land use categories are shown in Table 3-5. The distribution of existing land uses is illustrated on Figure 3-12.

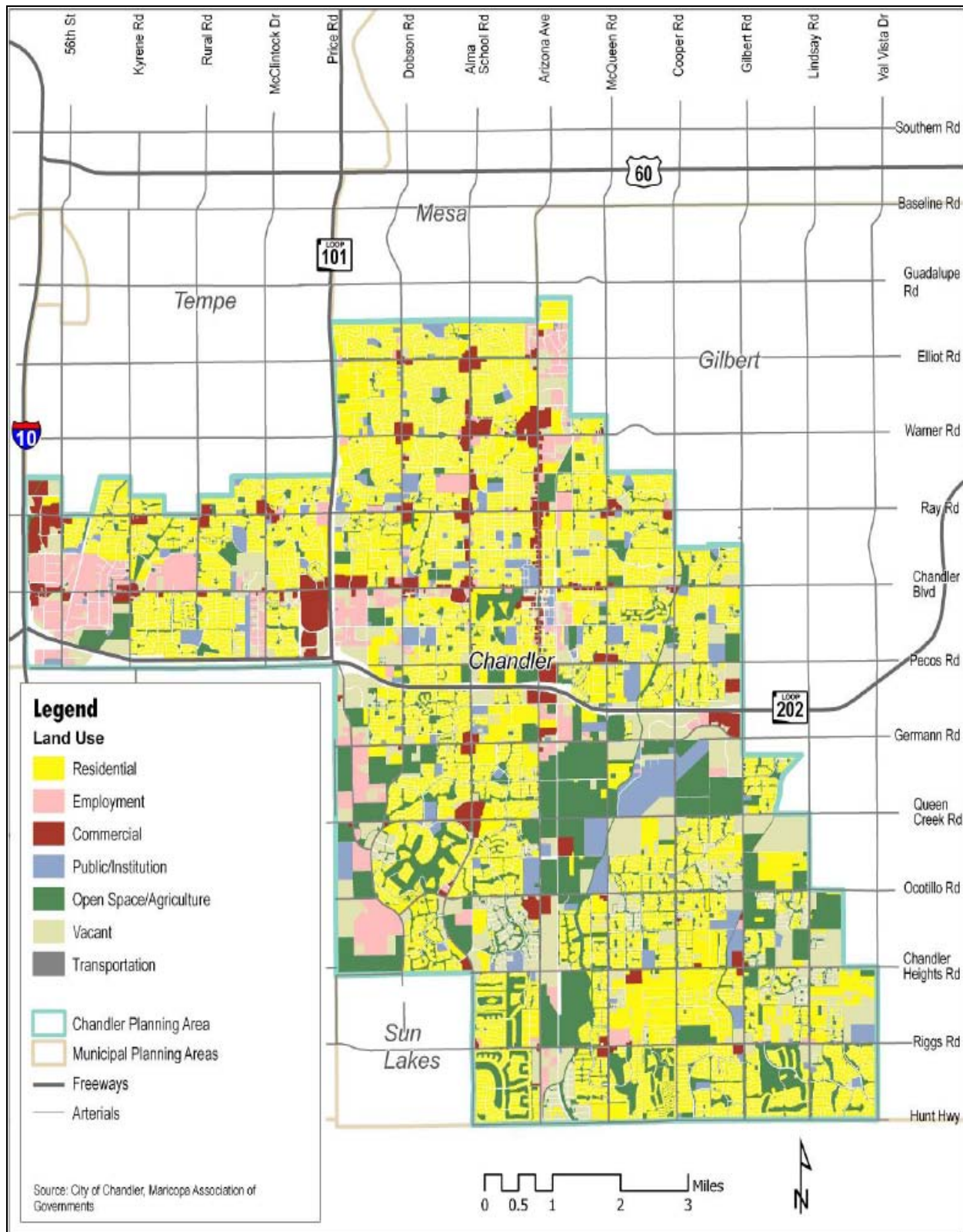
**Table 3-5: Existing Land Use Comparison (2006)**

Land Use	Acres	Percent
Residential	17,162	46.8
Commercial	1,974	5.4
Office	434	1.2
Industrial	2,587	7.0
Public/Institutional	2,460	6.7
Open Space	4,603	12.5
Vacant/Agriculture	7,496	20.4
<b>Total</b>	<b>36,716</b>	<b>100</b>

*Source: City of Chandler*



Figure 3-12: Existing Land Use (2005)





## 3.2 Future Socio-Economic Conditions

The horizon year 2030 has been selected for analysis for this transportation study.

### 3.2.1 Population

Like the urban area of Maricopa County and the State of Arizona, Chandler has experienced substantial population growth over the last 25 years. The estimated 2030 resident population for the Chandler MPA is 283,792, as shown in Table 3-6. The projected total population in persons per square mile is shown on Figure 3-13. Greater population numbers compared to 2005 can be seen along Arizona Avenue, the Dobson Road/Elliott Road area, and in southern Chandler south of Queen Creek Road at Gilbert Road.

**Table 3-6: 2005 and 2030 Population Summary**

RAZ	Population (2005)	Population (2030)
310	52,825	54,960
315	39,659	40,762
316	36,110	40,251
317	33,027	34,914
325	33,108	43,470
327	11,201	23,598
328	30,143	45,837
TOTAL	236,073	283,792

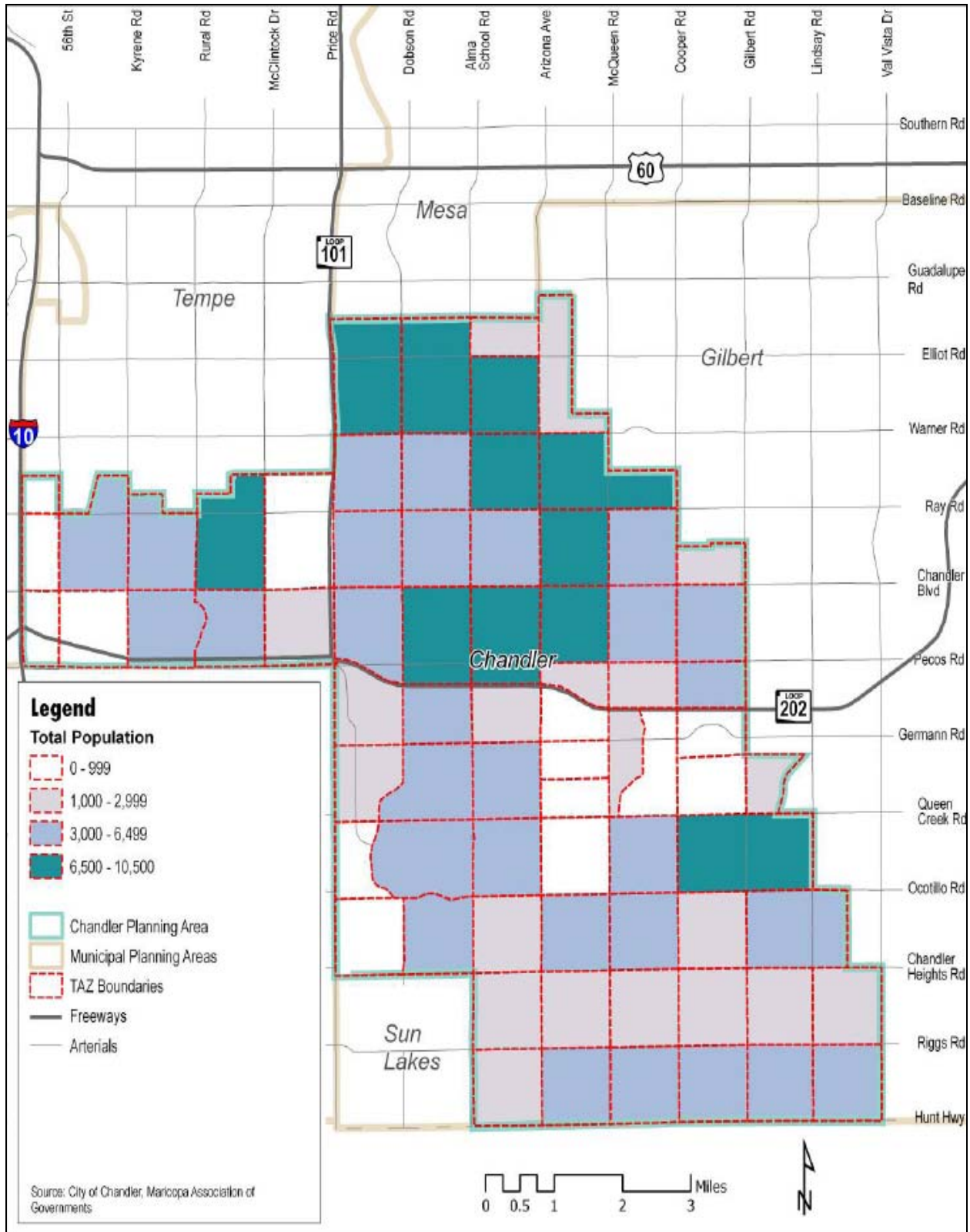
*Source: Socioeconomic Projections of Population, Housing and Employment by Municipal Planning Area and Regional Analysis Zone, Maricopa Association of Governments, May 2007*

Population estimates are an important element in the roadway modeling phase. These estimates are used to help estimate the level of roadway usage in future years and, thus, tell us what the expected traffic volumes may be. We then use these estimated future traffic volumes to make recommendations for improving the roadway system.





Figure 3-13: Projected Total Population by TAZ (2030)



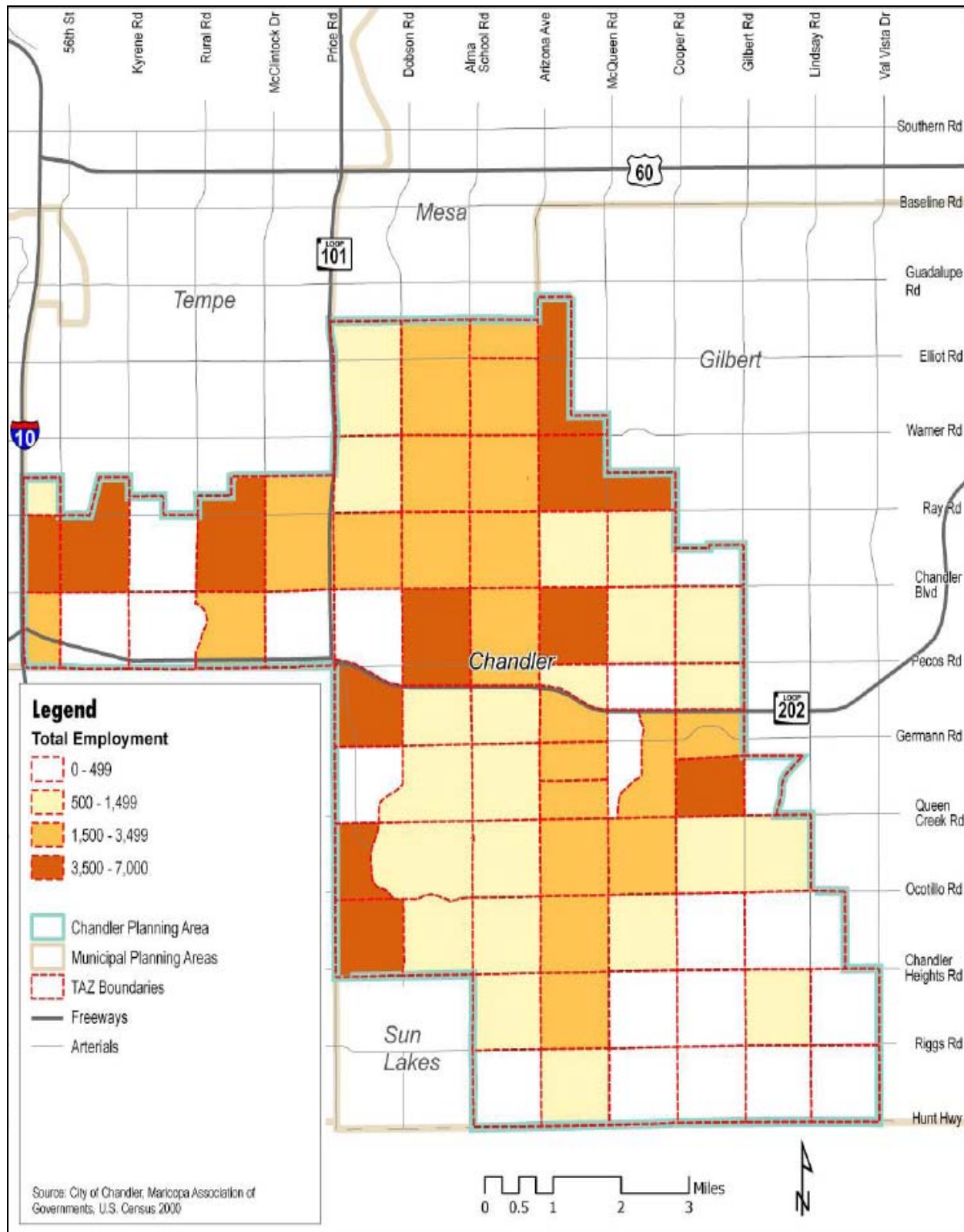


### **3.2.2 Future Employment and Employment Density**

The total number of persons employed within the Chandler MPA in 2005 was estimated to be 86,732. In 2030, the total number of persons employed is 178,116. The total employment by TAZ for 2030 is shown in Figure 3-14. The 2030 employment density in jobs per acre is shown in Figure 3-15. Table 3-7 shows an employment summary of the types of employment and totals for each type anticipated in the City of Chandler in 2030.

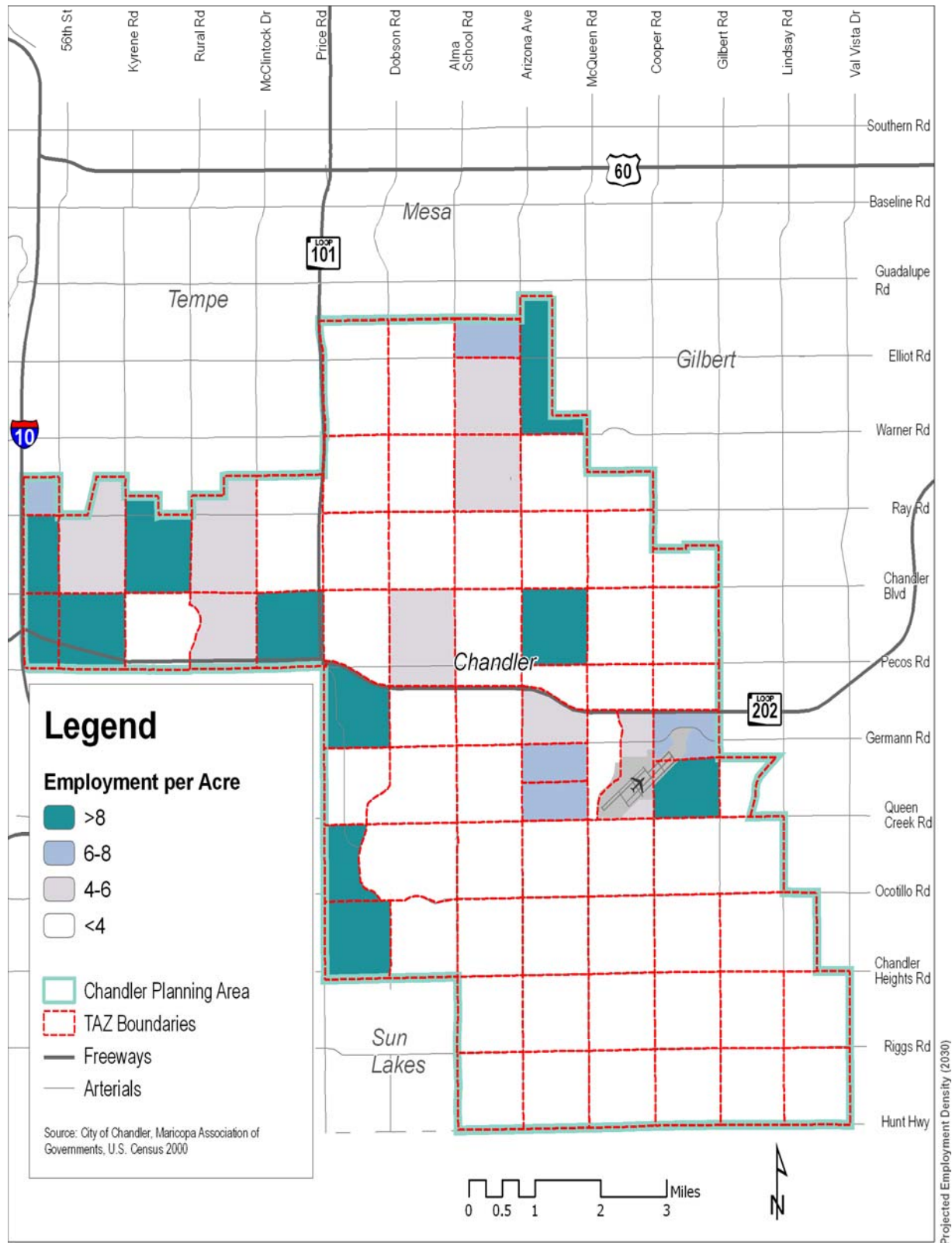


Figure 3-14: Total Employment by TAZ (2030)





**Figure 3-15: Projected Employment Density by TAZ (2030)**





**Table 3-7: Employment Summary**

RAZ	Total 2005	Total 2030	Retail 2005	Retail 2030	Office 2005	Office 2030	Indust. 2005	Indust. 2030	Public 2005	Public 2030	Other 2005	Other 2030
310	18,376	24,787	6,862	7,543	1,665	3,296	5,838	10,119	1,362	1,444	2,649	2,385
315	28,055	48,787	6,664	12,147	2,159	9,962	16,629	21,994	1,043	2,438	1,760	2,296
316	13,363	24,046	5,366	6,587	1,184	8,189	2,349	4,232	1,475	1,817	2,989	3,221
317	6,279	9,533	1,319	2,203	292	1,544	360	878	3,665	4,330	643	578
325	14,294	35,519	2,201	6,547	2,624	13,053	6,537	11,321	1,157	1,930	1,775	2,668
327	3,283	27,227	961	6,328	0	10,881	540	5,455	290	1,356	1,492	3,207
328	3,082	8,217	425	1,869	0	376	519	3,225	815	1,480	1,323	1,167
<b>TOTAL</b>	<b>86,732</b>	<b>178,116</b>	<b>23,798</b>	<b>43,224</b>	<b>7,924</b>	<b>47,301</b>	<b>32,572</b>	<b>57,174</b>	<b>9,807</b>	<b>14,795</b>	<b>12,631</b>	<b>15,622</b>

*Source: Socioeconomic Projections of Population, Housing and Employment by Municipal Planning Area and Regional Analysis Zone, Maricopa Association of Governments, May 2007*



### 3.2.3 Future Land Use

Land use plans in the City call for increases in all types of development and a decrease in the amount of land in the City devoted to agricultural uses. By the time of build out, residential land uses are projected to increase by more than 50%. While agricultural land uses decrease, the amount of land dedicated to open space will increase by 14% over existing conditions, industrial land uses will increase by 13%, commercial uses will increase by 8%, public/institutional uses will increase by almost 8% and office uses increase by almost 3%. The acreages of various land use categories at build out are shown in Table 3-8.

**Table 3-8: Land Use Comparison at Build Out**

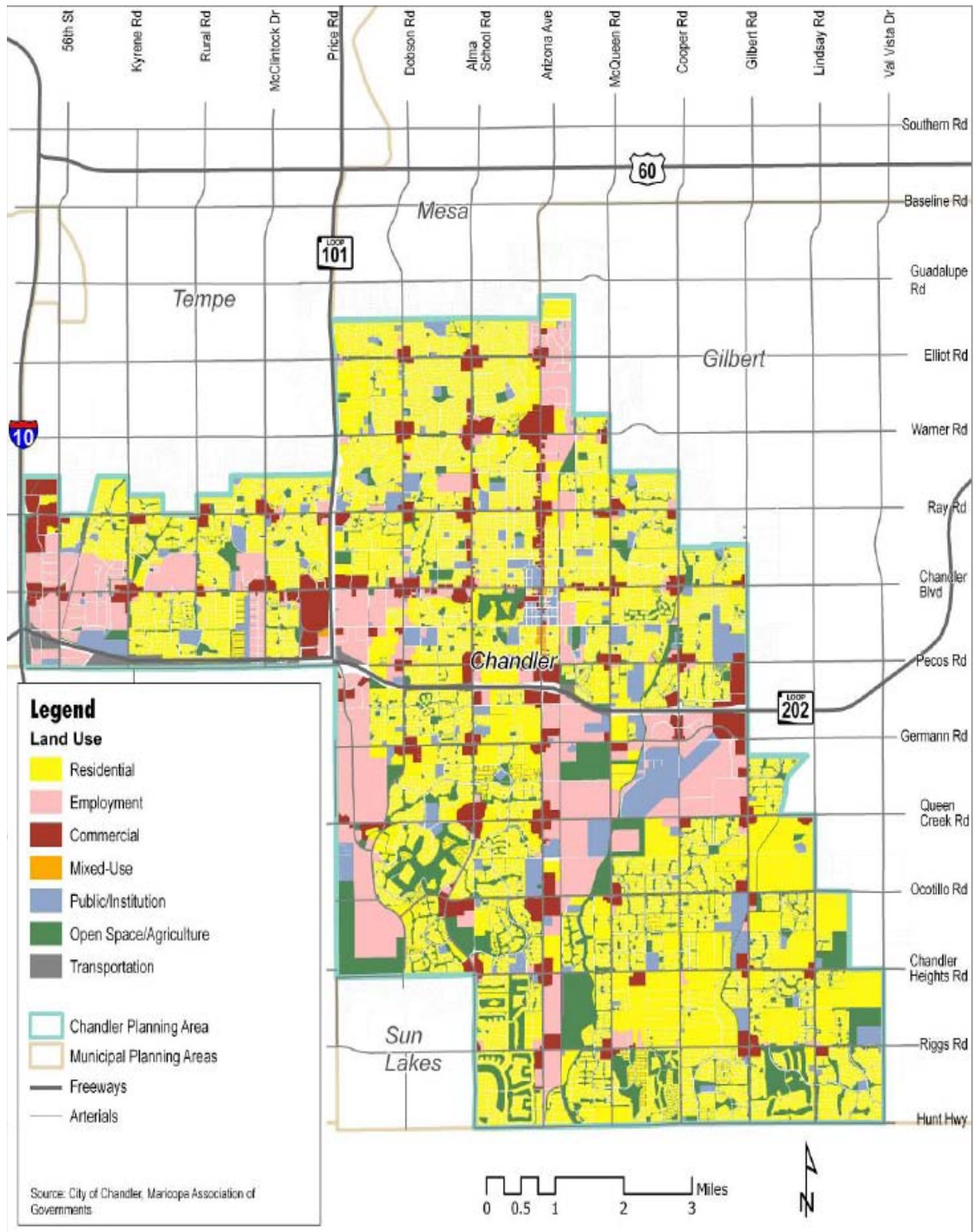
Land Use	Acres	Percent
Residential	19,655	53.5
Commercial	3,036	8.3
Office	945	2.6
Industrial	4,946	13.5
Public/Institutional	2,803	7.6
Open Space	5,321	14.5
Vacant/Agriculture	0	0
<b>Total</b>	<b>36,706</b>	<b>100</b>

*Source: City of Chandler*

The distribution of future land uses in 2030 is illustrated on Figure 3-16. The increase in commercial uses along Chandler Boulevard and south Arizona Avenue is distinct, as well as the conversion to employment uses around the Airpark. The Price Road corridor also increases in employment concentration.



Figure 3-16: Future Land Use (2030)





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## **SECTION 4.0 ROADWAY PLAN**

The arterial roadway system forms the backbone of the City's multi-modal transportation system. A roadway is more than curb, gutter, and pavement built to serve automobiles. The right-of-way is often shared by several different transportation modes including automobiles, trucks, buses, bicyclists, and pedestrians. Improvements to the roadway system must balance the needs of all modes. The roadway system provides access to the activity centers, supports new development and provides for recreational travel. While widening the roadways adds capacity, it cannot eliminate congestion. The modern roadway system provides a combination of integrated components that can work together to manage congestion.

### **4.1 Existing Roadway System**

Several measures of existing roadway conditions have been selected for documentation including the regional facilities, arterial street system, traffic volumes, traffic operations and crash history. The review and analysis of these conditions provide the basis for the identification of the improvements needed in the existing system and analysis of future conditions.

#### **4.1.1 Regional Facilities**

Regional transportation facilities that directly affect the City of Chandler include elements of the regional freeway system, roads of regional significance, and transit facilities. The transit facilities are described in Section 5.0. The freeways and regional roadway network are described below.

##### **Freeway System and State Highways**

The City of Chandler is served by a regional freeway system that passes through the City and along its boundaries. The freeways that serve the City are briefly described below.

Interstate 10 (Maricopa Freeway) – I-10 is an east-west interstate highway that actually exists in a north-south orientation on the western edge of Chandler. The service interchanges that serve Chandler are present at Elliot Road, Warner Road, Ray Road, Chandler Boulevard, Queen Creek Road and Riggs Road. Freeway-to-freeway system interchanges exist at US 60 (Superstition Freeway) and Loop 202 (Santan Freeway).

US Highway 60 (Superstition Freeway) - US 60 is an east-west freeway located just north of the Chandler city limits between Baseline Road and Southern Avenue. It extends from I-10 into Pinal County to the east. The traffic interchanges on arterials that serve Chandler exist at Priest Drive, Rural Road, McClintock Drive, Dobson Road, Alma School Road, Arizona Avenue, McQueen Road, Cooper Road, Gilbert Road and Val Vista Drive. A freeway-to-freeway system interchange connects US 60 and Loop 101 (Price Freeway) and I-10 and US 60.



Loop 101 (Price Freeway) – Loop 101 is a regional freeway facility that runs north-south in the City of Chandler along the Price Road alignment from Loop 202 north into Tempe and Scottsdale. The traffic interchanges at Elliot Road, Warner Road, Ray Road, Chandler Boulevard and Price Road (south of Loop 202) provide access to the City. The system interchanges connect Loop 101 with Loop 202 and US 60.

Loop 202 (Santan Freeway) – Loop 202 is a regional freeway facility that runs east-west in the City of Chandler along the Pecos Road alignment from I-10 (on the west end) east into Gilbert and Mesa. The traffic interchanges at Kyrene Road, McClintock Drive, Price Road, Dobson Road, Alma School Road, Arizona Avenue, McQueen Road, Cooper Road and Gilbert Road provide access to the City. The system interchanges connect Loop 202 with I-10 and Loop 101.

State Route 87 (Arizona Avenue) – State Route 87 is a regional arterial facility that runs north-south in City of Chandler. The segment of Arizona Avenue between Western Canal (half-mile north of Elliot Road) and Ocotillo Road is owned and maintained by the City of Chandler. The remaining segments of Arizona Avenue (between Ocotillo Road and Hunt Highway) are maintained by the Arizona Department of Transportation.

### **Roads of Regional Significance**

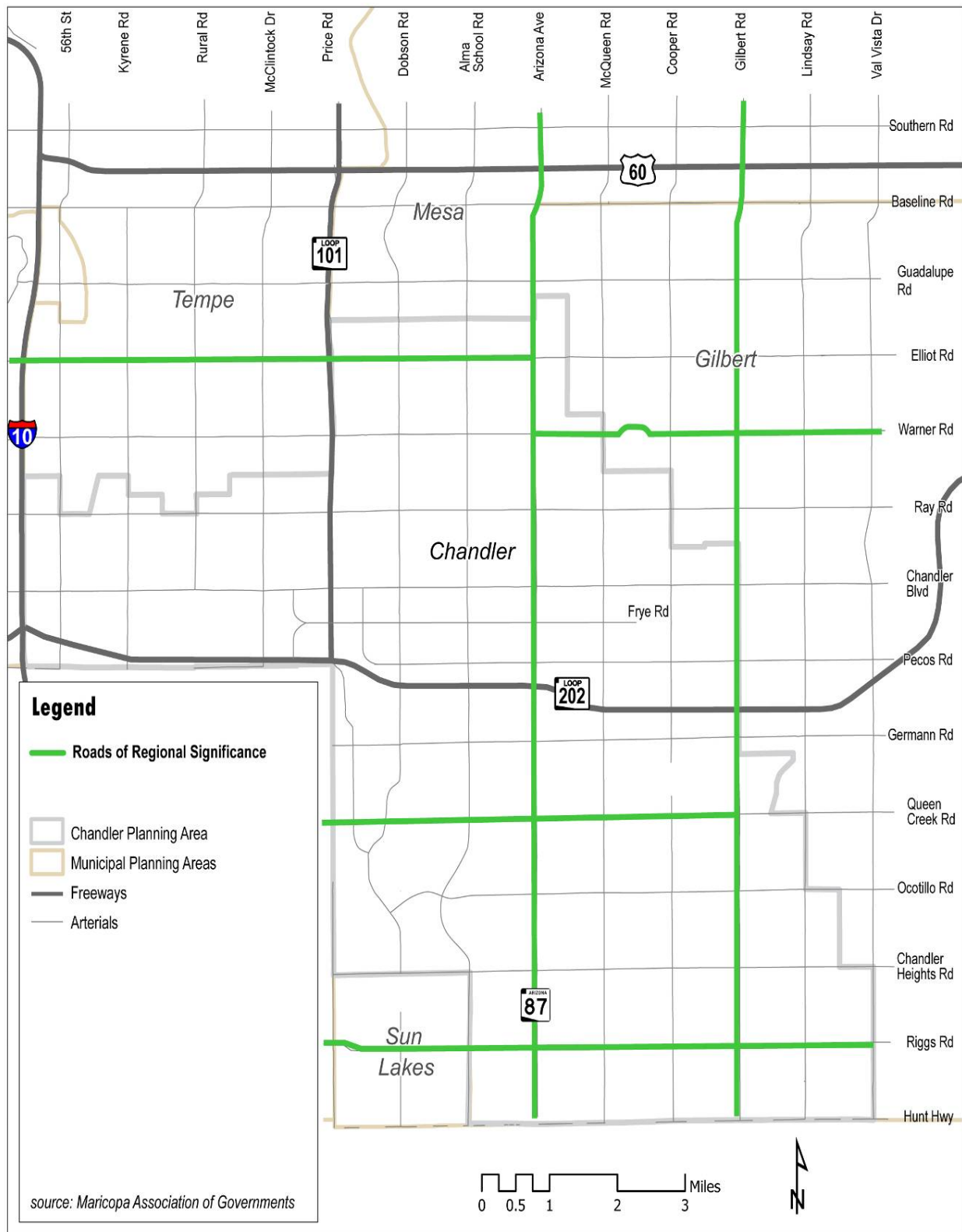
The Maricopa Association of Governments (MAG) Regional Council adopted the Roads of Regional Significance (RRS) concept in 1991. It was approved by the Maricopa County Board of Supervisors in 1992. RRS are designed to complement the freeway system and are located three to six miles apart. These facilities would have higher design standards to enhance regional mobility. Within the City of Chandler, the RRS include:

- Arizona Avenue (Elliot Road to Loop 202)
- Gilbert Road (south of Ray Road to Riggs Road)
- Elliot Road (I-10 to Arizona Avenue)
- Warner Road (Arizona Avenue to McQueen Road)
- Queen Creek Road (Price Road to Gilbert Road)
- Riggs Road (Alma School Road to Val Vista Drive)

The regional freeway and RRS facilities are illustrated in Figure 4-1.



Figure 4-1: Existing Regional Roadway Facilities





## 4.1.2 Arterial Street System

### Existing Roadway System

The Chandler roadway system is comprised of arterial roadways located on section lines that form a grid network that is the backbone of the City transportation system. The network includes the roadways that have two, four or six through lanes with center two-way left turn lanes or raised medians, and various configurations at the major intersections. Figure 4-2 and 4-3 illustrate the existing number of through lanes on the arterial roadways in 2007 and 2009, respectively. The majority of the roadway system in the southern part of the City is comprised of two-lane roadways which is a representation of the existing undeveloped areas. The intersection improvements that were completed at the arterial-arterial intersections are also depicted in the figures.

There are currently 202 signalized intersections in the City. The signals are predominantly located in the northern and western portions of the City, which correspond with higher levels of development and traffic volumes. Currently, the City installs five to eight traffic signals each year. The locations of existing traffic signals are shown in Figure 4-4.

The City has a combination of a fiber-optic and twisted pair copper inter-connect network serving the traffic signals and is connected to the City's Traffic Management Center, where the traffic signals are monitored for operations and signal coordination. The majority of the signalized intersections have video cameras to detect vehicles. The remaining locations have inductive loops installed in the pavement.



Figure 4-2: Number of Through Lanes (2007)

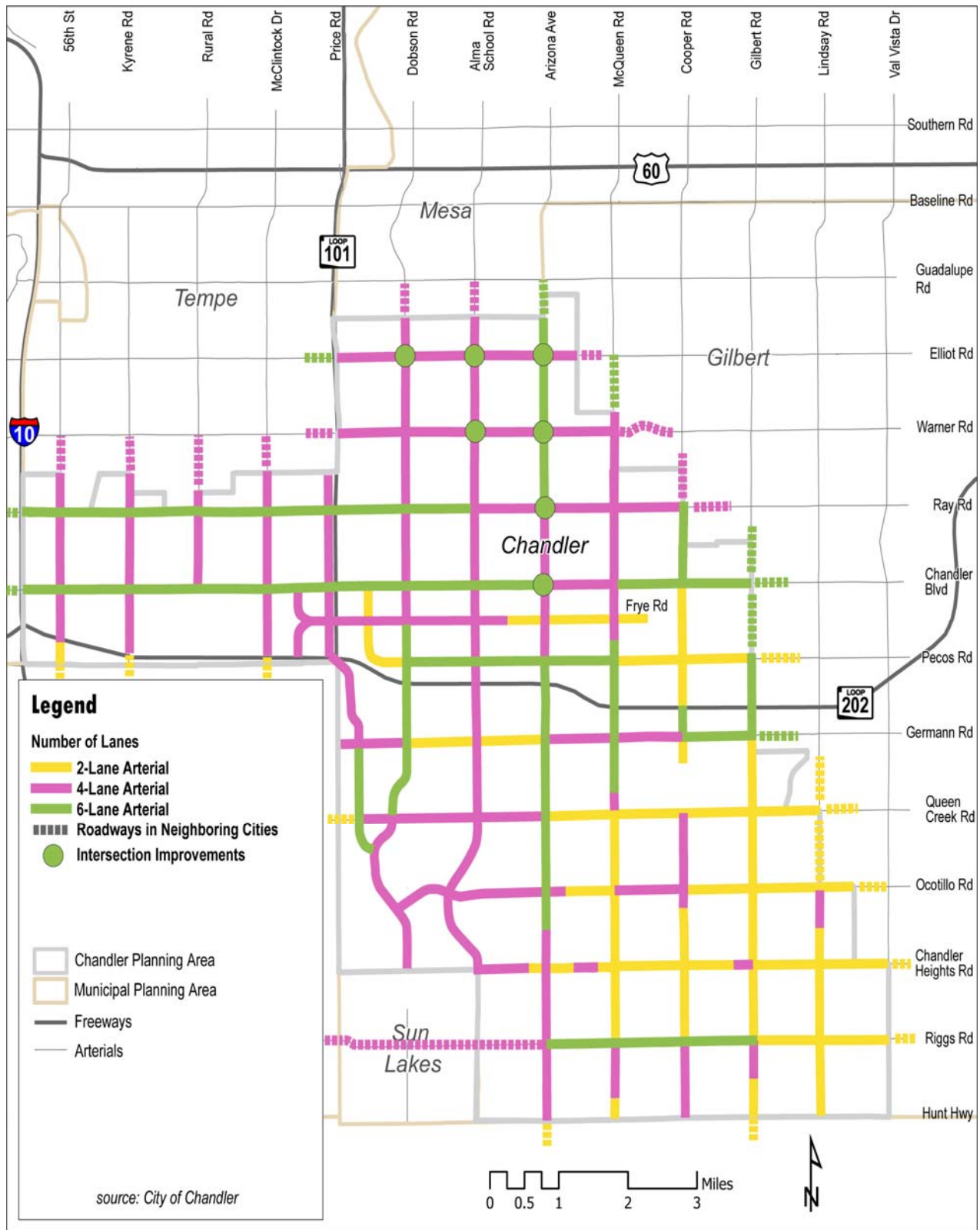
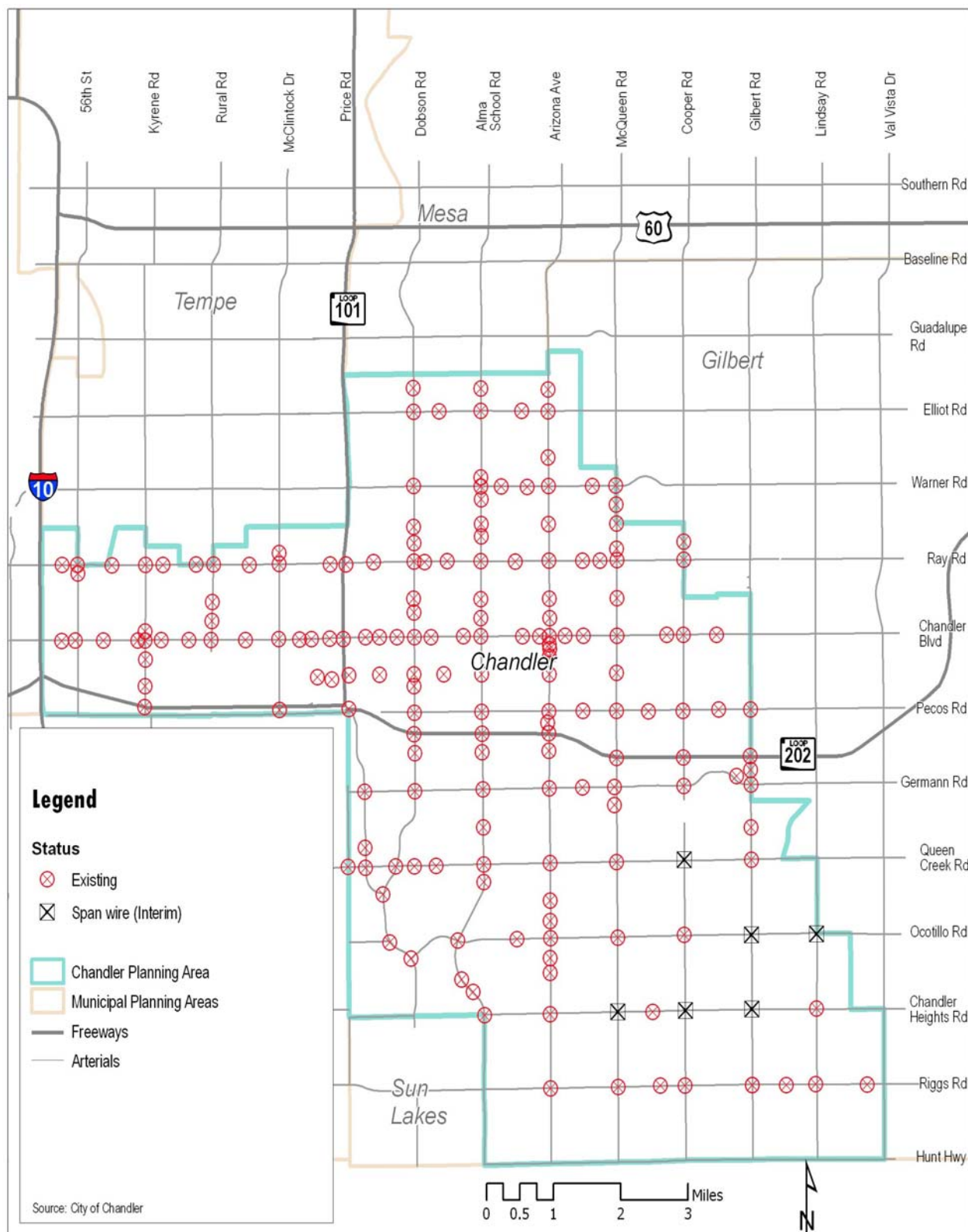






Figure 4-4: Traffic Signals (2009)





## Existing Travel Characteristics

The City of Chandler collects traffic counts on its major roadways each year. These counts include 24-hour traffic volumes at mid-block segments and at intersection approaches.

Table 4-1 summarizes the roadway segments with the highest Average Daily Traffic (ADT) recorded in 2007. High traffic volumes exist on the east-west roadways closer to Loop 101 and roadways in the proximity of I-10. Alma School Road in the vicinity of Loop 202 also has a significant amount of traffic.

**Table 4-1: Roadways with Highest Existing ADT Volumes 2007**

Roadway	From	To	Traffic Volume (vehicles/day)
Warner Road	Price Road	Dobson Road	42,000
Ray Road	McClintock Road	Price Road	41,200
Ray Road	Price Road	Dobson Road	39,500
Chandler Boulevard	I-10	56th Street	39,800
Chandler Boulevard	56th Street	Kyrene Road	38,600
Chandler Boulevard	McClintock Road	Price Road	41,000
Chandler Boulevard	Price Road	Dobson Road	39,300
Alma School Road	Pecos Road	Germann Road	38,900
Alma School Road	Germann Road	Queen Creek Road	39,000
Arizona Avenue	Elliot Road	Warner Road	38,300





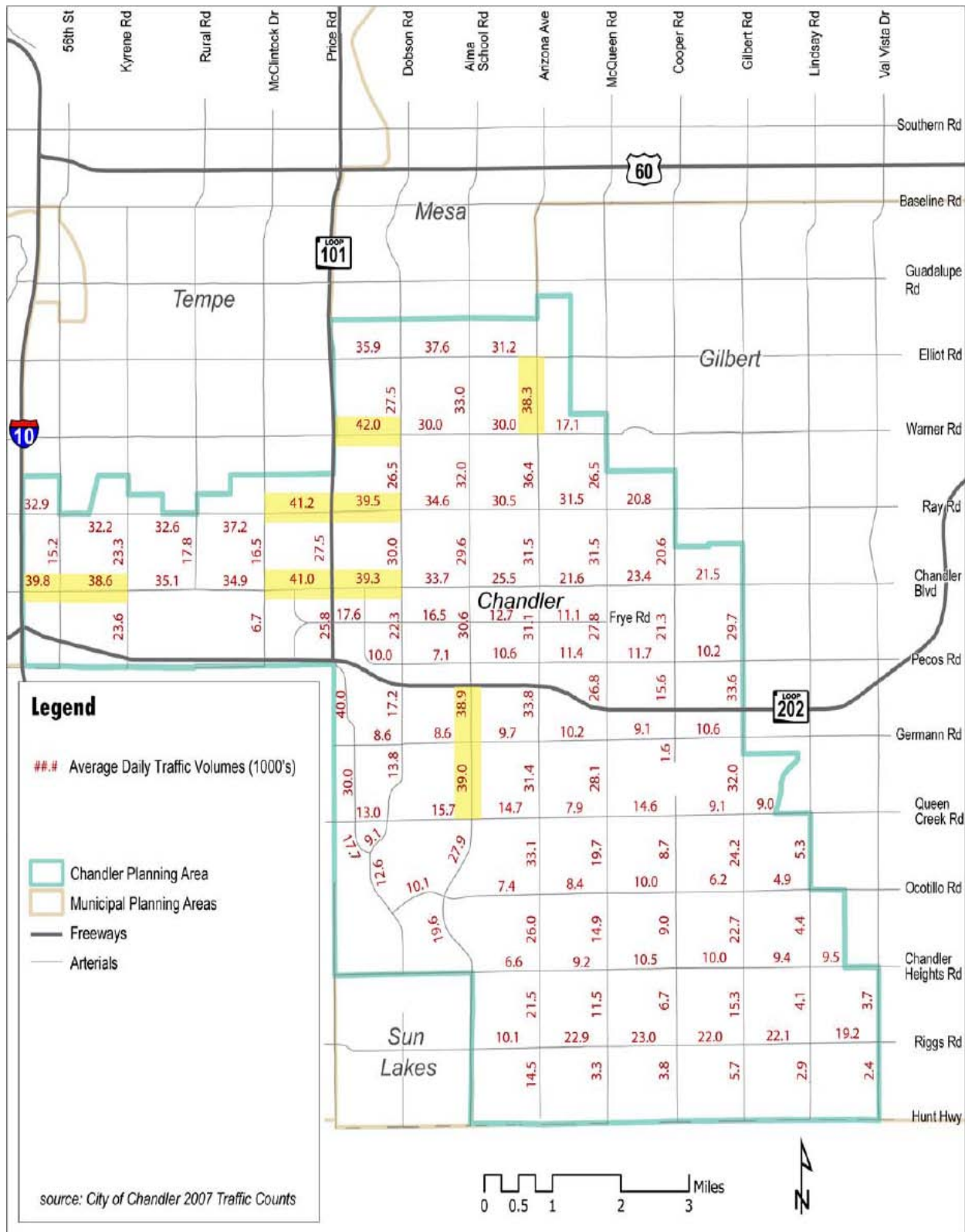
The 2007 roadway segment Average Daily Traffic (ADT) volumes and intersection approach daily traffic volumes are shown in Figure 4-5 and Figure 4-6, respectively. The intersections with highest existing traffic volumes are in the northern part of the City and closer to Loop 101. These locations are identified in Table 4-2. The volume shown at each intersection is the sum of the traffic volumes on all approaches to the intersection. The majority of the intersections with highest approach volumes are at the freeway traffic interchanges and in the northern parts of the City.

**Table 4-2: Intersections with Highest Approach Volumes 2007**

Intersection		Volume (vehicles/day)
Price Road	Elliot Road	63,000
Price Road	Warner Road	73,600
Price Road	Ray Road	63,200
Price Road	Chandler Boulevard	76,600
Dobson Road	Elliot Road	62,000
Dobson Road	Ray Road	66,800
Alma School Road	Elliot Road	73,600
Alma School Road	Ray Road	61,500
Arizona Avenue	Elliot Road	66,600
Arizona Avenue	Warner Road	65,600

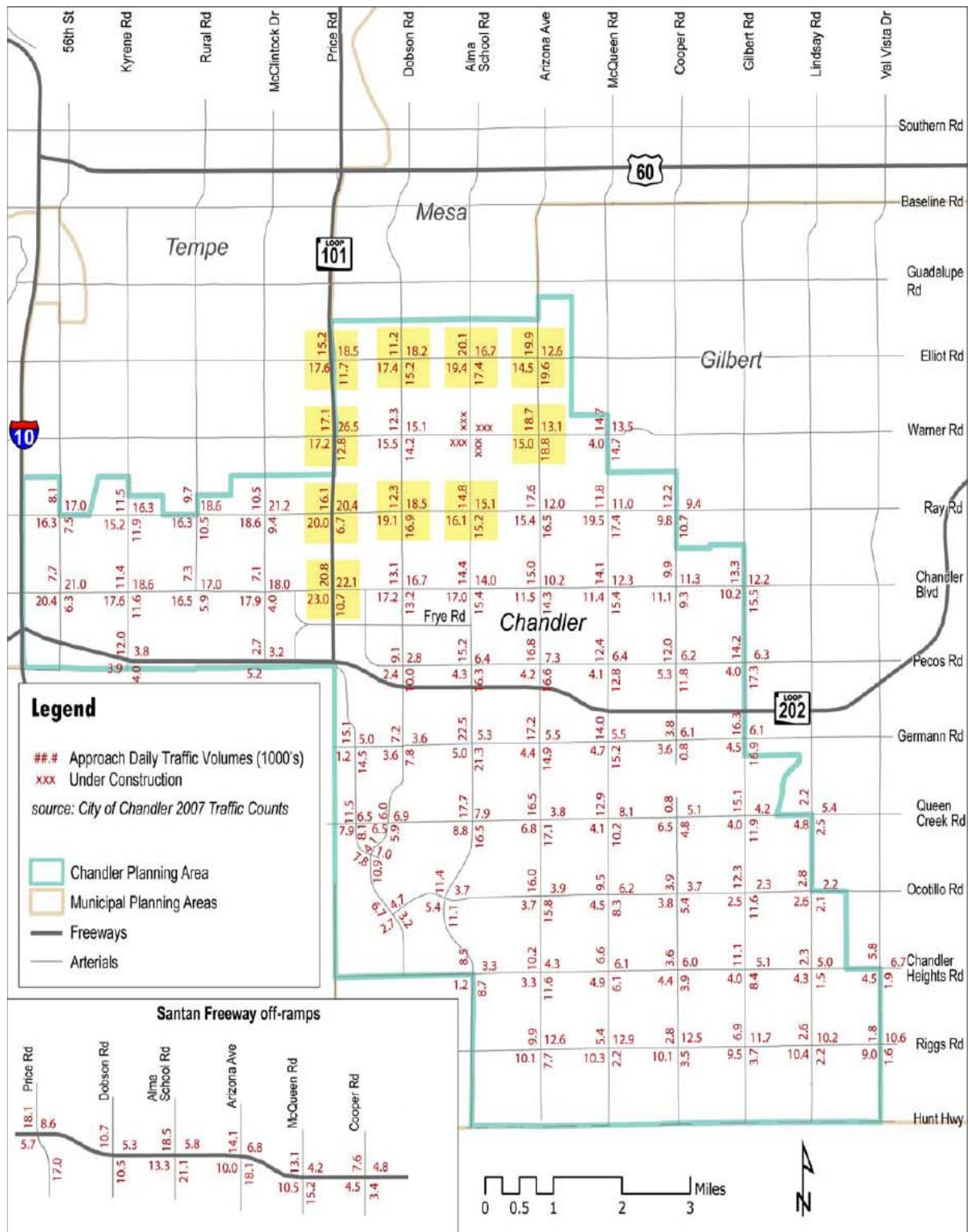


Figure 4-5: Existing Roadway Segment Average Daily Traffic (2007)





**Figure 4-6: Existing Intersection Approach Daily Traffic Volumes (2007)**





## Crash History

Historical crash data was obtained from the City of Chandler. Table 4-3 shows the number of severe crashes from 2001 through 2006. Figure 4-7 displays the historical data graphically. Out of the total number of reported crashes, approximately 30% of the crashes were injury crashes and less than one percent were fatal crashes.

Arizona DPS completes a Traffic Accident Analysis Report every two years. The City of Chandler uses this information to help develop recommendations for improving the safety of intersections throughout the city. Traffic crash data is used to help identify exactly which intersections need improvements to reduce crashes. A Traffic Intersection Study is then completed on each intersection to determine which improvements, if any, can be made to make the intersection safer.

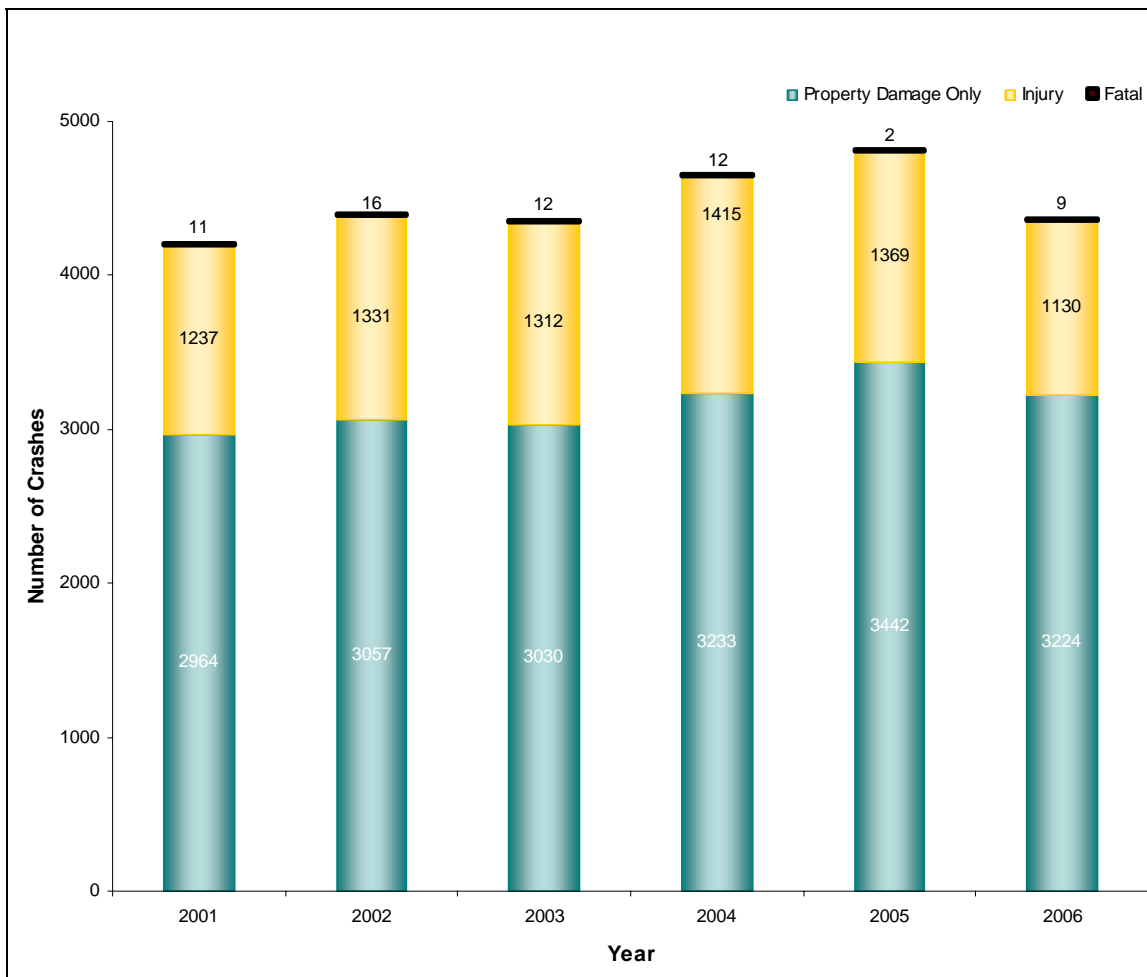
**Table 4-3: Traffic Crash Summary 2001-2006**

Year	Non-Injury	Injury	Fatal	Total
2001	2964	1237	11	4212
2002	3057	1331	16	4404
2003	3030	1312	12	4354
2004	3233	1415	12	4660
2005	3442	1369	2	4813
2006	3224	1130	9	4363

*Source: City of Chandler*



Figure 4-7: Traffic Crash Summary 2001-2006



In addition to the standard practice of analyzing historical crash data for trends and probable causes; crash rates are also calculated for comparison purposes. Crash rates are an effective tool to present a complete picture of accident history at a particular location as they combine crash frequency with vehicle exposure, or the traffic volumes observed. Crash rates are expressed in "Crashes per Million Entering Vehicles" (MEV) at intersections.



Table 4-4 summarizes the first eight intersections with high collision rates within the City of Chandler. Figure 4-8 shows the intersections with high collision rates. The high collision rates were observed in the northern and central parts of the City and are consistent with the intersections experiencing high traffic volumes.

**Table 4-4: Intersections with High Collision Rates (2006 Data)**

Rank	Intersection		Number of Collisions				Daily Traffic Volume Entering the Intersection	Crash Rate (crashes /MEV)
			Fatal	Injury	PDO <sup>3</sup>	Total		
1 <sup>1</sup>	Arizona Avenue	Ray Road	2	20	40	62	62,126	2.73
2	Alma School Road	Ray Road	0	19	43	62	64,328	2.64
3 <sup>2</sup>	Alma School Road	Warner Road	0	8	43	51	65,561	2.13
4	56th Street	Chandler Boulevard	0	12	25	37	47,743	2.12
5 <sup>2</sup>	Arizona Avenue	Warner Road	0	8	40	48	65,608	2.00
6 <sup>1</sup>	Arizona Avenue	Elliot Road	0	12	35	47	66,215	1.95
7	Dobson Road	Ray Road	0	17	29	46	69,698	1.85
8	McClintock Drive	Ray Road	0	14	23	37	58,606	1.73

Source: City of Chandler

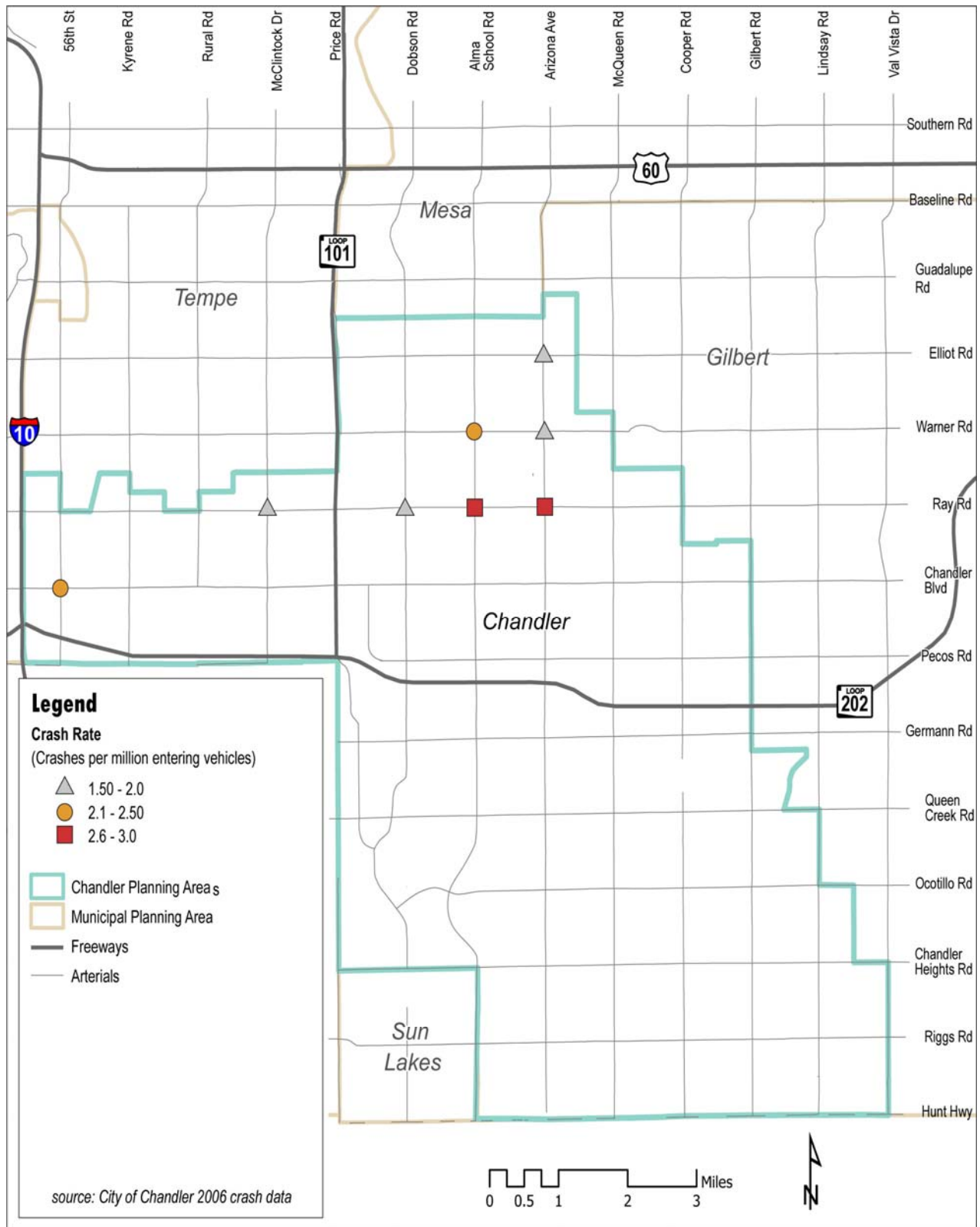
<sup>1</sup> The intersections were under construction in 2006

<sup>2</sup> The intersections were improved between 2006 and the time of this report

<sup>3</sup> PDO: Property Damage Only



Figure 4-8: Intersections with High Collision Rates





## Roadway Segment Level of Service

The efficiency of the roadway system components, such as intersections and roadway segments, can be described by Level of Service (LOS), which is a term used to describe the degree of traffic congestion. LOS can be measured for various components of the roadway system, including the roadway segments, signalized intersections, and unsignalized intersections. The capacity constraint of an arterial street is at the major signalized intersections which contribute to the reduced travel speeds and delays on a corridor. The roadway segment LOS was evaluated as part of this report.

The vehicle capacity of a roadway segment can be defined as “the maximum number of vehicles that can pass a given point during a specified period under prevailing roadway, traffic, and control conditions.” Capacity is normally considered the point where LOS changes from E to F. The capacity of a roadway segment can be estimated using the maximum hourly service flow rates for multi-lane roadways presented in the Highway Capacity Manual. The capacity of a roadway segment is primarily influenced by the number of through and left turn lanes at the intersections, spacing of the signalized intersections, available green time for the through movements, proportion of peak hour traffic and directional distribution of the traffic stream.

The various levels of service, which range from A to F, are generally defined in the Highway Capacity Manual, Special Report 209, Transportation Research Board. The Highway Capacity Software (HCS+) which is a software version of the Highway Capacity Manual (HCM), distributed by McTrans, was used to determine the roadway segment LOS. ARTPLAN, a program module in HCS+, provides roadway LOS as a function of the average daily volumes, peak hour content (K-factor, the portion of ADT that occurs during the peak hour), directional distribution, type of facility (number of through lanes) and operational characteristics (signal spacing per mile, saturation flow rate, and signal timing). The service volume thresholds were determined for each LOS for a roadway with a given number of through lanes by using the available traffic data for the City roadways. LOS D is generally considered as the threshold of acceptable conditions in an urban area and was the level selected for this study.

Table 4-5 shows the capacity criteria in terms of average delay for a signalized intersection as described in the HCM.





**Table 4-5: Capacity Criteria for Signalized Intersections**

Level of Service	Average Vehicle Delay (sec/veh)
A	Less than 10.0
B	10.1 – 20.0
C	20.1 – 35.0
D	35.1 – 55.0
E	55.1 – 80.0
F	Over 80.0

The range of ADT volumes which provides different LOS for a roadway facility with a given number of lanes is presented in Table 4-6. The LOS thresholds were also determined for a four-lane roadway with widened arterial street intersections. It was estimated that a four-lane arterial with widened intersections provides an additional 30 percent of roadway capacity when compared to a four-lane arterial. The intersection improvements were assumed to include an additional through lane through the intersection, two left turn lanes and a right turn lane on each approach.

**Table 4-6: LOS ADT Thresholds**

Functional Classification	Number of Through Lanes	LOS D	LOS E	LOS F >
Arterial	2	12,200-15,300	15,301-16,100	16,100
	4	27,500-32,200	32,201-33,900	33,900
	4-lanes with 6-lane intersection*	35,100-37,100	37,100-42,900	42,900
	6	42,200-48,500	48,501-50,900	50,900

*Source: ARTPLAN, HCS+ version 5.21*

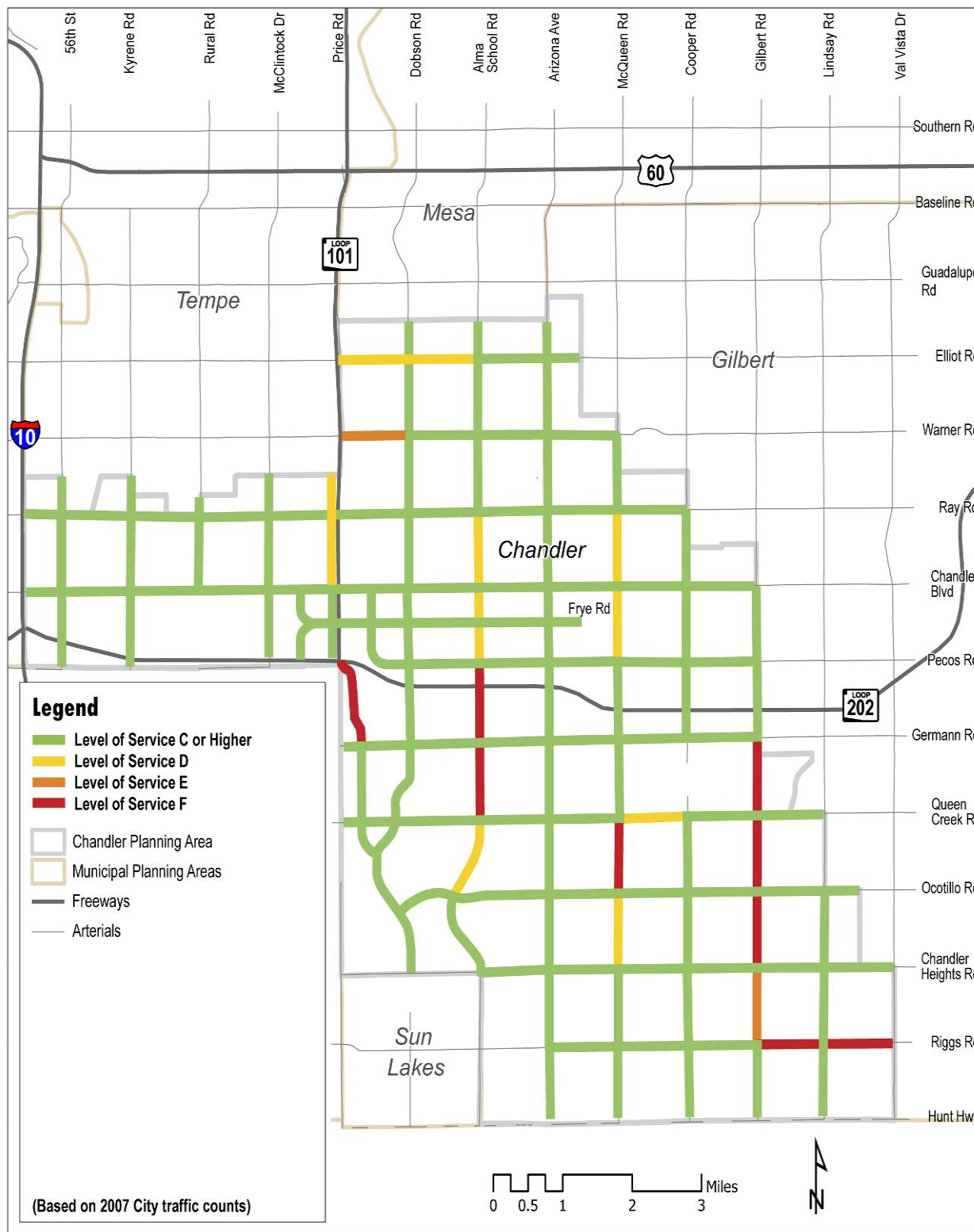
*\*Roadway segment has four through lanes, but major intersections are improved to include six through lanes, dual left turn lanes and right turn lane on the roadway approaches*

The roadway LOS for the existing roadway network with current ADT volumes is presented in Figure 4-9.

Some of the roadway segments in the northern and eastern parts of the City are operating at or near capacity. The decreased LOS is also observed in the developed areas closer to Loop 101. Some of the roadway segments in the southern part of the City are operating at or near capacity due to continuous growth in the area.



Figure 4-9: 2009 Roadway Segment Level of Services





## 4.2 Future Roadway Conditions

The following section describes the future roadway network and traffic operations for forecast year 2030.

### 4.2.1 Planned Regional Facilities

The MAG Regional Transportation Plan (RTP) is a comprehensive, multi-modal and regionally coordinated transportation improvement plan. The plan includes improvements to freeways/highways, arterial roadways, mass transit, bicycles and pedestrian facilities, and special needs transportation. In addition, key transportation-related activities are addressed, such as transportation demand management, system management, safety, security and air quality conformity analysis. The significant freeway improvements within the City of Chandler that are funded in the MAG RTP (July 2007 Update) and remain to be completed include:

- I-10: One additional General Purpose
- Loop 101: One additional General Purpose
- Loop 202: One additional General Purpose and one HOV lane in each direction

### 4.2.2 2030 Traffic Forecasts

The MAG regional transportation models were developed originally in 1983-84 and have been continuously updated since then. Travel Demand Modeling is performed using EMME/2 program for both highway and transit roadway networks assignments. These models forecast daily and peak hour vehicular traffic and transit ridership for the MAG area.

The MAG travel demand model utilizes the land use elements of adopted general comprehensive plans for the cities and towns within the metropolitan planning area as the basis for its traffic forecasts. A series of geographic areas were used to locate the incremental population and employment growth within the Phoenix Metropolitan Area. These areas included Municipal Planning Areas (MPAs), which typically correspond with the incorporated boundaries of cities and towns; Regional Analysis Zones (RAZs), which are geographical subsets of the MPAs; and Traffic Analysis Zones (TAZs), which can be as small as one square mile.

MAG provided the 2007 and 2030 ADT volumes from the travel demand model. The raw 2030 ADT volumes obtained from MAG travel demand model runs were post-processed to adjust for future socioeconomic conditions.

The adjusted 2030 ADT volumes were obtained by adding the difference of MAG future (2030) and existing (2007) ADT volumes to the field collected (2007) ADT volumes. In addition to obtaining travel forecasts consistent with future socioeconomic conditions, this procedure assures that the existing traffic patterns are accounted into the system evaluation.



The roadway segments with 2030 ADT volumes greater than 40,000 vehicles are listed in Table 4-7. The roadway segments with 2030 ADT volumes are shown in Figure 4-10.

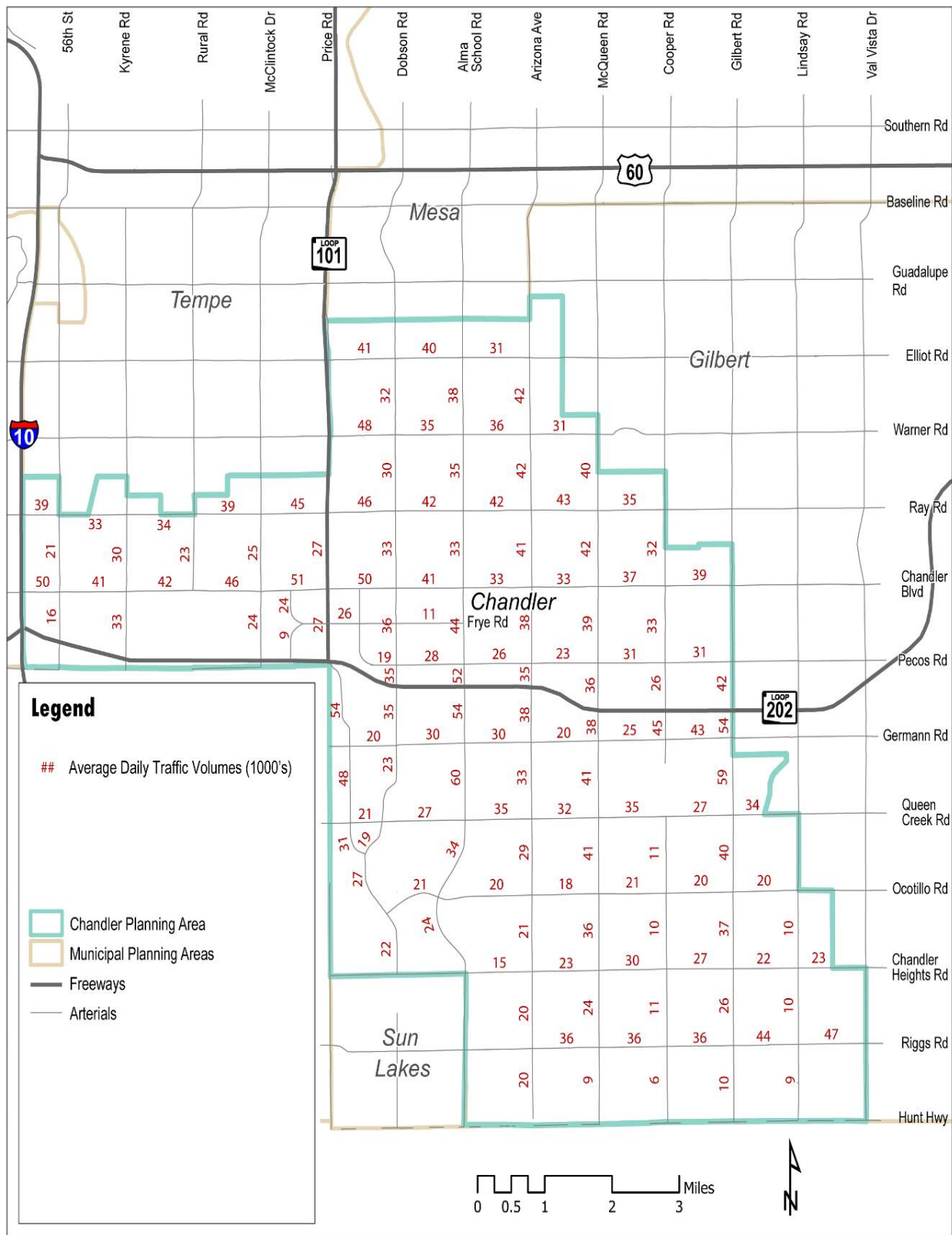


**Table 4-7: Roadway Segments with ADT of 40,000 Vehicles and Higher**

Roadway	From	To	Traffic Volume (vehicles/day)
Price Road	Loop 202	Germann Road	54,000
Price Road	Germann Road	Queen Creek Road	48,000
Alma School Road	Chandler Boulevard	Pecos Road	44,000
Alma School Road	Pecos Road	Germann Road	54,000
Alma School Road	German Road	Queen Creek Road	60,000
Arizona Avenue	Elliot Road	Warner Road	42,000
Arizona Avenue	Warner Road	Ray Road	42,000
Arizona Avenue	Ray Road	Chandler Boulevard	41,000
McQueen Road	Warner Road	Ray Road	40,000
McQueen Road	Ray Road	Chandler Boulevard	42,000
McQueen Road	Germann Road	Queen Creek Road	40,000
McQueen Road	Queen Creek Road	Ocotillo Road	42,000
Gilbert Road	Pecos Road	Germann Road	42,000
Gilbert Road	Germann Road	Queen Creek Road	59,000
Gilbert Road	Queen Creek Road	Ocotillo Road	40,000
Elliot Road	Loop 101	Dobson Road	41,000
Elliot Road	Dobson Road	Alma School Road	40,000
Warner Road	Loop 101	Dobson Road	48,000
Ray Road	McClintock Road	Loop 101	45,000
Ray Road	Loop 101	Dobson Road	46,000
Ray Road	Dobson Road	Alma School Road	42,000
Ray Road	Arizona Avenue	McQueen Road	43,000
Chandler Boulevard	I-10	56th Street	50,000
Chandler Boulevard	56th Street	Kyrene Road	41,000
Chandler Boulevard	Kyrene Road	Rural Road	42,000
Chandler Boulevard	McClintock Drive	Loop 101	51,000
Chandler Boulevard	Loop 101	Dobson Road	50,000
Chandler Boulevard	Dobson Road	Alma School Road	41,000
Germann Road	Cooper Road	Gilbert Road	43,000
Riggs Road	Gilbert Road	Lindsay Road	44,000
Riggs Road	Lindsay Road	Val Vista Drive	47,000



Figure 4-10: 2030 Average Daily Traffic Volumes





## Roadway Segment Level of Service

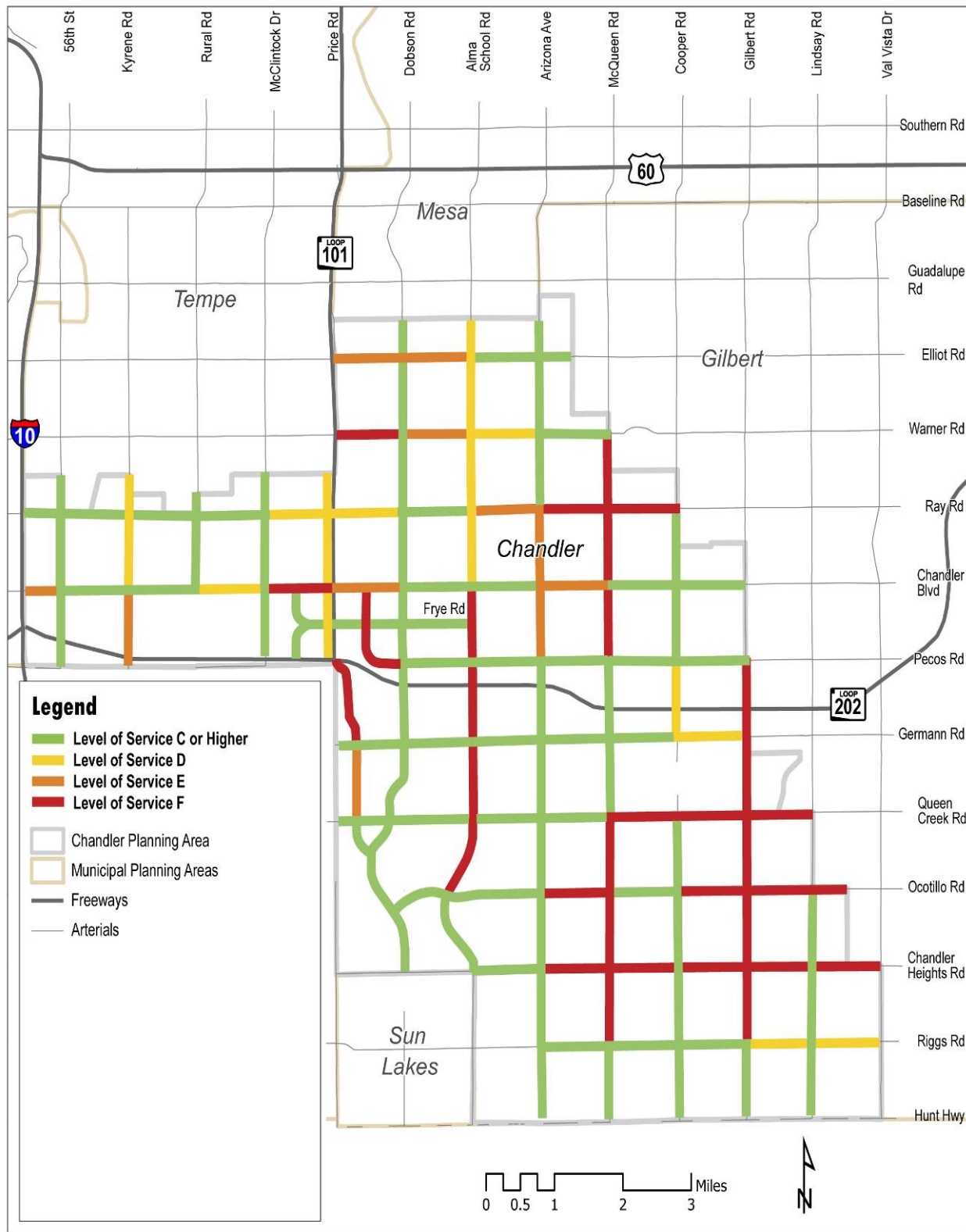
The 2030 roadway segment LOS was determined using the existing roadway configuration and 2030 ADT forecasts. The methodology described in Section 4.1, Existing Roadway System, was used to determine the LOS.

The 2009 roadway network with recently improved roadways and 2030 ADT forecasts shown in Figures 4-3 and 4-10, respectively, were used to determine the future LOS with no roadway improvements. The LOS threshold values identified in Table 4-6 were used to determine the future roadway LOS. Figure 4-11 shows what the 2030 level of service would be with the existing (2009) roadway network.

The reduced LOS (E or F) is predominant in southern parts of the City where the majority of the existing roadway system consists of two-lane roadways. The roadway segments closer to the freeway system are also anticipated to operate at reduced LOS (Price Road, Alma School Road, Chandler Boulevard, and Gilbert Road).



Figure 4-11: 2030 Level of Service based on 2009 Roadway







## 4.3 Recommended Roadway System

There are two primary components in developing an effective roadway system. One is the capital component, which is the construction or improvement of a roadway and includes associated features such as landscaping, lighting, traffic signals, and other enhancements. The other component is the operation and maintenance of the roadway system which includes the pavement preservation and rehabilitation, traffic operations, traffic safety and other roadway upgrades.

The preferred roadway system plan incorporates a combination of different types of improvement projects that will address many of the capacity needs and system continuity requirements. The following sections identify the basis of roadway improvements and draft implementation program that could occur over a period of 20 years. The actual implementation will depend on a number of factors including available funding and development patterns.

### 4.3.1 Basis of Roadway Improvements

The roadway improvements are recommended based on the LOS of existing roadway network with the 2009 and 2030 ADT volumes and the City's desire to maintain a minimum LOS D, and at select locations a LOS E.

**Existing Two-Lane Roadway:** The existing two-lane arterials do not meet the City's standard major or minor arterial street cross-sections and are inadequate to serve the vehicles, pedestrians and bicyclists. These two-lane roadways require complete reconstruction to add travel lanes and a bike lane and sidewalk on each approach. The existing two-lane roadways will be improved to four or six-lane facilities to provide the desired LOS with forecasted traffic volumes. **The existing two-lane roadways operating at acceptable LOS should be widened to four-lanes or six-lanes to provide safe driving conditions and accommodate multi-modal traffic (bicycle and pedestrian).**

**Existing Four-Lane Roadway:** If a roadway segment ADT volume is less than the threshold volume for LOS D, then a four-lane roadway is considered adequate. If the roadway segment's ADT forecast is more than the threshold volume for LOS D, then a six-lane roadway or improvements at the arterial intersections are needed to provide acceptable LOS. However, **at select locations within City of Chandler, a LOS E will be acceptable due to the extremely high cost of purchasing the right-of-way needed to widen the roads.** These locations include:

- Arizona Avenue in the Downtown area
- Alma School Road, from Elliot Road to Chandler Boulevard
- Dobson Road, from Elliot Road to Chandler Boulevard
- Elliot Road, from Price Road to Arizona Avenue
- Warner Road, from Price Road to Arizona Avenue
- Frye Road at Chandler Fashion Center



**Existing Six-Lane Roadway:** If a roadway segment ADT forecast volume is more than the threshold volume for LOS D, then a six-lane roadway will not completely serve the expected traffic demand. **Alternate modes of transportation (e.g. mass transit, van pool, pedestrian and bicycle) should be evaluated to accommodate the unmet demand.** An example of a six-lane roadway that is at capacity and will not be widened further is Chandler Boulevard at the Chandler Fashion Center.

### 4.3.2 Future Roadway Plan

Figure 4-12 shows the arterial roadway system needed to maintain a LOS D (or LOS E in select locations) or better to serve the traffic demand. Many of the roadway segments in the southern and eastern portions of the City show a need for additional roadway capacity.

Arizona Avenue, currently a four-lane roadway in the Downtown area, will operate at a reduced LOS E with the forecasted 2030 ADT volumes. The existing four-lane roadway and resulting higher levels of delay are considered appropriate for the Downtown area with significant pedestrian activity and available transit facilities to service any of the unmet traffic demand.

Some segments of Elliot Road, Warner Road, Dobson Road and Alma School Road in northern parts of the City will operate at a reduced LOS E with the 2030 ADT volumes. These roadways are less favorable for additional widening due to restricted right-of-way and existing residential neighborhoods along the corridors. The City is improving the arterial street intersections along these corridors to reduce the peak hour traffic congestion and improve the intersection operations. These intersection improvements include providing an additional through lane, dual left turn lanes and a separate right turn lane on each approach at the intersections.

The roadway segments of McQueen Road (Ocotillo Road to Riggs Road) and Gilbert Road (Ocotillo Road to Riggs Road) are currently being designed as four-lane facilities based on a detailed operational analysis completed by the City. The study concluded that these roadways will operate at or just slightly above LOS D in 2030. ***These roadways should be evaluated in the future to determine whether additional capacity improvements are required.***

The roadway segments of Alma School Road (from Pecos Road to Ocotillo Road) will require six lanes based on the analysis of the existing and future traffic volumes. The required roadway improvements will incur significant costs. City will re-evaluate the required improvements in the future.

Figure 4-12 also shows the roadway improvements planned by the adjacent jurisdictions. The official transportation plans for the Cities of Phoenix (Street Classification Map 2007), Tempe (General Plan 2030), Mesa (General Plan 2025), Gilbert (Circulation Map 2006) and the Gila River Indian Community Border Area Transportation Plan were referred to in order to identify the future roadway network in their respective areas.

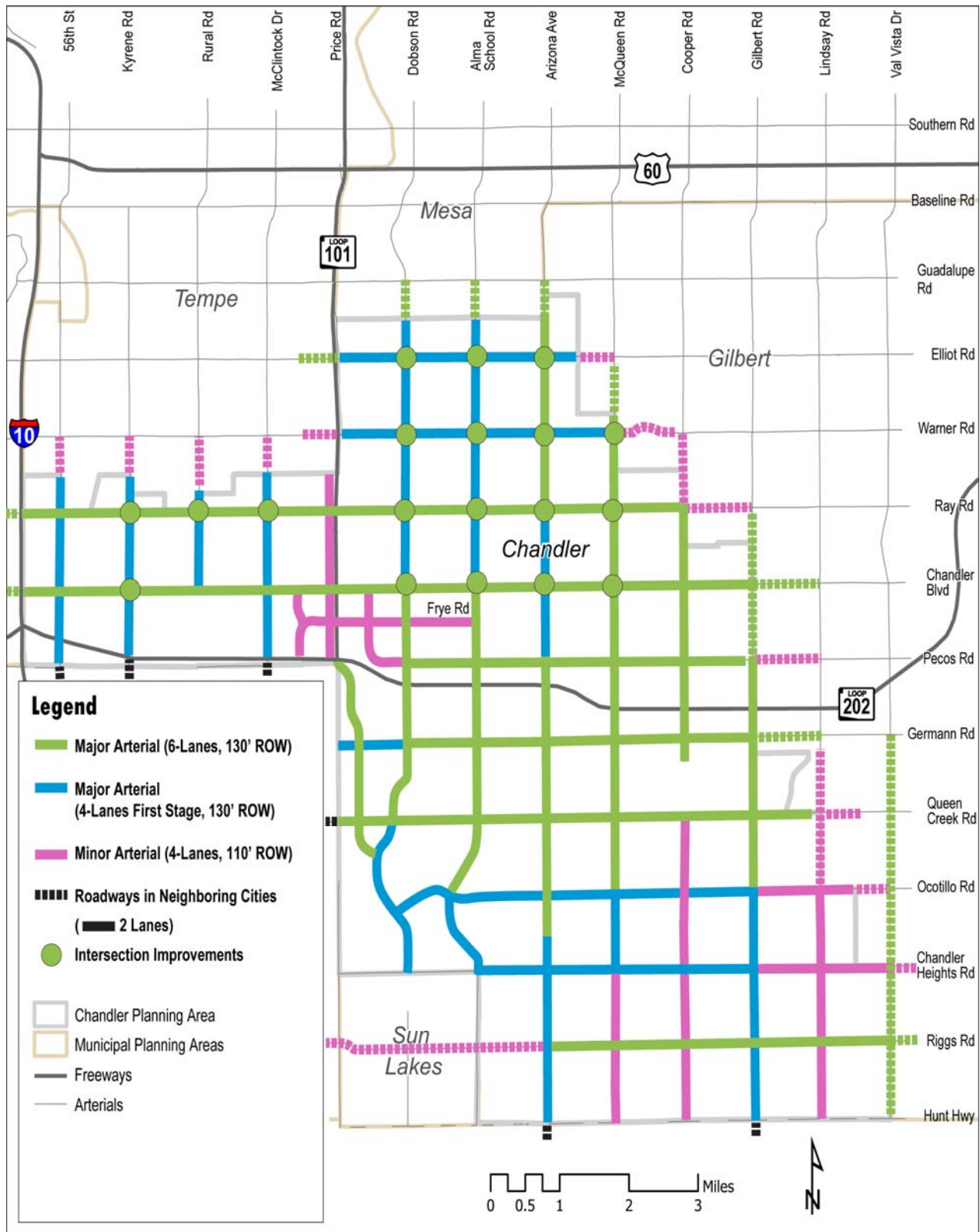


The arterial street intersection of Chandler Boulevard at Dobson Road is currently under construction. These improvements are also depicted in Figure 4-12.

**Note: The roadway segments of Alma School Road and Dobson Road in north Chandler are currently identified as major arterials and are constructed to a four-lane cross-section. It is recommended that the City continue with the arterial-arterial intersection widening improvements to add capacity when needed, and acquire right-of-way for the major arterial standard when available.**



Figure 4-12: 2030 Roadway System





### 4.3.3 Definition of Improvements

There are several types of roadway improvements that can be implemented to achieve the roadway plan. For the purpose of this analysis, it is assumed that an existing two-lane roadway would not meet the structural pavement requirements of an urban arterial roadway and would be completely reconstructed to a four or six-lane roadway as required. An existing four-lane roadway is assumed to meet the urban arterial roadway standards and can be widened to six-lanes without complete reconstruction. However, a pavement overlay may be placed over the entire roadway.

The City of Chandler currently uses the following types of roadway improvements to provide additional roadway capacity:

- Widen the existing two-lane roadway to four- or six-lane facility.
- Widen the existing four-lane roadway to six-lane facility.
- Widen the arterial street intersections along a four-lane arterial corridor.

While it is commonly accepted that the capacity constraint in a roadway system is at the major signalized intersections, there are advantages and disadvantages with each type of improvement.

Widening a roadway from a four-lane to six-lane roadway will provide system continuity with an additional through capacity of about 16,000 vehicles per day (for a LOS D or better). The costs associated with acquiring additional right-of-way, if needed, to provide additional through lanes are very high. The impacts to residential properties may include a significant number of full acquisitions and the impacts to business areas may include significant or partial acquisitions.

A four-lane roadway with widened intersections that include additional left turn lanes, one through lane and right turn lanes on each approach will provide an additional through capacity of about 5,000 vehicles per day (for a LOS D or better). The costs associated with acquiring additional right-of-way are relatively less expensive. There are some impacts to existing businesses, but there will be minimal impact to the residential areas. The assumptions, cross-sections and associated improvement costs are described in the following sections:

#### **Widen to Four-Lanes (Minor Arterial, 4-lanes with 110 feet right-of-way)**

The minor arterial cross-section includes two travel lanes and a bike lane in each direction with a raised median and sidewalk (City of Chandler Standard Detail #C-205). The right-of-way for this cross section is typically 110 feet (widening to 130 feet at arterial/arterial intersections). The pavement width for each direction of travel is 30 feet, 16 feet wide raised median and a 6 feet meandering sidewalk with a landscape buffer. The estimated total cost for design, right-of-way acquisition and construction of one mile of this cross section is \$9.0 million.



### **Widen to Four-Lanes (Major Arterial-first stage, 4-lanes with 130 feet right-of-way)**

The City of Chandler currently uses a process whereby the planned six-lane roadways are initially constructed as four-lane streets with a 40 foot wide median and then are widened to six-lanes at some point in the future by narrowing the median to 16 feet. This construction is accomplished by building the outside four-lanes with the final curb, gutter, and sidewalk. The estimated total cost for design, right-of-way acquisition and construction of one mile of this cross section is \$9.0 million.

### **Widen to Six-Lanes (Major Arterial, 6-lanes with 130 feet right-of-way)**

The major arterial cross-section consists of three travel lanes and a bike lane in each direction with a raised median and sidewalk (City of Chandler Standard Detail #C-203). The right-of-way for this cross section is typically 130 feet (widening to 150 feet at arterial/arterial intersections to accommodate the turn lanes). The pavement width for each direction of travel is 42 feet, 15 feet wide raised median and a 6 feet meandering sidewalk with a landscape buffer. The estimated total cost for design, right-of-way acquisition and construction of a mile of this cross-section is \$13.5 million.

The estimated cost for widening an existing four-lane roadway to a six-lane roadway is \$4.5 million. This is assumed that the City already has the 130 feet of right-of-way needed to widen to six lanes.

### **Intersection Improvement**

The scope for an intersection improvement project includes widening to provide dual left turn lanes, three through lanes through the intersection and a right turn lane on each approach. The improvements may also include traffic signal improvements. The estimated total cost for design, right-of-way acquisition and construction of improving all approaches of an intersection is \$8.7 million. The cost for design, right-of-way acquisition and construction varies by location within the City due to the factors such as existing development in the intersection corners and the utility relocation costs.

### **4.3.4 Implementation**

This section of the study presents an implementation plan to phase the proposed roadway improvements. Each year, the City prepares a Capital Improvement Program (CIP) that includes proposed projects for the next five years based on the City's current needs (beginning in fiscal year 2009-2010, the program has been extended to 10 years). The budget for the first year of the program was adopted by the City Council. The revenue sources to provide roadway improvements include: Impact fees, Street General Obligation Bonds (GOB), Highway User Revenue Fund (HURF) and grants.

The City of Chandler currently has an arterial street impact fee area that covers approximately 75% of the City. The impact area is southeast of a line formed by McClintock Drive from the south city limit to Frye Road, then east on Frye Road to Arizona Avenue, then north on Arizona Avenue to Knox Road, then east on Knox Road to the UPRR, and north on the UPRR to the city limit just north of Warner Road (City of Chandler Impact Fee Area Map 05/2007). The impact fee collected will be used for the cost of identified arterial roadway needs in the growing areas of the City. The fee is



based on the total cost of identified improvements for the area, apportioned to land use categories based on their PM peak vehicle trip generating characteristics. This program has been in effect since January 1997.

The intersection improvements planned in non-impact fee area are to be funded by the Street General Obligation Bonds (GOB), Highway User Revenue Fund (HURF) or other non-impact fee funds.

### **Priorities**

The roadway improvements are prioritized using the City's priority ranking for improvements in the arterial street impact fee area and intersection ranking. These priorities are subject to change over time in conjunction with the changes in the land use, traffic congestion and traffic patterns.

The roadway plan is proposed to be implemented in multiple year Capital Improvement Periods. The priorities were developed to address the capacity needs, expected growth, and system continuity. Figure 4-13 through Figure 4-16 show the recommended projects in each Capital Improvement Period.

### **4.3.5 Roadway Improvement Costs**

The costs of the proposed roadway improvements represent a planning level estimate based on 2008 dollars. This analysis is based on many simplified assumptions and actual costs may vary over time because of inflation and changes in the construction industry. The Capital Improvement Program costs reflect the estimates needed to implement the desired improvements based on the available funding levels for the future years. The City-adopted street cross-sections were utilized to complete a cost analysis of the recommended improvements. The cost of construction of a mile of roadway was determined using the preliminary cost estimates of the programmed projects presented in the City of Chandler CIP fiscal year 2010-19 book. The average costs were considered for the other projects as defined in the "Definition of Improvements" section.

The Roadway Plan cost estimate is only for the major arterial roadway improvements. These improvements are necessary to maintain an acceptable LOS for arterials and major intersections of the roadway system. Additional costs that can be incurred over time are roadway pavement maintenance, new traffic signals, and traffic control equipment upgrades, as necessary.

The future roadway improvements are proposed to be implemented in four five-year CIP plans. The estimated costs for each Capital Improvement Period that includes roadway and intersection improvements are listed in Table 4-8.



**Table 4-8: Capital Improvement Recommendation Costs**

Period	Estimated Cost in Impact fee Area (Millions)	Estimated Cost in Non-Impact Fee Area (Millions)	Total Cost of Recommendations (Millions)
2009-2014	130.50	16.30	<b>146.80</b>
2014-2019	98.55	-	<b>98.55</b>
2019-2024	49.50	47.42	<b>96.92</b>
2024-2029	40.50	26.10	<b>66.60</b>
Total (Millions)	<b>319.05</b>	<b>89.82</b>	<b>408.87</b>

The roadway projects of each Capital Improvement Period are identified in Figures 4-13 through 4-16 and the preliminary costs are summarized in Table 4-9 through Table 4-12.

**Note: The recommendations detailed in each Capital Improvement Period can change at anytime due to the amount of funding available to the City in any given year.**





Figure 4-13: Capital Improvement Recommendations 2009-2014

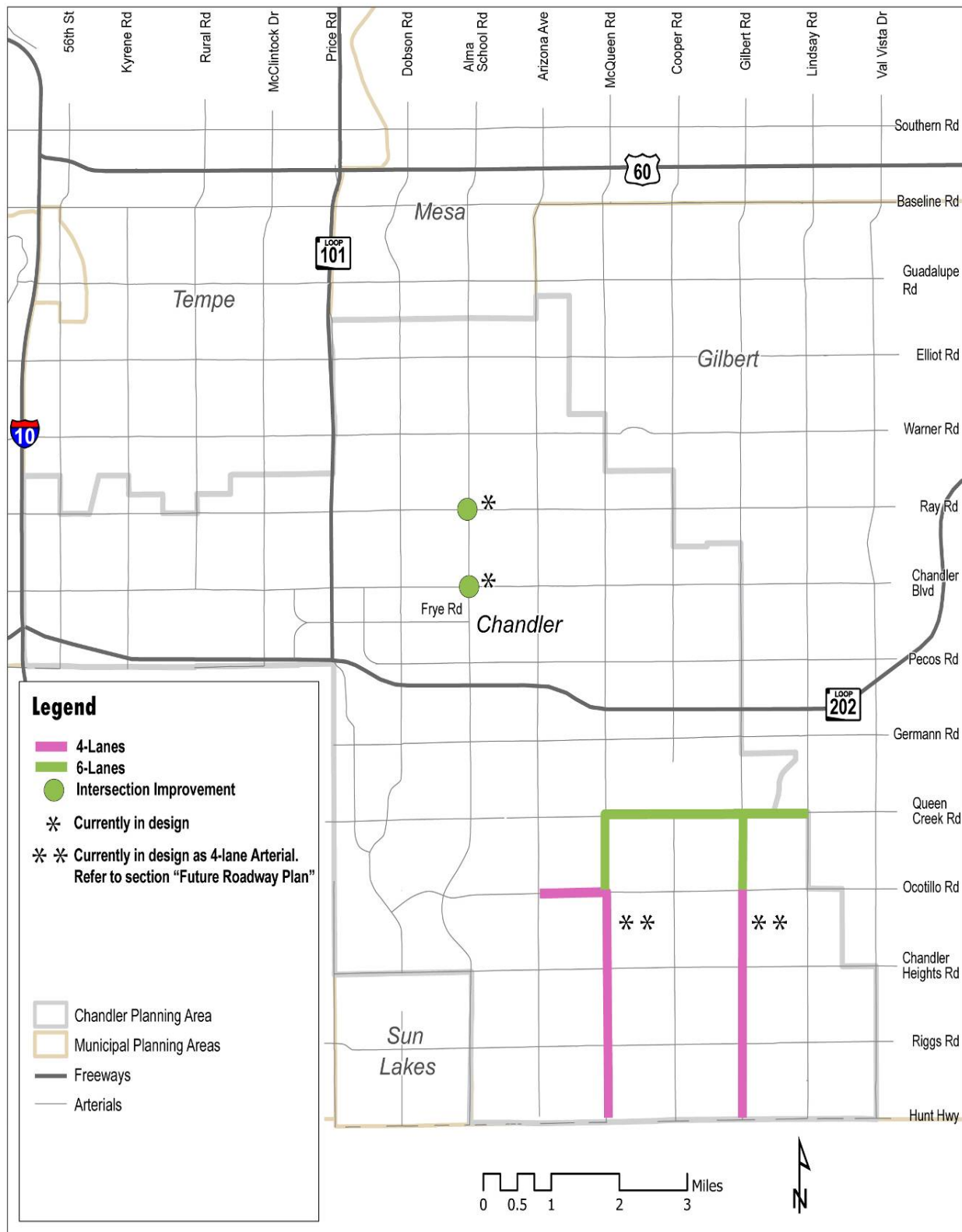




Figure 4-14: Capital Improvement Recommendations 2014-2019

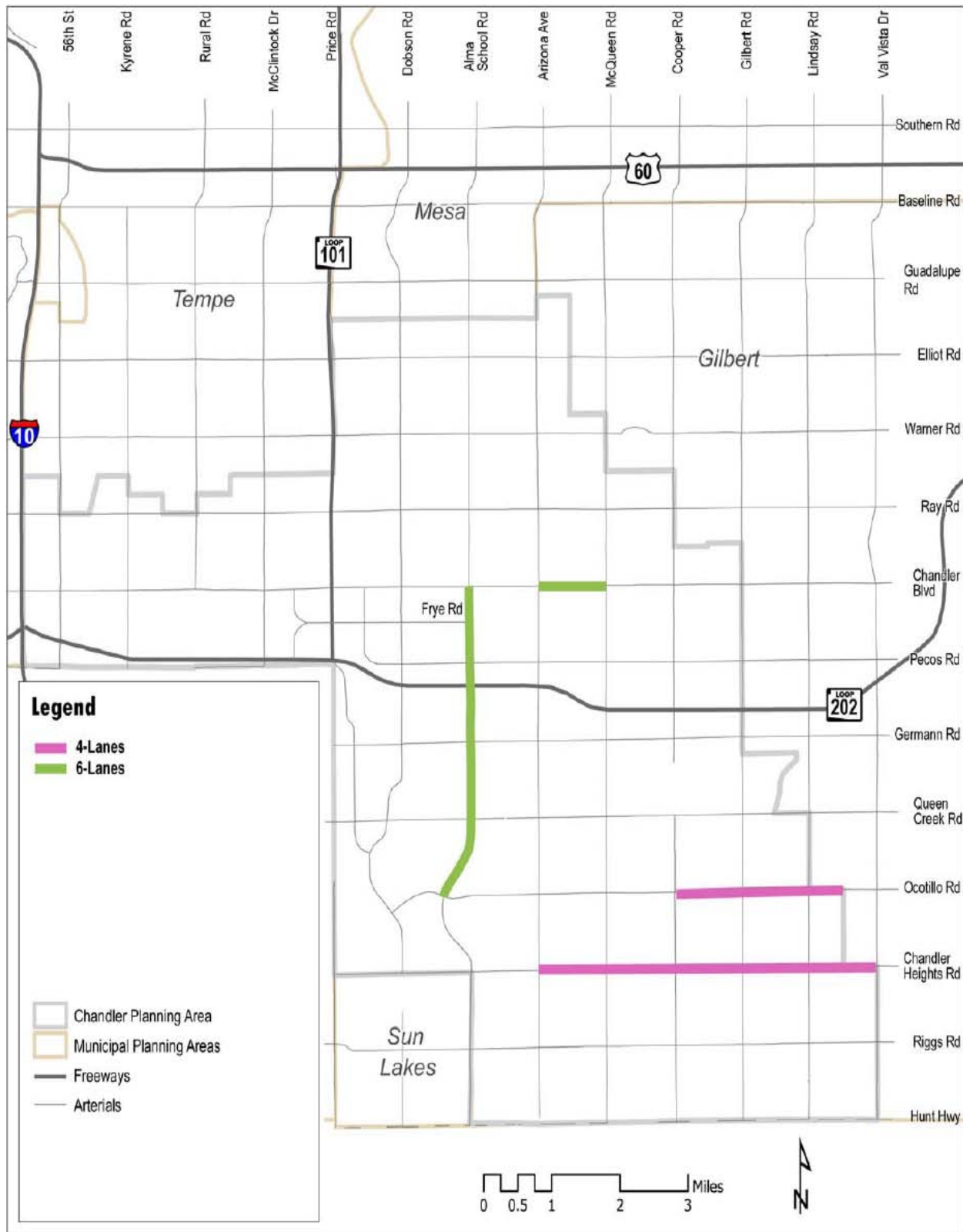




Figure 4-15: Capital Improvement Recommendations 2019-2024

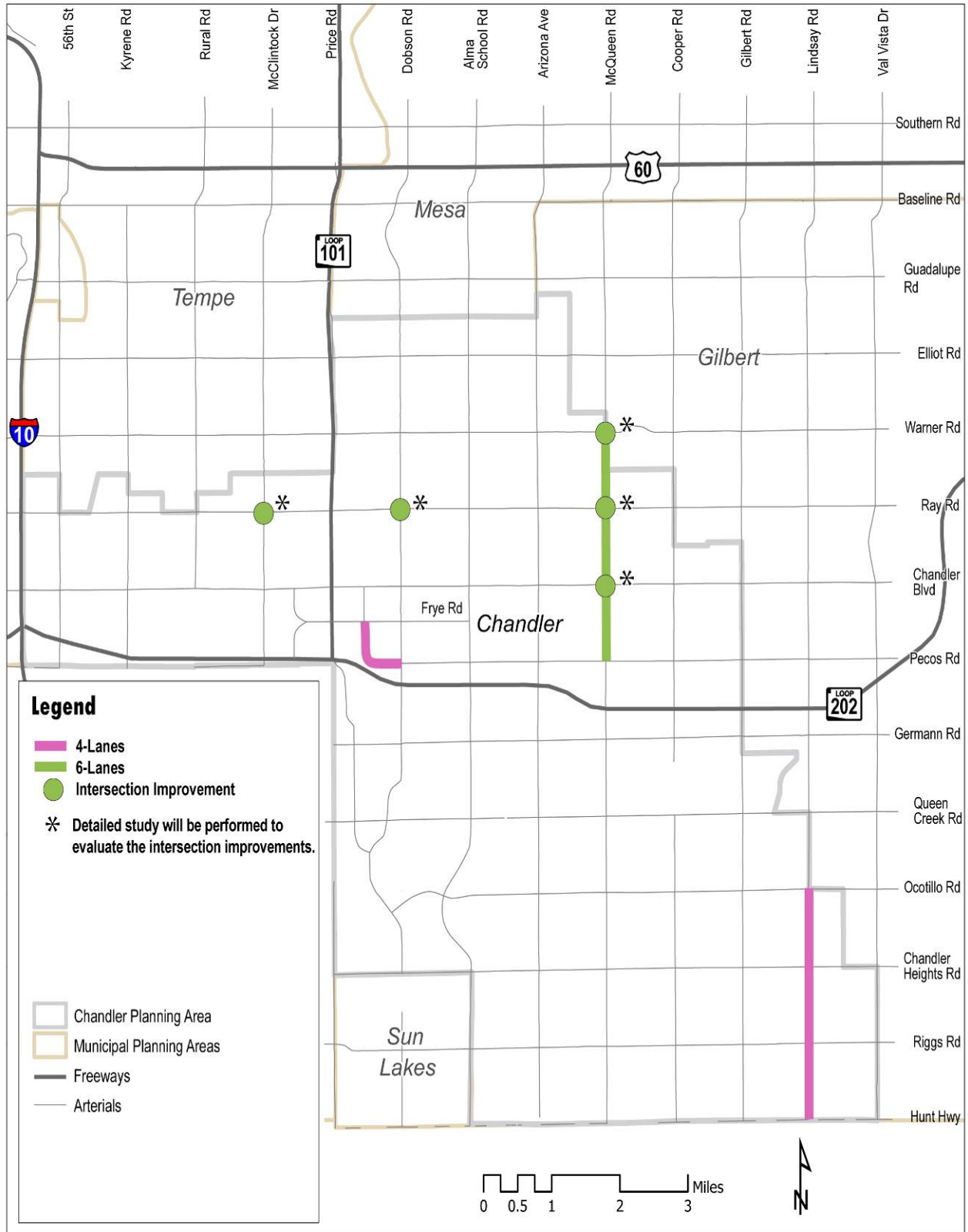
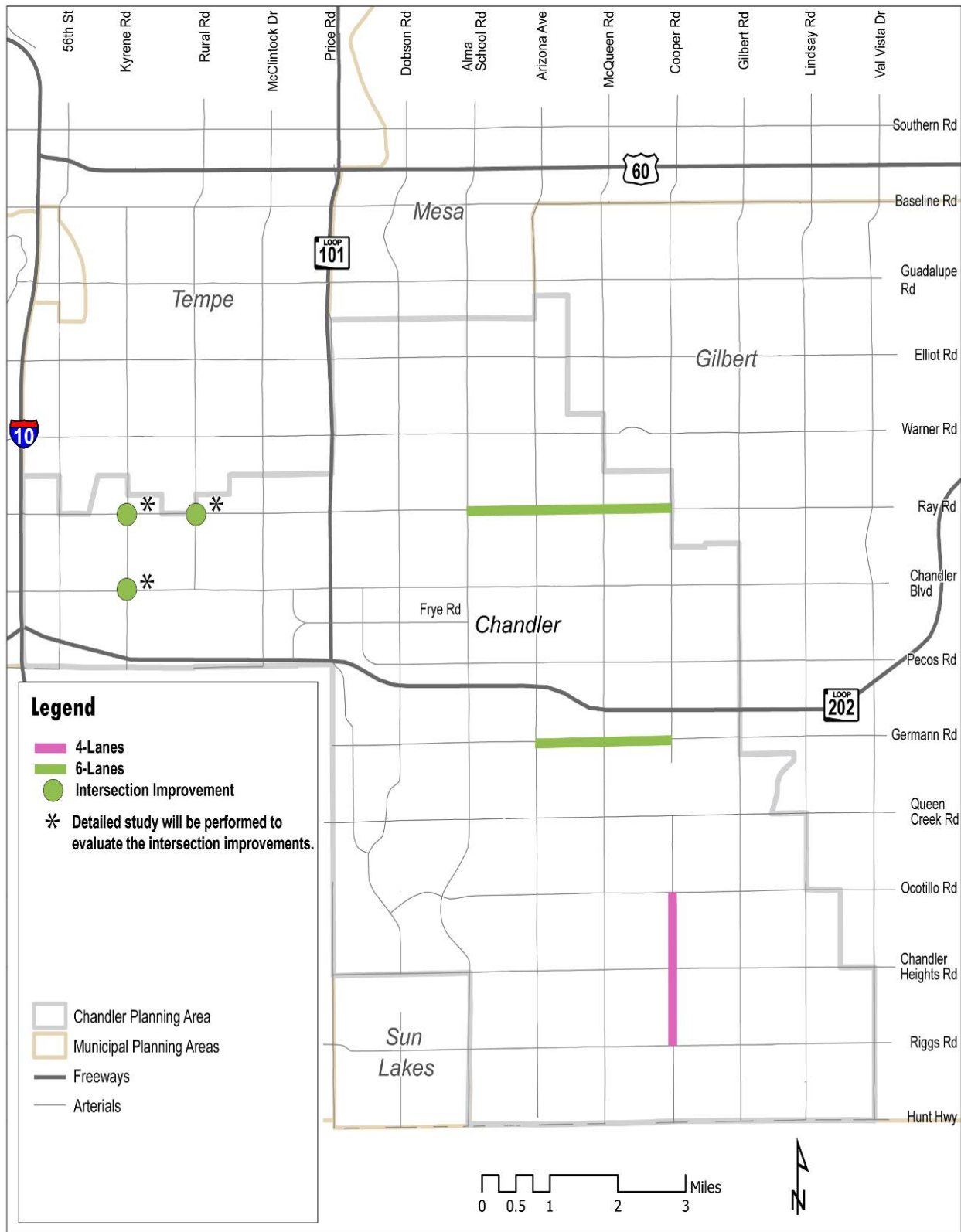




Figure 4-16: Capital Improvement Recommendations 2024-2029





**Table 4-9: Capital Improvement Recommendations 2009-2014**

**Roadway Improvements**

Roadway	Segment		Number of Lanes		Source of Funding	Cost (Millions)
			Existing	Recommended		
Queen Creek Road	McQueen Road	Cooper Road	2	6	Impact Fees	\$ 13.50
Queen Creek Road	Cooper Road	Gilbert Road	2	6	Impact Fees	\$ 13.50
Queen Creek Road	Gilbert Road	Lindsay Road	2	6	Impact Fees	\$ 13.50
Ocotillo Road	Arizona Ave	McQueen Road	2	4	Impact Fees	\$ 9.00
McQueen Road	Queen Creek Road	Ocotillo Road	2	6	Impact Fees	\$ 13.50
McQueen Road	Ocotillo Road	Chandler Heights Road	2	4	Impact Fees	\$ 9.00
McQueen Road	Chandler Heights Road	Riggs Road	2	4	Impact Fees	\$ 9.00
McQueen Road	South of Riggs Road	Hunt Highway	2	4	Impact Fees	\$ 9.00
Gilbert Road	Queen Creek Road	Ocotillo Road	2	6	Impact Fees	\$ 13.50
Gilbert Road	Ocotillo Road	Chandler Heights Road	2	4	Impact Fees	\$ 9.00
Gilbert Road	Chandler Heights Road	Riggs Road	2	4	Impact Fees	\$ 9.00
Gilbert Road	South of Riggs Road	Hunt Highway	2	4	Impact Fees	\$ 9.00

**Intersection Improvements**

Intersection		Source of Funding	Cost (Millions)
Alma School Road	Ray Road	General Obligation Funds	\$ 7.60
Alma School Road	Chandler Boulevard	General Obligation Funds	\$ 8.70
<b>Estimated Total Cost (Millions)</b>			<b>\$ 146.80</b>



**Table 4-10: Capital Improvement Recommendations 2014-2019**

**Roadway Improvements**

Roadway	Segment		Number of Lanes		Source of Funding	Cost (Millions)
			Existing	Recommended		
Alma School Road	Chandler Boulevard	Pecos Road	4	6	Impact Fees	\$ 4.50
Alma School Road	Pecos Road	Germann Road	4	6	Impact Fees	\$ 4.50
Alma School Road	Germann Road	Queen Creek Road	4	6	Impact Fees	\$ 4.50
Alma School Road	Queen Creek Road	Ocotillo Road	4	6	Impact Fees	\$ 4.50
Chandler Boulevard	Colorado St	McQueen Road	4	6	Impact Fees	\$ 17.55
Ocotillo Road	Cooper Road	Gilbert Road	2	4	Impact Fees	\$ 9.00
Ocotillo Road	Gilbert Road	148th Street	2	4	Impact Fees	\$ 9.00
Chandler Heights Road	Arizona Ave	McQueen Road	2	4	Impact Fees	\$ 9.00
Chandler Heights Road	McQueen Road	Cooper Road	2	4	Impact Fees	\$ 9.00
Chandler Heights Road	Cooper Road	Gilbert Road	2	4	Impact Fees	\$ 9.00
Chandler Heights Road	Lindsay Road	Val Vista Dr	2	4	Impact Fees	\$ 9.00
Chandler Heights Road	Gilbert Road	Lindsay Road	2	4	Impact Fees	\$ 9.00
			<b>Estimated Total Cost (Millions)</b>			<b>\$ 98.55</b>



**Table 4-11: Capital Improvement Recommendations 2019-2024**

**Roadway Improvements**

Roadway	Segment		Number of Lanes		Source of Funding	Cost (Millions)
			Existing	Recommended		
Pecos Road	Frye Road	Dobson Road	2	4	Impact Fees	\$ 9.00
McQueen Road	Warner Road	Ray Road	4	6	Impact Fees	\$ 4.50
McQueen Road	Ray Road	Chandler Boulevard	4	6	Impact Fees	\$ 4.50
McQueen Road	Chandler Boulevard	Pecos Road	4	6	Impact Fees	\$ 4.50
Lindsay Road	South of Ocotillo Road	Chandler Heights Road	2	4	Impact Fees	\$ 9.00
Lindsay Road	Chandler Heights Road	Riggs Road	2	4	Impact Fees	\$ 9.00
Lindsay Road	Riggs Road	Hunt Highway	2	4	Impact Fees	\$ 9.00

**Intersection Improvements**

Intersection		Source of Funding	Cost (Millions)
Ray Road	McClintock Drive	General Obligation Funds	\$ 10.81
Ray Road	Dobson Road	General Obligation Funds	\$ 10.81
Warner Road	McQueen Road	General Obligation Funds	\$ 8.60
Ray Road	McQueen Road	General Obligation Funds	\$ 8.60
Chandler Boulevard	McQueen Road	General Obligation Funds	\$ 8.60
Estimated Total Cost (Millions)			\$ 96.92



**Table 4-12: Capital Improvement Recommendations 2024-2029**

**Roadway Improvements**

Roadway	Segment		Number of Lanes		Source of Funding	Cost (Millions)
			Existing	Recommended		
Ray Road	Alma School Road	McQueen Road	4	6	Impact Fees	\$ 4.50
Ray Road	Arizona Ave	McQueen Road	4	6	Impact Fees	\$ 4.50
Ray Road	McQueen Road	Cooper Road	4	6	Impact Fees	\$ 4.50
Germann Road	Arizona Ave	McQueen Road	4	6	Impact Fees	\$ 4.50
Germann Road	McQueen Road	Cooper Road	4	6	Impact Fees	\$ 4.50
Cooper Road	South of Ocotillo Road	Chandler Heights Road	2	4	Impact Fees	\$ 9.00
Cooper Road	Chandler Heights Road	Riggs Road	2	4	Impact Fees	\$ 9.00

**Intersection Improvements**

Intersection		Source of Funding	Cost (Millions)
Ray Road	Kyrene Road	General Obligation Funds	\$ 8.70
Ray Road	Rural Road	General Obligation Funds	\$ 8.70
Chandler Boulevard	Kyrene Road	General Obligation Funds	\$ 8.70
<b>Estimated Total Cost (Millions)</b>			<b>\$ 66.60</b>





## SECTION 5.0 TRANSIT PLAN

### 5.1 Transit Planning Context

Like many metropolitan regions today, the Valley coordinates its transit operations through a regional authority, the Regional Public Transportation Authority (RPTA). Regional transit services operate under a common Valley Metro brand. However, historically, transit in the Phoenix metropolitan area was initiated at the local level. As a result, much of the Valley's transit service today is supported by a combination of regional and local funds. This funding situation means that transit service levels can, and often do, differ from city to city. Almost all transit service is operated by one of several private contractors, but the contracting agency may be one of several cities or the RPTA.

Proposition 400 extended a county-wide, half-cent sales tax and dedicated 33.3 percent of the revenues to transit projects that were identified in the Regional Transportation Plan (RTP), which was developed by the Maricopa Association of Governments (MAG). The RTP enhances services on existing routes, creates new routes, and supports transit operations with capital facilities. Transit services and infrastructure identified in the RTP are funded by the half-cent sales tax and are considered regional routes that generally cross city boundaries or serve residents of several cities.

***Note: Proposition 400 funding and the Regional Transportation Plan (RTP) were significantly affected by the 2009 economic downturn. The reduction in tax revenues collected will have an affect on the implementation of new routes and level of service of all fixed-route bus services. It is important to note that the recommended transit improvements detailed in this plan may be changed at any time based on these funding challenges.***

Valley Metro local fixed-route services generally operate on the major arterials, where development concentration tends to be the highest. Because the Valley's major arterials are on a mile grid, the walking distance to transit routes can be much greater than the typical quarter-mile optimum, making some residences and destinations beyond the reach of transit. Several Valley cities have responded to this challenge by implementing neighborhood circulator routes that operate on collector streets and residential streets. Currently, circulators operate in areas of Phoenix, Glendale, and Tempe. Additional Valley cities are contemplating creating new circulator systems. Thus, while the RTP and Proposition 400 have focused regional planning efforts on the Valley's transit services, cities continue to play a strong role in transit provision and service development and in tailoring services to match local needs.

### 5.2 Existing Transit Conditions

The transit system in Chandler currently consists of fixed-route, express, and dial-a-ride services and supporting infrastructure. The existing services and facilities are described below and illustrated on Figure 5-1.



### 5.2.1 Fixed-Route Transit Services

The fixed-route bus transit system in Chandler is comprised of approximately 50 miles of local and express services, all of which provide service in at least one of Chandler’s neighboring cities.

#### Express Routes

Chandler is served by four express bus routes that operate during the peak commute hours. These routes reduce travel times by making a limited number of stops before entering a freeway for non-stop travel. On the freeway, express buses travel in high occupancy vehicle (HOV) lanes and use HOV exit/entrance ramps, where available. Express routes are listed in Table 5-1. Route 511 is a bi-directional express service serving the Chandler Park-and-Ride and Scottsdale Airpark, with a connection to light rail at the Price/Apache station. Route 540 originates in downtown Chandler, travels through Chandler and southern Tempe, and enters the I-10 freeway for travel to downtown Phoenix. Route 541 also originates in downtown Chandler and travels to downtown Phoenix, but makes stops in southern Mesa before entering the US 60. Route 542 stops only at the Chandler Park-and-Ride before entering the Loop 202 for the 55-minute trip to downtown Phoenix.

**Table 5-1: Transit Express Services**

Route	Name	Days of Operation	Trip Frequency
511	Chandler/Scottsdale Airpark	Monday-Friday	2 northbound and 2 southbound trips in the morning and the evening
540	Chandler Express (via Tempe)	Monday - Friday	4 inbound trips in the morning; 4 outbound trips in the evening
541	Chandler Express (via Mesa)	Monday - Friday	5 inbound trips in the morning; 5 outbound trips in the evening
542	Chandler/Downtown Express	Monday – Friday	4 inbound trips in the morning; 4 outbound trips in the evening

*Source: Valley Metro Bus Book (January 2009) & online schedules (May 2009)*

Many Chandler residents also take advantage of the I-10 East RAPID, an express bus service operated by the City of Phoenix that originates at the Pecos Road/40th Street Park-and-Ride in Ahwatukee. Routes 540 and 541 primarily use local bus stops as pick-up/drop-off points in Chandler. By contrast, the I-10 East RAPID service uses a park-and-ride lot as the only pick-up/drop-off point, traveling little on surface streets for the fastest time to downtown Phoenix. The base fare for express and RAPID services is \$2.75 per trip.

#### Local Service

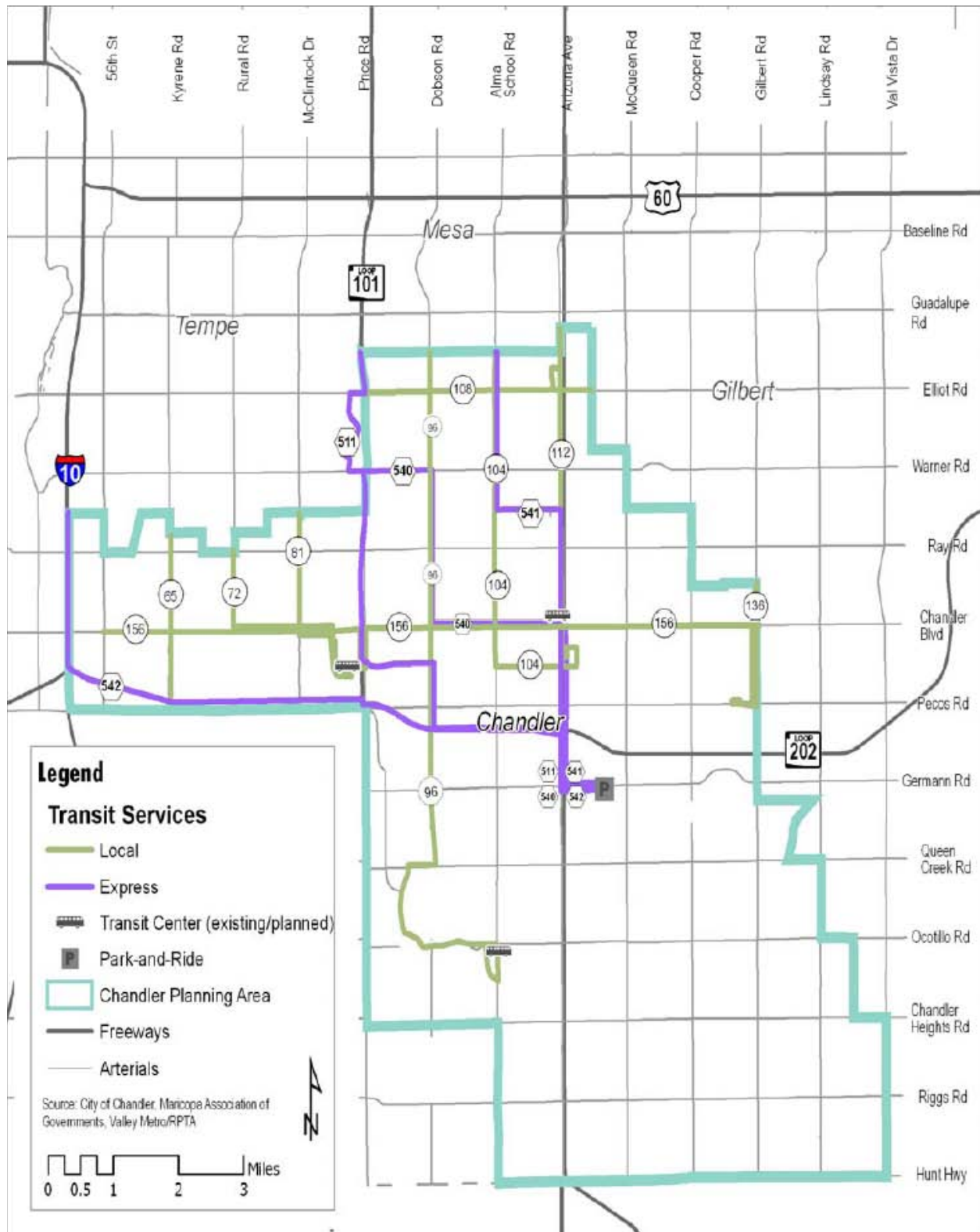
Table 5-2 provides service details on Chandler’s local transit routes. Local fixed-route services, in which service schedules are established and vehicles typically stop every ¼ mile along an established route several miles long, comprise the majority of transit



service miles in Chandler. Local services operate as part of the Valley Metro regional transit system, crossing city boundaries and offering a uniform fare structure. The base fare for local service is \$1.75 per trip.



Figure 5-1: Existing Transit Routes & Facilities 2009





**Table 5-2: Local Fixed-Route Transit Services**

Route	Name	Days of Operation	Operating Hours* (Weekday)	Frequency (Minutes)	
				Weekday (Pk/OPk)	Weekend (Sat/Sun)
65	Kyrene Road	Mon - Fri	6:50 a.m. - 12:20 a.m.	30/30	NA
72	Rural Road	Mon - Sun	5:30 a.m. - 11:35 p.m.	15/15	30/30
81	McClintock Drive	Mon - Fri	5:30 a.m. - 8:15 p.m.	30/60	NA
96	Dobson Road	Mon - Sun	5:00 a.m. - 11:33 p.m.	15/30	30/30
104	Alma School Road	Mon - Fri	5:25 a.m. -8:10 p.m.	30/30	NA
108	Elliot Road	Mon - Fri	5:45 a.m. - 6:40 p.m.	60/60	NA
112	Arizona Avenue	Mon - Fri	6:05 a.m. - 7:23 p.m.	30/30	NA
136	Gilbert Road	Mon - Sat	4:40 a.m. -6:35 p.m.	30/30	30/NA
156	Chandler Boulevard	Mon - Sun	5:03 a.m. - 10:45 p.m.	30/30	30/30

*Source: Valley Metro Bus Book (January 2009)*

*\*Operating hours and frequencies are for the portion of the route within the City of Chandler*



## **Neighborhood Circulators**

Although the City of Chandler does not currently have any neighborhood circulator service in operation, its 2002 Transit Plan recommended implementing circulators in several areas of the City. Neighborhood circulators serve a common geographic area with frequent, all-day service. Circulator vehicles are small and enable passengers to connect to a wider transit network from residential neighborhoods and activity centers. In the Phoenix metropolitan area, all neighborhood circulators are locally funded and operated. Depending on the city, circulator service may be free to passengers or may have a small fare. Funding for the implementation of a City Neighborhood Circulator system has not been available or identified. Circulator service cannot be funded by the RTP. The City must identify or create a funding source (local transit tax, for example).

## **Funding and Service Provision**

Funding for Chandler's fixed-route services comes from two sources. Six of the routes are funded solely by RPTA. The remainder rely on City of Chandler funds. Service in Chandler is managed either by RPTA or the City of Tempe, with whom the City has transit service agreements in place. All operations are contracted out to private operators. Table 5-3 summarizes the funding and provision of Chandler's fixed-route transit services.



**Table 5-3: Funding and Provision of Fixed-Route Services**

Route	Funded by	Contracting Agency	Operator
511	RPTA	RPTA	Veolia RPTA
540	RPTA	RPTA	Veolia RPTA
541	RPTA	RPTA	Veolia RPTA
542	RPTA, Chandler	RPTA	Veolia RPTA
65	Tempe, Chandler	Tempe	Veolia Tempe
72	RPTA	Tempe	Veolia Tempe
81	Chandler, Scottsdale, Tempe	Tempe	Veolia Tempe
96	RPTA	RPTA	Veolia RPTA
104	Mesa, Chandler	RPTA	Veolia RPTA
108	Tempe, Gilbert, Chandler, Mesa	Tempe	Veolia Tempe
112	Chandler, Mesa	RPTA	Veolia RPTA
136	Mesa, Gilbert	RPTA	Veolia RPTA
156	RPTA	RPTA	Veolia RPTA

*Source: Valley Metro 2009*

### 5.2.2 Existing Transit Facilities

The various elements of the physical infrastructure that supports transit operations are described below.

#### Park-and-Ride Facilities

Park-and-ride facilities allow for faster trips by transit by having passengers self-aggregate at a large parking lot. Passengers may drive their personal vehicle to the lot and park or access the lot using local transit routes. Park-and-ride lots may be dedicated, meaning that their sole function is to provide parking space for transit passengers. A park-and-ride may also be shared-use, which provides parking for transit passengers during peak commute periods and parking for other purposes during non-commute periods. Common shared-use parking lots are located at shopping centers and churches.

Chandler currently has one dedicated City-operated park-and-ride lot, located at the southwest corner of Germann Road and Hamilton Street, adjacent to Tumbleweed Park. The facility serves routes 511, 540, 541, and 542.

Chandler has three shared-use park-and-ride lots:



- Carl's Jr., at the southwest corner of Warner Road and Alma School Road, serving routes 104 and 541.
- Food City Plaza, at the northeast corner of Arizona Avenue and Ray Road, serving routes 112 and 541.
- Parking lot at the northwest corner of Chicago Street and Arizona Avenue, serving routes 104, 112, 540, and 541.

In addition to the park-and-ride lots within the City's limits, Chandler residents are known to use the Ahwatukee Park-and-Ride facility located at Pecos Road/40th Street. This facility serves the I-10 East RAPID service.

### **Transit Centers**

A transit center acts as a coordination point for multiple transit routes. A transit center generally has limited or no passenger parking, but may be adjacent to a park-and-ride lot. Transit centers often provide passenger information and may provide additional transit amenities such as ticket sales, restrooms and operator layover locations.

Chandler currently has one transit center, which is located at the Chandler Fashion Center (south of Chandler Boulevard at Price Road) and serves routes 72, 81 and 156.

### **HOV Lanes**

High-occupancy vehicle (HOV) lanes and ramps provide priority access for carpools, vanpools, and express bus vehicles. HOV lanes are on I-10, which extends from Loop 202 through downtown Phoenix and on Loop 101 from the Loop 202 to Scottsdale. On US 60, an HOV lane is present from I-10 to the Loop 202.

### **5.2.3 Paratransit**

Paratransit service operates in response to calls from passengers to the transit operator, who then dispatches a vehicle to pick-up the passengers and transport them to their destinations. Paratransit operations do not operate over a fixed route or a fixed schedule; instead, a vehicle is dispatched to pick-up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick-up other passengers. Several types of paratransit services are present in Chandler.

#### **ADA Complementary Paratransit Service**

Complementary paratransit service is required by law within  $\frac{3}{4}$  mile of fixed-route service (under the Americans with Disabilities Act (ADA) to accommodate persons whose disabilities prevent their use of, or access to, fixed-route services. In addition, the City of Chandler provides ADA paratransit service to citizens who live within Chandler but beyond the required  $\frac{3}{4}$  miles distance. ADA complementary paratransit service is required during the same days and hours that fixed-route service operates in a given area. ADA trips require a reservation, which must be made at least one day in advance and may be made up to 14 days in advance. Users of ADA complementary paratransit service must be certified as eligible for ADA services by RPTA.





In Chandler, ADA service is provided by East Valley Dial-A-Ride (EVDAR) and includes the Cities of Gilbert, Mesa, Scottsdale, and Tempe in its service area. EVDAR is administered, managed and monitored by RPTA and funded by participating cities and RPTA. For Chandler, RPTA currently pays 100% of ADA paratransit service.

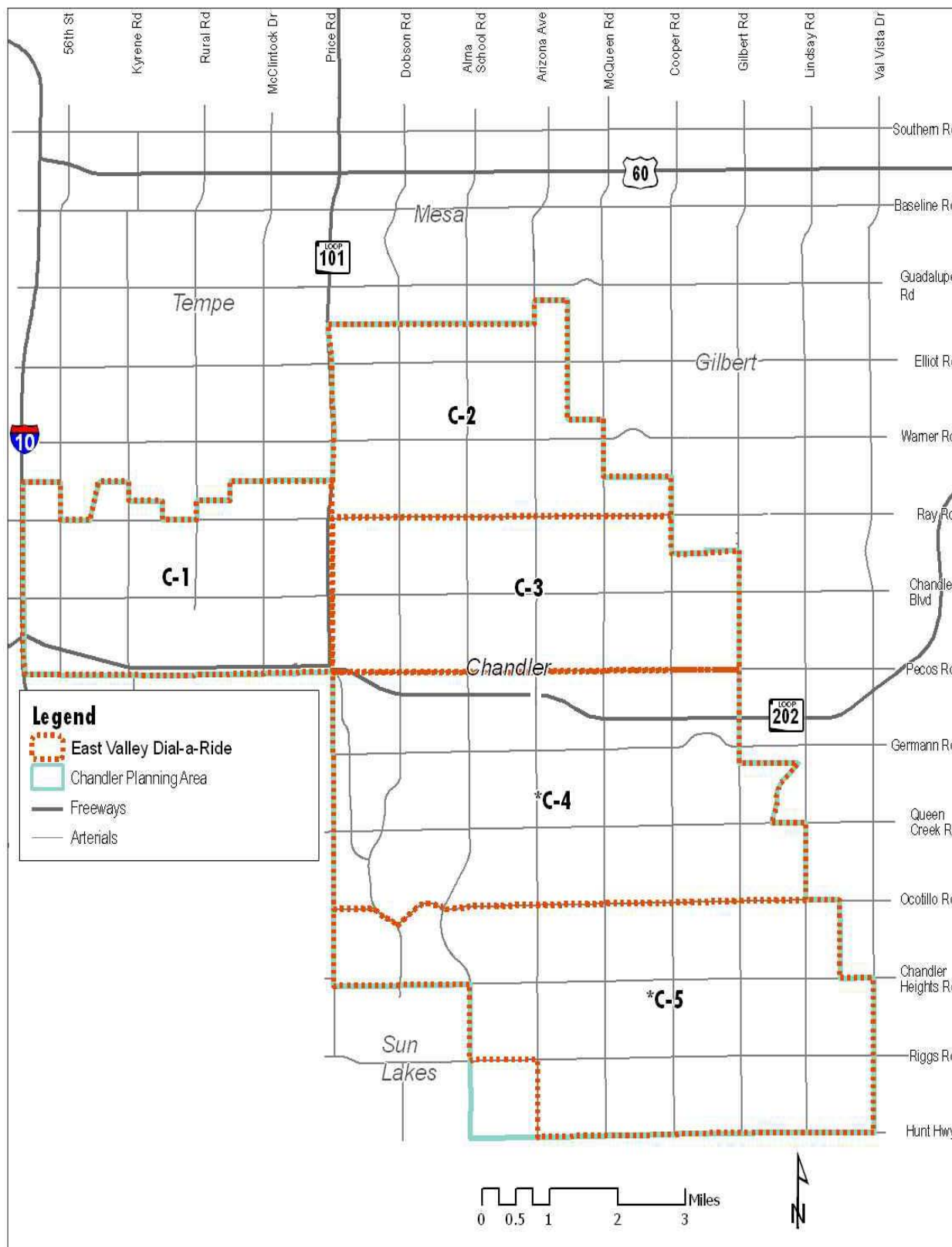
By law, ADA paratransit fares cannot exceed twice the applicable fare for fixed-route services. In the East Valley, the ADA fare is \$2.50 per trip. To allow ADA riders to travel throughout the region at the specified ADA fare, other DAR providers will allow ADA-certified riders to transfer to their service at no additional cost. Various policies exist for ADA riders transferring to and from fixed-route bus services. In the East Valley, ADA riders can transfer to fixed-route service at no charge. As specified in ADA regulations, personal care attendants accompanying ADA riders are accommodated on all DAR systems at no charge. When there is space on the vehicle, companions are also accommodated and pay the same fare as the ADA-certified rider.

### **Dial-a-Ride (General Paratransit)**

In Chandler, general paratransit services are available to seniors, veterans and persons with disabilities, regardless of whether they are eligible for ADA service. General paratransit service – often referred to as dial-a-ride (DAR) – is not required by law and is not subject to the restrictions imposed on ADA complementary paratransit service. East Valley DAR is also the provider for general paratransit services in Chandler. General paratransit is provided seven days a week, from 4:00 a.m. until midnight. The Chandler DAR service area is also shown on Figure 5-2.



Figure 5-2: Chandler Dial-a-Ride Service Area





East Valley DAR service uses a zone fare system for its general paratransit trips; riders travel for \$1.00 for the first zone and 50¢ for each additional zone. As with ADA complementary paratransit, personal care assistants ride free and companions pay the same fare as the eligible rider. Transfers to fixed-route are free and a 50¢ discount is offered for transfers from fixed-route. Several DAR programs also operate within “buffer zones” around their borders to facilitate regional travel. East Valley DAR will provide direct (non-transfer) trips to locations that are in other DAR service areas but close to the borders.

### **Taxi User-Side Subsidy Program**

User-side subsidy service is an arrangement in which the rider's cost of transportation is partially subsidized by the transit agency. The “user” is the rider who pays a reduced fare. Since 2006, Chandler has participated with Mesa, Gilbert, and RPTA in a taxi user-side subsidy program called the East Valley Ride Choice “Coupons for Cabs” program. The program is administered by RPTA and serves residents who are elderly or have a disability. Under this program, qualified users purchase coupon books valued at \$10 (consisting of ten coupons of \$1 each) for only \$2.50. Participating cities make up the difference in cost. Users may then use the coupons to take trips with participating taxicab companies. No restrictions are placed on trip origin, destination, purpose or length, but users must pay any fare balance.

### **Mileage Reimbursement Pilot Program**

The City of Chandler has been supportive of a mileage reimbursement program currently operated by a local non-profit agency (About Care). About Care, with financial support from RPTA (using New Freedom funds) and the City of Chandler, reimburses for the mileage to and from trips for seniors and persons with disabilities in Chandler and Gilbert. This pilot program will run for one year or up to \$48,000 dollars in reimbursement funding.

## **5.2.4 Light Rail Transit**

Light rail transit operates lightweight passenger rail cars on fixed rails in right-of-way. Light rail vehicles are typically driven electrically with power drawn from an overhead electric line. The Valley’s 20-mile starter light rail line began operations in December 2008. Although the initial light rail starter segment does not serve Chandler, the City is a member of the Valley Metro Rail Board and has identified potential light rail corridors for long-range planning. Three corridors have been identified for light rail service in Chandler’s High Capacity Transit Major Investment Study:

- Rural Road terminating at Chandler Boulevard
- Arizona Avenue terminating at Pecos Road
- Chandler Boulevard from Rural Road to Arizona Avenue



### 5.2.5 Passenger and Freight Rail

Currently no passenger rail service exists in Chandler or elsewhere in the Phoenix metropolitan area, although a joint ADOT-MAG study is underway to evaluate the need for and feasibility of implementing commuter rail service in the Valley.

The City currently has two single track freight spur lines within its borders. The lines are owned and operated by the Union Pacific Railroad. The Tempe Industrial Lead runs north-south generally parallel to Kyrene Road near the City's western border and connects an industrial park to the Phoenix Subdivision rail line in south Phoenix. The Chandler Industrial Lead runs north-south parallel to Arizona Avenue, connecting to the main Phoenix Subdivision line at Baseline Road in Tempe and terminating in Pinal County.

### 5.2.6 Transit in Neighboring Cities

All of the transit routes that serve Chandler extend into its neighboring cities. In addition, several transit routes serve areas in the vicinity of Chandler. Table 5-4 summarizes the service in neighboring cities.

The following transit facilities are located within roughly two miles of Chandler:

- Pecos Road/40th Street Park-and-Ride: This City of Phoenix facility contains approximately 1,000 spaces and is served by the I-10 East RAPID commuter express and the ALEX circulator.
- Page Avenue/Ash Street Park-and-Ride: This small park-and-ride lot in Gilbert is currently undergoing expansion.
- In addition to the dedicated park-and-rides listed above, there are also several shared-use park-and-ride lots in Tempe and Phoenix.



**Table 5-4: Transit Service in Chandler Vicinity**

Route Number/ Name	General Travel Direction	Primary Arterials Served	Cities/Areas Served	Connecting Chandler routes
56 – Priest Drive	North/South	Priest Drive (56th Street)/48th Street	Phoenix: Ahwatukee Tempe: Arizona Mills, downtown/ASU	108
62 – Hardy Drive	North/South	Hardy Drive	Tempe: Downtown/ASU	108, 540
65 –Kyrene Road	North/South	Mill Avenue, Kyrene Road	Tempe: St. Luke’s Hospital, Downtown/ASU, Kiwanis Park	108, 540
92 – 48th Street/ Guadalupe Road	East/West	Guadalupe Road, Baseline Road, 48th Street, Broadway Road	Tempe: Arizona Mills, Downtown/ASU, Guadalupe	72, 65, 81
136 – Gilbert Road	North/South	Gilbert Road, Brown Road	Mesa, Gilbert* *stops in Chandler at Chandler-Gilbert Community College	108, 156
ALEX	Circulator	Various	Ahwatukee (Phoenix)	540

### 5.2.7 Existing Transit Plans

This section provides information on regional plans for transit and plans from cities adjacent to the City of Chandler are included.

#### City of Chandler

Transit Plan Update (November 2002): The City of Chandler Transit Plan Update recommended a range of transit improvements in a three-phase plan. The recommendations were based on the following needs (specific improvements are also noted in parentheses):

- Increased frequency (Routes 96 & 156)
- Longer service hours (Route 156)
- Serving key activity centers: Chandler Fashion Center, Downtown, South Price Road Corridor and Snedigar Sports Center (Transit Center constructed at Chandler Fashion Center)
- Expanding service in Southern Chandler (Route 96)
- Expanding the dial-a-ride service area in Chandler (now serves entire City)
- Enhancing express service with longer service hours and higher-capacity vehicles (One additional trip added in each direction to each route)

**Chandler Capital Improvements Program (CIP):** The current FY 2010-2014 Chandler Capital Improvements Program identifies capital projects programmed for



construction throughout the City for the next five years. The CIP is updated annually. It includes capital improvements from the RTP, as appropriate. CIP transit projects are shown in Table 5-5.

**Table 5-5: Transit-Related Capital Improvements**

Type of Improvement	Fiscal Year(s)
Arizona Ave BRT Stations	2009-2010
South Chandler Transit Center	2008-2010
Downtown Chandler Transit Center	2008-2009, 2010-2011

**High Capacity Transit/Major Investment Study (July 2003):** The City of Chandler High-Capacity Transit Study was a major transit investment study that identified high-capacity transit projects that could address future travel demands in Chandler and the East Valley. The Study concluded with a phased approach to implementing high-capacity transit solutions. The first phase focuses on bus transit improvements coupled with infrastructure projects – such as queue jumper lanes and fiber optic cable – that would lay groundwork for future service improvements. The second phase recommended bus rapid transit (BRT) projects on Arizona Avenue, Rural Road and Chandler Boulevard. The final phase of recommendations included light rail transit projects on Arizona Avenue/Chandler Branch Railroad and Rural Road/Chandler Boulevard corridors.

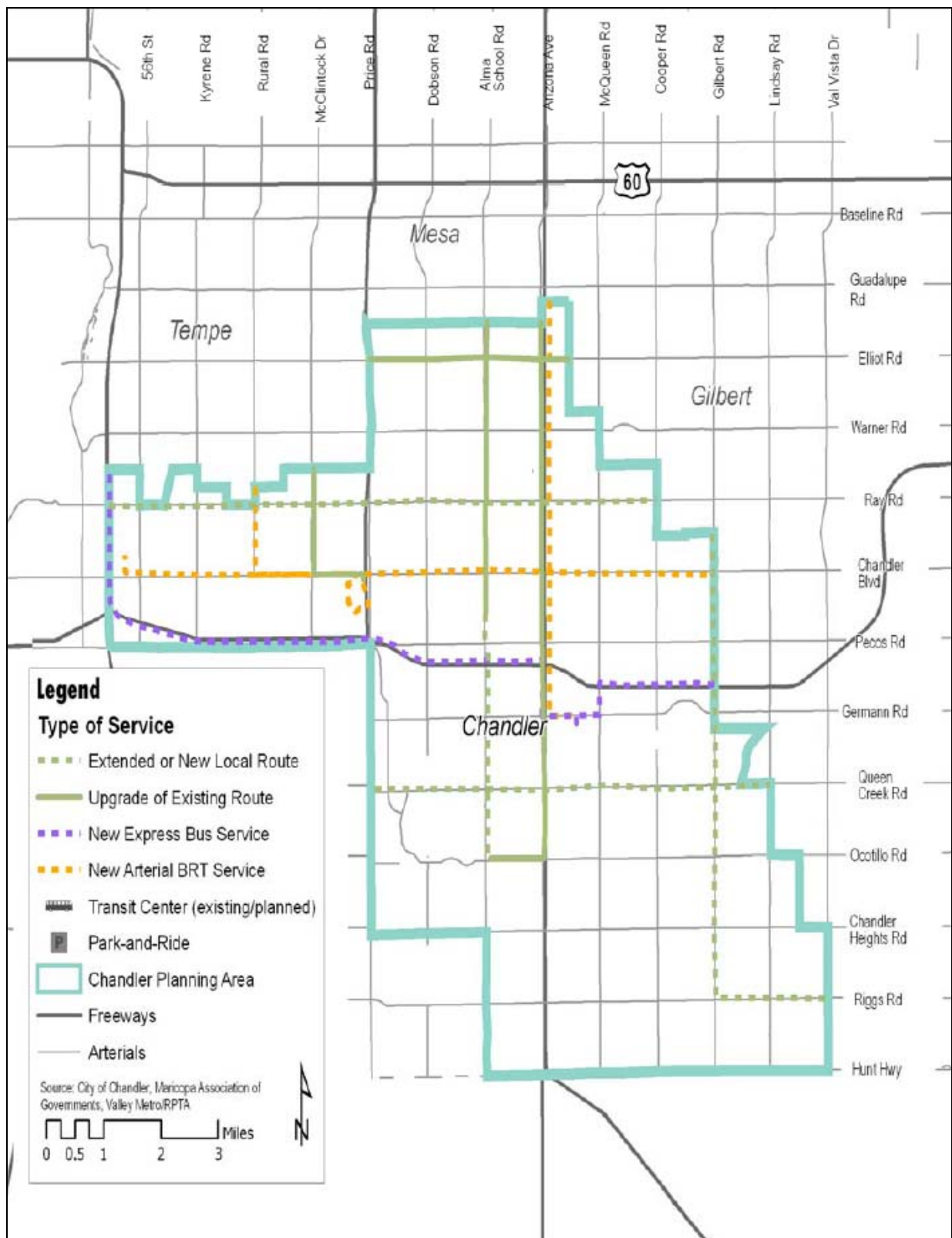
### Regional Transit Plans

**MAG Regional Transportation Plan:** The Maricopa Association of Governments (MAG) Regional Transportation Plan (RTP) was approved by voters in 2004 through Proposition 400, which extended the region’s half-cent sales tax for transportation. The RTP includes a number of transit improvements programmed for the City of Chandler, including transit operating and facility improvements. Figure 5-3 shows planned improvements in Chandler based on regional transit plans. The RTP incorporated many projects that had been recommended at local levels, and therefore supersedes some previous local plans. The most recent version of the RTP is the 2007 Annual Update. Valley Metro/RPTA is responsible for oversight of the Transit Element of the RTP, and has performed several follow-up studies to the RTP that further refine projects identified in the RTP. As mentioned previously, the RTP is subject to the tax revenues and tax revenues have been down during the 2009 economic downturn and accordingly, a number of transit services throughout the valley and Chandler will not be able to be funded in the Proposition 400 life cycle.

**MAG Transportation Improvement Program (TIP):** The current MAG FY 2007-2011 TIP identifies highway and transit projects programmed for construction throughout the region in the next 5 years. The most recent version of the TIP incorporates the near-term RTP improvements.



Figure 5-3: Proposed Regional Transit Plan Projects (2004)





## 5.2.8 Neighboring City Plans

**Town of Gilbert:** While the Town of Gilbert currently has only limited transit services, Chandler and its neighbor to the east are linked by more than 15 miles of shared border. Transit service operating on any of Chandler's east-west arterials – and several north-south arterials – will inevitably cross the shared border. Thus, it is important to understand the Town's plans for transit.

The Town of Gilbert General Plan was approved by voters in November 2001, and was amended by the Town Council in April 2006. The General Plan incorporates elements of the previously approved Gilbert/East Valley Long-Range Transit Plan, which designated Williams Field Road as a high capacity corridor to link Regional Transit Plan Projects in Chandler & vicinity destinations in Chandler, through destinations in Gilbert, to the ASU Polytechnic campus and the Williams Gateway Airport in Mesa. The plan proposes future park-and-ride facilities at Val Vista Drive and Germann Road, and at Williams Field Road and Greenfield Road. Proposed local bus routes include service on Williams Field Road, Greenfield Road, Power Road, Elliot Road and Baseline Road (these would generally be extensions of existing Valley Metro routes). Express bus services on Williams Field Road and Val Vista Drive are also included in the Town's plans.

**City of Mesa:** Although Chandler shares a short border with Mesa on its northern edge, several north/south routes and an express route currently operate across this border. In addition, Mesa funds several routes north of the Gilbert border that may eventually be extended as far south as the Chandler Airpark. Thus, Mesa's transit plans have implications for Chandler.

In May 1998, Mesa voters approved a 0.5 percent Quality of Life Sales Tax for various improvements. At the end of 2006, 50% of the tax expired, with the remainder continuing for on-going operations and maintenance needs in the various program areas. These improvements include funding for the following: 1) public safety (police and fire); 2) library, recreational, and cultural; 3) arts and entertainment, and 4) transportation (primarily transit). Total transportation funding accounted for approximately 15% of the Quality of Life Sales Tax. Streets activities included funding for left turn lanes and intelligent transportation systems. Transit activities included funding for bus pullouts, transit capital, transit maintenance, and service expansions.

The Mesa Transportation Plan, last updated in July 2002, addressed a range of transit services, including local bus, express bus, bus rapid transit (BRT), neighborhood circulators, transit priority corridors, light rail transit, paratransit and commuter rail. In addition, the plan included transit facilities such as park-and-ride lots, a downtown transit center, and an operations and maintenance facility. However, Mesa voters rejected a city sales tax effort in 2005 and future transit improvements largely comprise those identified in the RTP and funded regionally.

**City of Tempe:** Since 1996, the City of Tempe has had a dedicated half-cent sales tax for transit improvements. The Tempe General Plan was adopted by the Tempe City





Council in December 2003. The Transportation chapter is designed to guide the further development of a citywide multimodal transportation system integrated with the City's land use plans. The Transit section of the Transportation chapter focuses on increasing available transit modes and services and facilitating connections among transportation modes, which affects the several north/south and east/west-running routes that currently operate or may be extended to provide service within Chandler. Specific plans include increasing and extending transit service hours, implementing new routes (including express bus and neighborhood circulator routes), and implementing pedestrian/bicycle improvements and bus pullouts. The City of Tempe has identified several focus areas for new neighborhood circulators, one of which is in south Tempe near the border with Chandler.

**City of Phoenix:** Though Chandler shares only a small border with the City of Phoenix, the Valley's largest city. Phoenix operates and funds a tremendous amount of transit and its plans impact nearly every city in the region. Voters in the City of Phoenix approved a city transit plan, Transit 2000, and accompanying four-tenths percent sales tax in March 2000. Funding will be used for enhancements to fixed-route and express bus service, which has an impact on routes that cross the Chandler border. In addition, Phoenix' transit sales tax helps fund light rail implementation and operations. The City of Phoenix express bus program, known as RAPID, has been a transit success – demonstrated by seemingly limitless ridership growth – and RTP express bus routes emulate many of its characteristics.

**Gila River Indian Community (GRIC):** The City of Chandler shares the southern border with the GRIC. No community transit plans have been identified, however, the City has had discussions with GRIC on extending route 65 south on Kyrene Road to the casino.

### 5.2.9 Transit System Quality and Performance

Transit system success can be measured and evaluated in many different ways. This section examines Chandler's fixed-route transit services in terms of coverage, reliability, ridership, and cost. Paratransit services are evaluated in terms of ridership, cost, and reliability. Where data are available for more than one year, trends in these measurements are also evaluated.

#### **On-Time Performance**

In FY2008, the Valley Metro system as a whole had a very good on-time performance of 92.07%. Most of the routes that operate within the City of Chandler performed at or above the system average. However, routes 81 and 108 performed under 90% and route 156 performed just slightly below the system average. Table 5-6 summarizes on-time performance of Chandler bus routes in FY2008.



**Table 5-6: On-Time Performance**

Route	On-time Performance (FY2008)
511	Not Available
540	98.30%
541	97.91%
542	Not Available
65	93.86%
72	94.50%
81	89.80%
96	94.61%
104	95.75%
108	88.73%
112	92.44%
136	93.83%
156	91.30%

*Source: RPTA FY2008 Transit Performance Report*

**Amount of Service**

The amount of transit service provided is measured in vehicle revenue miles. Revenue miles are defined as the distance traveled from the point of the first passenger pick-up to the last passenger drop-off. Revenue miles do not include travel during scheduled time off such as driver lunch breaks. Based on Valley Metro’s annual ridership reports from fiscal year 2002 through 2008, Table 5-7 shows the growth of transit service in Chandler over time.

**Table 5-7: Vehicle Revenue Miles Over Time**

Fiscal Year	Vehicle Revenue Miles	Percent Change from Prior Year
2007-2008	745,602	38%
2006-2007	541,135	10%
2005-2006	493,780	10%
2004-2005	448,859	-6%
2003-2004	476,331	0%
2002-2003	476,331	38%
2001-2002	345,171	-



As Table 5-7 shows, the amount of transit service provided in Chandler has more than doubled in the past seven years. However, the amount of service provided has not increased equally on all routes. Table 5-8 shows the difference in revenue miles provided on each route on an average weekday in October 2008 versus the previous year. (According to Valley Metro/RPTA, October best represents average system-wide conditions.)

From October 2007 to October 2008, the amount of service provided on most routes in Chandler was roughly the same. New routes 65, 96, and 511, and enhanced service on route 156, all combined to increase the amount of transit available as a whole.

Routes 96 and 156 were previously supported by local funds, but are now funded by Proposition 400. This change in funding source allowed the City to use the freed-up local funds to enhance service on route 65. These funding increases demonstrate the importance of Proposition 400 funding to the City's ability to increase transit service overall.



**Table 5-8: Daily Vehicle Revenue Miles by Route (within Chandler)\***

Route	Name	Daily Vehicle Revenue Miles	
		October 2007	October 2008
511	Chandler/Scottsdale Airpark	n/a	59
540	Chandler Express (via Tempe)	44	44
541	Chandler Express (via Mesa)	80	80
542	Chandler/Downtown Express	n/a	n/a
65	Kyrene Road	n/a	38
72	Rural Road	428	424
81	McClintock Drive	139	139
96	Dobson Road	n/a	873
104	Alma School Road	290	290
108	Elliot Road	108	108
112	Arizona Avenue	247	247
156	Chandler Boulevard	644	968

*\*Route 542 began operating in January 2009. Routes 65 and 96 began operations in Chandler in July 2008. Miles for route 136, which operates on the border between Chandler and Gilbert, are allocated to the Town of Gilbert.*

## Ridership

Ridership data is collected and summarized on a monthly and annual basis by Valley Metro/RPTA. Ridership data, measured as the number of boardings, is available for the system as a whole and is broken out by route and by jurisdiction.

Table 5-9 shows the annual ridership for the past seven fiscal years in the City of Chandler. The table also shows the percent change in ridership from the prior year for the City, as well as for the complete Valley Metro system.

**Table 5-9: Annual Ridership Trends**

Fiscal Year	Total Boardings (Chandler only)	Percent Change from Prior Year (Chandler only)	Percent Change from Prior Year (Valley Metro)
2008-2009	932,621	34%	15%
2007-2008	693,821	36%	3%
2006-2007	509,471	6%	-2%
2005-2006	482,234	7%	5%
2004-2005	448,859	0.2%	4%
2003-2004	448,107	19%	7%
2002-2003	375,959	11%	12%



As the data shows, ridership in the City has grown steadily in recent years, outpacing growth on the Valley Metro system as a whole for five of those years. In the most recent fiscal year, ridership grew substantially on Valley Metro overall, but increased at an even greater rate in Chandler, with ridership topping 900,000 for the year.

### **Ridership on Individual Routes**

Valley Metro's annual ridership reports describe the total annual boardings by individual routes in Chandler. Table 5-10 shows ridership in FY 2008-2009 on the routes that operate in Chandler. Figure 5-4 shows how ridership on each route has changed over the last seven years.

As this data shows, ridership on all routes has increased in the past year, mirroring national trends in transit ridership. The most popular route in Chandler in terms of total boardings is route 156, which operates on Chandler Boulevard. The ridership on route 156 has increased dramatically since 2000, and especially in the last year. Route 72 is similar in annual boardings and growth rate. Route 112 ridership declined from 2000 to 2002, but increased over the last year to have more than 128,000 riders. Ridership on the two routes with the lowest annual boardings (routes 81 and 108) has been flat or slightly declining in recent years. Ridership on the City's two express routes (540 and 541) declined or was flat over the majority of the period shown.

### **Route Productivity**

While overall ridership provides one picture of route popularity, looking at boardings per revenue mile provides a way of comparing routes against one another and against the system as a whole.

Table 5-11 shows the productivity of each route, overall transit productivity in Chandler as a whole, and across the Valley Metro system. The table also provides figures for the previous fiscal year as a measure of the change in route performance over time.

Route 112, which had the third-highest total boardings in 2008, was Chandler's most productive route in October 2008. At 0.9 boardings per revenue mile, the overall productivity on Chandler transit routes is lower than the Valley Metro system average of 1.8; but productivity in both Chandler and the Valley Metro system as a whole decreased in the past year. This may be due to the large increase in services throughout the system, with which ridership has not yet caught up. Overall, these productivity figures show a growing transit system.



**Table 5-10: Total Annual Boardings in FY 2008-2009, by Route (Chandler Only)**

Route	Name	Annual Boardings
65	Kyrene Road	18,903
72	Rural Road	161,724
81	McClintock Drive	35,159
96	Dobson Road	129,717
104	Alma School Road	95,911
108	Elliot Road	25,375
112	Arizona Avenue	128,119
156	Chandler Boulevard	277,397
511	Chandler/Scottsdale Airpark	4,805
540	Chandler Express (via Tempe)	10,867
541	Chandler Express (via Mesa)	33,434
542	Chandler/Downtown Express	11,210



**Table 5-11: Weekday Route Productivity, 2008 vs. 2007**

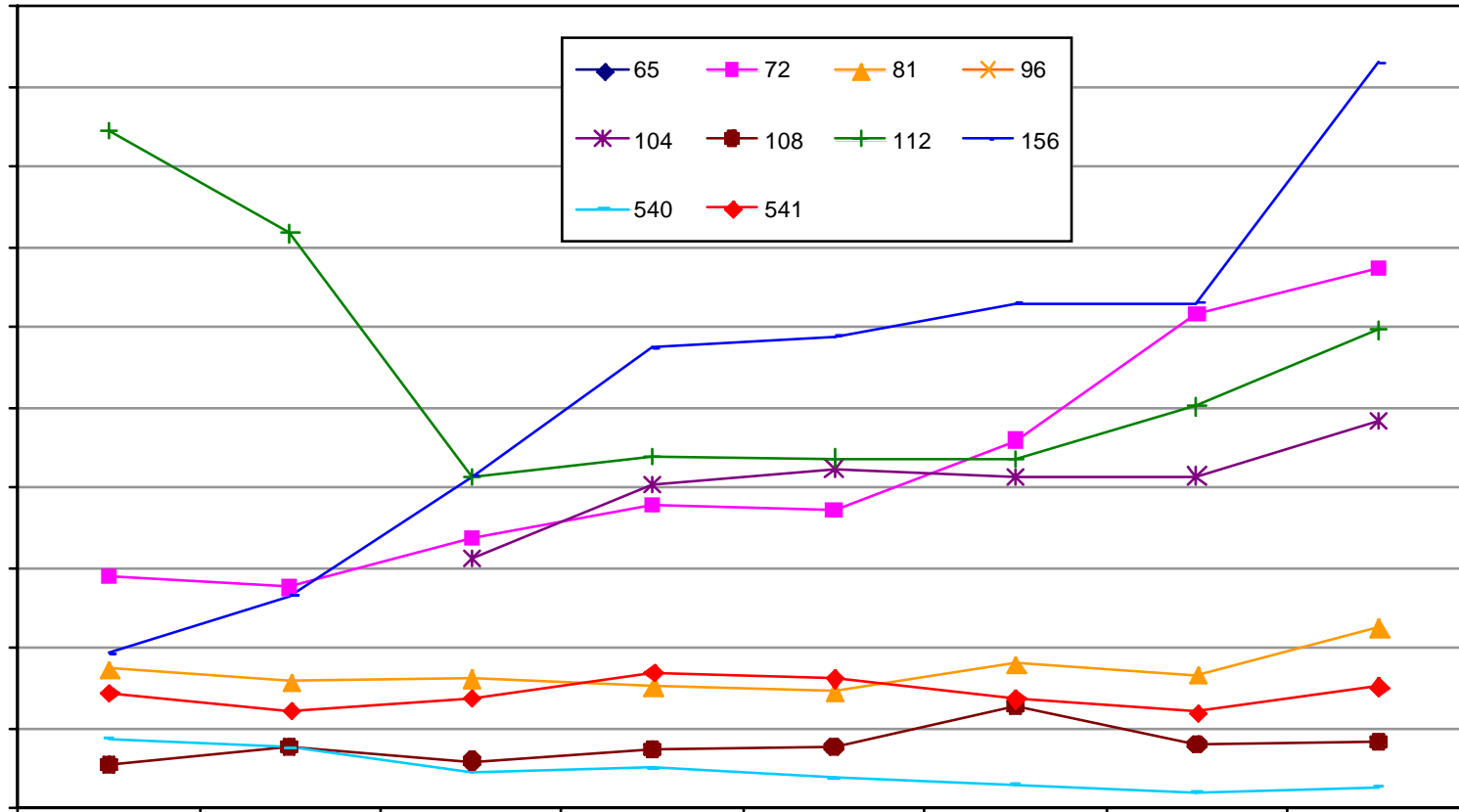
Route	Name	Boardings Per Revenue Mile	
		October 2007	October 2008
65	Kyrene Road	n/a	0.3
72	Rural Road	1.6	1.2
81	McClintock Drive	1.7	1.1
96	Dobson Road	n/a	0.3
104	Alma School Road	1.6	1.4
108	Elliot Road	0.7	0.8
112	Arizona Avenue	2.2	2.1
136	Gilbert Road	n/a	n/a
156	Chandler Boulevard	0.7	1.0
511	Chandler/Scottsdale Airpark	n/a	0.2
540	Chandler Express (via Tempe)	2.5*	5.8*
541	Chandler Express (via Mesa)	8.2*	10.6*
542	Chandler/Downtown Express	n/a	n/a
Chandler		1.1	0.9
Gilbert		0.3	0.4
Tempe		1.9	1.7
Scottsdale		1.1	1.4
Valley Metro		2.07	1.8

*Source: Valley Metro Monthly Ridership Reports*

*\*Express route productivity is shown in boardings per trip, rather than boardings per mile*



Figure 5-4: Annual Ridership by Route 2000 – 2008



\*Ridership on route 112 experienced a steep decline in FY02-03 when the route was split to create route 104 on Alma School Road.





## Financial Efficiency

Valley Metro/RPTA produces an annual summary of route performance measures in its annual Transit Performance Report. The report details a number of fiscal measurements of each of the Valley Metro routes. Table 5-12 provides a summary for routes that operate in Chandler. (Note that the information below applies to the entire route, not just the portion operating in Chandler.) Each measure provides a different way of evaluating the route.

**Table 5-12: Route Cost-Efficiency Characteristics 2007-2008**

Route	Name	Farebox Recovery Ratio (percent)	Operating Cost per Boarding	Subsidy (Net Operating Cost) per Boarding
540	Chandler Express (via Tempe)	17%	\$5.41	\$4.47
541	Chandler Express (via Mesa)	19%	\$4.71	\$3.80
65	Kyrene Road	15%	\$4.48	\$3.82
72	Rural Road	22%	\$3.18	\$2.49
81	McClintock Drive	15%	\$4.39	\$3.71
96	Dobson Road	25%	\$2.70	\$2.03
104	Alma School Road	25%	\$2.57	\$1.92
108	Elliot Road	10%	\$6.91	\$6.25
112*	Arizona Avenue	35%	\$1.89	\$1.24
156	Chandler Boulevard	6%	\$11.47	\$ 10.75
	Veolia Phoenix	28%	\$3.10	\$2.34
	Veolia RPTA	21%	\$3.53	\$2.84
	Veolia Tempe	16%	\$3.64	\$3.19
	Valley Metro System Total	22.4%	\$3.05	\$2.37

Source: Valley Metro Transit Performance Report, December 2008

**Note: The Valley Metro system experienced an unusually high rate of farebox failures during this period and this loss of revenue could have had a significant affect on the 2007-2008 data.**

Farebox recovery ratio measures the amount of operating costs that are paid for by passengers through fares. A higher farebox ratio means that more of the costs of providing transit are borne by passengers and can be a result of higher route productivity, higher fares paid, or fewer passengers using discount fares or passes, among other reasons. Operating cost per boarding measures how much service costs to provide for each passenger who boards. (Net operating costs subtracts out fares



paid.) Cost per revenue mile is the cost to provide each mile of service; in the Valley, this cost is negotiated with each vendor.

The Valley Metro system as a whole has a farebox ratio of about 22.4%. In Chandler, the route with the highest farebox ratio is the 112 (Country Club/Arizona Avenue), where 35% of the operating costs are paid for by passengers. Operating costs per boarding on express routes and on routes 108 (Elliot Road) and 156 (Chandler Boulevard) are high, most likely due to the length of the routes. Currently, about half the local fixed-route services in Chandler have lower farebox ratios and higher costs per boarding than the Valley Metro system overall. Since it does not manage or operate any of its transit directly, Chandler has limited control over operating costs. However, efforts by the City to increase ridership would have positive effects on the farebox recovery ratio and the operating cost per boarding.

### **Bicycles on Transit**

While many people walk to their stop or drive to a park-and-ride, bicycling to transit is a very important means of transit access. In fiscal year 2007-2008, over 30,000 passengers used the bicycle racks on transit buses in Chandler, an increase of 32% from the previous year.

### **Paratransit Service Costs**

A recent Valley Metro/RPTA Regional Paratransit Study examined each of the Valley's paratransit systems in depth. According to this report, in fiscal year 2005-2006, East Valley DAR's hourly operating cost was slightly higher than the regional average. In addition, trip lengths were slightly higher than the regional average and hourly productivity was slightly slower. Overall, however, the cost per boarding (\$30.51) and cost per mile (\$3.74) were reasonable and average.

The Regional Paratransit Study also examined the Cabs for Coupons program and found that, as of March 2007, Chandler had 32 registered participants in the program. The budget for the program in fiscal year 2006-2007 includes a \$50,000 contribution from the City of Chandler.

## **5.3 Evaluation of Transit Conditions**

The transit system in Chandler currently serves the northern, more developed portion of the City. Since the approval of the Regional Transportation Plan (RTP) in November 2004, service levels have increased, and will continue to increase, over the life of the 20-year plan. However, service gaps will continue to exist without additional transit investment.

With the growth in the southern portion of the City and greater densification of areas already developed, there is a need and opportunity for expansion of the transit system. A well-structured, easy-to-use transit system is an integral component to fostering a sustainable city.



***The City of Chandler has developed goals and objectives for its transportation system that, if successfully implemented, will make Chandler a “Most Connected City.” If the City is to be considered well-connected by transit, we recommend the following conditions:***

- ***Transit routes that provide service to major destinations and activity centers within the City and throughout the Valley.***
- ***Transit service that is available at times and frequencies that make it easy for people to use the system; not only during the peak commute period, but also on weekends and during the evenings.***
- ***Planned transit services keep pace with expected development.***
- ***Seamless transfers to and from transit and other forms of transportation.***

The consulting team performed several different analyses to assess whether current and planned transit service will help the City meet its goal of being a “Most Connected City.” The geographic coverage of existing and planned services was examined to determine how well transit serves existing activity centers and whether planned implementation keeps up with projected development. In addition, coverage was examined to determine how long transit services operate each day and the trip frequency during peak and off-peak hours. Lastly, the consulting team focused on the transit user by speaking with transit riders at the Chandler Fashion Center to understand how they perceive their needs being met by the transit system.

### **5.3.1 Geographic Coverage**

Arterial fixed-route transit service is currently limited to several arterial roads in the portion of Chandler north of the Loop 202. Although limited in the extent to which these routes provide service within Chandler, they provide good access throughout the Valley due to the length of the routes and the opportunity to transfer to other routes. Routes 65, 72, 81, and 96 (serving Kyrene Road, Rural Road, McClintock Drive, and Dobson Road, respectively) connect to the Central Phoenix/East Valley light rail, which provides high-quality transit service to downtown Mesa, ASU/downtown Tempe, downtown Phoenix and the Central Avenue corridor.

Express route service has traditionally focused on service to downtown Phoenix, the Valley’s largest concentration of employment. However, express route 511, implemented in 2008, provides Chandler residents access to Scottsdale Airpark and other destinations along the east loop of the 101 Freeway. (Route 511 is bi-directional, providing access to destinations in Chandler, as well.)

### **Development and Needs for Service**

Transit in the Valley is generally present along major arterial roads (the “mile streets” of the Valley’s grid network), where development is also generally clustered. Many of Chandler’s major arterials do not currently have transit service, nor is any planned for the future, even in areas where growth is expected. Not all of these arterial roads serve developed areas. Development south of the Loop 202, while increasing, remains



partially developed today. However, projections from the Maricopa Association of Governments indicate that household and employment densities will gradually approach thresholds for minimum transit service on many arterial roads. Although there are no firm rules, commonly accepted density thresholds are three dwelling units per gross acre or four jobs per gross acre. In particular, Warner Road is already densely populated. Pecos Road is fairly densely populated and has pockets of employment; these densities are projected to increase over time. The Price Road corridor and the eastern portion of Queen Creek Road are also projected to experience greater employment density. The southeast corner of the City along Riggs Road – where some transit is planned – is also densely populated. (Maps in the appendix show population and employment densities in 2005 and 2030.)

### 5.3.2 Transit Service Levels

Although no City standard currently exists regarding desired service levels for transit, the 2007 Regional Transportation Plan recommended a minimum service level for regional transit routes that cross city borders. This service standard is as follows:

- Headway: 30 minutes minimum
- Weekday Service Span: 17 hour minimum (example – 5 a.m. to 10 p.m.)
- Weekend/Holiday Service Span: 16 hour minimum (example – 5 a.m. to 9 p.m.)

Currently, four of the local routes that operate in Chandler – Routes 65 (Kyrene Road), 72 (Rural Road), 96 (Dobson Road), and 156 (Chandler Boulevard) – meet this minimum service standard. One of the remaining routes – 81 (McClintock Drive) – meets the minimum headway on weekdays, but does not have weekend service. The remaining routes do not currently meet the regional standard. Table 5-13 summarizes this information.

**Table 5-13: Route Performance versus Regional Service Standards**

Route	Meets regional service standard?	
	Weekday	Weekend
65	Yes	Yes
72	Yes	Yes
81	Yes	No
96	Yes	Yes
104	No	No
108	No	No
112	No	No
136	No	No
156	Yes	Yes

*\*Routes 81, 104, 108, 136, and 112 will become regionally funded supergrid routes in the coming years; thus, their service level will be enhanced to meet regional standards.*

*Source: Valley Metro/RPTA, PB*



### 5.3.3 The Transit Rider

Valley Metro's 2007 Origin-Destination Study Draft Final Report ("O&D Survey") provides a great deal of information about transit riders in the Valley and underscores the importance of transit in providing access to homes, jobs, and services. Demographic information indicates that:

- A majority of riders have an annual household income under \$35,000.
- Roughly half of transit riders take transit because they do not have another transportation option.
- More than two-thirds of transit riders surveyed are employed. Trips to and from work and home are the dominant trip type.
- The O&D Survey compared recent findings to a 2001 survey and found "Valley Metro weekday riders in 2007 are more transit dependent than in 2001," which is reflected in the use of transit to a greater variety of locations and a decline in vehicle ownership.

The 2007 O&D Survey did not examine rider response by type of service, but the 2001 survey indicated that riders of commute-oriented express routes differ from the average rider of the arterial fixed-route system. Express route riders tend to be higher income and have a vehicle available for trips. In other words, express route riders tend to be "choice" transit riders, whereas arterial fixed-route riders are more likely to be "dependent" on the transit system.

Interviews with passengers aboard transit services in Chandler reflect similar findings\*. Generally, the riders interviewed on the local service took the bus because they were either temporarily or permanently without an automobile. However, all riders interviewed aboard the express route mentioned that they had a car at home and took transit to save money on gas and maintenance or because it was more convenient. Most interviewees – on both the local and express service – took the bus to work, but a variety of trip purposes – school, shopping, court – were indicated.

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\* On-board interviews were conducted in March 2008. While the comments obtained from these interviews are valuable, the sample size was small and not randomly selected. The results should not be considered representative of the transit system as a whole.



### 5.3.4 Conclusions

As the 2007 O&D Survey pointed out, the availability of transit service is important to mobility. In the absence of transit, many people would need to rely on other means of transportation or they may not be able to reach their destinations; whether that destination is for employment, shopping, medical trips, or something else. Transit also provides an option for people who wish to save money on transportation costs, contribute to a cleaner environment, or simply enjoy the service that transit provides.

The transit services that are planned in the Regional Transportation Plan and funded by Proposition 400 will eventually add over seventy miles of new local, express, and bus rapid transit service in Chandler. There are also regional plans for paratransit expansion and coordination. In addition, the RTP helps fund amenities at bus stops and new transit facilities, such as park-and-ride lots and transit centers. However, the RTP provides funding for these new services and amenities over a twenty year period ending in FY2026. Because the funding is for regional transit service, some local transit services will not be funded. In addition, service levels planned in the RTP may not keep up with future demand and over sixty miles of arterial roads in Chandler will remain without local fixed-route services at the full implementation of the RTP in 2026.

***To reach the City's vision of being a "Most Connected City" with transit services, the following transit service issues must be addressed:***

- ***When possible, design new developments with transit in mind.***
- ***Two key employment areas – the Price Corridor and Chandler Airpark – will need transit service.***
- ***Provide more frequent trips for more convenient service, especially during the peak commute hours.***
- ***Improve pedestrian, bicycle and automobile connections to transit services.***
- ***Adjust existing and planned routes to better serve areas of the City***
- ***Identify additional funding for transit services.***
- ***Incorporate transit-friendly design features into new development.***
- ***Improve/upgrade transit passenger amenities at bus stops.***
- ***Work with major employers to include/fund transit as part of their trip reduction programs.***

Recommendations to address these gaps are made in the next section.

## 5.4 Recommendations

This section presents specific recommendations for improvements to transit services and infrastructure to address existing and expected service needs. These specific recommendations are based on a review of existing services, planned improvements,



and information on future development. Adjustments to the existing transit services along with these recommendations are included.

The recommendations are based on providing a mix of transit services that support all residents of Chandler; from transit-dependent riders to those residents who use transit for convenience or to support sustainability efforts. Thus, the specific recommendations support the following objectives for transit service in Chandler:

- **Expand transit services throughout the City and enhance service levels, as appropriate.**
- **Support paratransit service and fixed-route alternatives, including educational programs.**
- **Enhance commute-oriented express services.**
- **Introduce local circulator routes and small bus operations to connect activity centers and areas of the City beyond the reach of fixed-route services.**
- **Provide adequate levels of amenities at bus stops.**
- **Encourage development and design practices to support the increased use of transit.**
- **Evaluate long-term needs for high-capacity transit services.**

Some of the new routes will require funding that has not been identified, while some of the improvements will be funded by Proposition 400\*. The following section details recommendations and funding sources. New routes and changes to existing routes will require coordination with affected neighboring jurisdictions.

#### **5.4.1 Circulator Service (Small Bus Operations)**

As mentioned above, the plan includes recommendations for circulator and small bus operations. Because circulator routes use smaller vehicles than the standard 40-foot bus, they can provide services to areas that are not easily served by standard regional buses or are simply served more efficiently with a small bus. Circulators have been

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\* NOTE: Proposition 400 funding is dependent on sales taxes, which have experienced a steep decline due to the economic downturn in 2008 and 2009. Valley Metro and its member agencies are currently evaluating a response to the decline in funding for transit, which may involve the postponement and/or elimination of current and future transit routes. This includes arterial fixed-route services and bus rapid transit. However, a final program has not yet been determined, and the information in this section reflects the plans as they existed before the economic downturn.



shown to be successful by not only providing a service for intra-city travel, but are effective at providing connections to important regional services such as the Arizona Avenue BRT. Circulators can also allow regional services to operate more effectively by serving very short trips, freeing up regional capacity for long-haul trips. Small bus services will be administered by the City, locally funded, and will use smaller vehicles than the standard 40-foot transit bus.

In the Valley, circulators are currently in service in Phoenix, Tempe, and Glendale. Figure 5-5 shows buses from the ALEX service and Orbit services (administered by Phoenix and Tempe, respectively).

Two policy issues arise with the implementation of circulator service in the City: how to provide service and what fare to charge. Regarding service provision, the City must consider whether to operate service directly or to contract it out. Examples of both means of provision exist in the Valley, with Phoenix and Tempe contracting out service and Glendale operating service in-house. Advantages of contracting out service include flexibility to make changes and the ability to use vehicles provided by a contractor, rather than owning and maintaining a fleet. Advantages of providing service in-house include the degree of control over branding and the ability to dedicate certain drivers to certain routes, allowing a true community amenity to develop over time. Given that circulator services would be brand-new in Chandler, it is recommended that the City contract out service at first in order to have the greatest degree of flexibility in implementing and then adjusting routes. Whether small bus service is contracted out or directly operated, the City may need to provide a small fleet maintenance and operations facility.

The second policy issue is deciding what fare to charge for circulator services. The Valley provides examples of free circulators – such as those provided in Phoenix and Tempe – and circulators on which a fare is charged, as in Glendale, which has a nominal fee of \$0.25 per ride. Circulator fares are generally seen as a policy issue rather than as a means of generating operating revenues because the fares – if present – are low, and a circulator service is often seen as a community asset meant to provide access rather than pay for itself. In some cases, the cost of collecting fares may outweigh the revenue collected. Systems that charge fares may do so in order to create a perception of value.





It is recommended that a Circulator Study be completed to determine the operating characteristics for the Chandler Circulator System. Issues to be studied include:

- Hours of Operation
- Service Levels
- Number of Vehicles
- Operating Characteristics of each route (one route may focus on transporting students while another may focus on effectively transporting seniors and persons with disabilities)
- Fare Structure
- Integration with existing fixed route services

**Figure 5-5: Existing Small Bus Services in the Valley**





### **Dial-A-Ride Service (ADA and non-ADA Paratransit)**

Regarding American's with Disabilities Act (ADA) Paratransit services, East Valley Dial-a-Ride ADA service is funded in the RTP.

**It is recommended that the City of Chandler continue participating in the many alternative transportation programs providing services to residents. They are East Valley Dial-A-Ride; the East Valley Ride Choice "Coupons for Cabs" program, a mileage reimbursement program paying drivers by the mile to transport users; and grant support to non-profit agencies that provide transportation services to seniors and people with disabilities. Related recommendations include the continued support of trip reduction efforts and the development of a travel training program at the Chandler Senior Center. The City of Chandler should continue supporting the regional effort led by Valley Metro/RPTA to provide all ADA-certified individuals free fixed-route use\*. The City should also encourage the development of its own ADA marketing messages to ensure that residents are aware that dial-a-ride service is only one of several public transit options available to them.**

### **Light Rail Transit (LRT)**

A High Capacity Transit Major Investment Study (MIS) was undertaken in 2001 to identify the high capacity transit projects that could address the future travel demands in Chandler and other parts of the east valley. The study reviewed a number of factors, including travel patterns, the region's rail and express service plans, and the physical and financial requirements of such a service or services. The study was approved by City Council in February 2003, and is available on the City of Chandler website at [www.chandleraz.gov](http://www.chandleraz.gov).

Four high capacity alternatives were identified in the study; including two light rail options. One on Rural Road terminating at Chandler Boulevard and a second on Arizona Avenue terminating at Pecos Road. These two rail options were identified for implementation in twenty or more years, which would match long term growth in population, employment and travel demand.

BRT and LRT, both high capacity transit services, are often linked. Many future LRT corridors will first have BRT service. The Rural Road and Arizona Avenue corridors are

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\* This issue will be addressed in the near future by the Valley Metro/RPTA Board of Directors.



both identified for BRT and the City is committed to the future development of both corridors as LRT.

Specific recommendations are presented below for the near-term (the next five years), mid-term (five to ten years), and the long-term (greater than ten years) in the following pages.

**It is recommended that Chandler formally commit to the creation and funding of Light Rail service in the City. It is vital that staff increase its involvement in regional rail planning activities and work towards obtaining regional funding for rail in the future.**

#### 5.4.2 Near-Term Recommendations 2010 – 2014

##### Fixed-route

Near-term improvements to existing fixed-route transit services are recommended to ensure that transit is present in the City where it is appropriate and that the routes provide an adequate level of service. In some cases, such as on route 108 (Elliot Road), the transition of the route to supergrid service will enhance the service level. In others, extension of fixed-route services is recommended for areas that have a level of development generally accepted as supporting transit. All extensions and new routes will require coordination and funding agreements with neighboring jurisdictions.

##### Express

Express bus services in the near-term feature the ongoing monitoring of services to ensure their effectiveness in serving the community. The restructuring of routes 540 and 541, and the addition of the route 542, will provide more efficient service for the community by routing express bus services onto freeways as directly as possible. Restructuring of these routes will require coordination with adjacent jurisdictions (the cities of Phoenix, Tempe, and Mesa), construction of additional park-and-rides, and completion of the freeway HOV lanes.

Once the 540 and 541 routes are restructured, it is recommended that each of the three express routes add two additional trips to provide an increased level of express bus service. Combined, the service levels for the three downtown-Phoenix oriented express routes should approach that of the City of Phoenix “RAPID” express bus service. Additional express bus trips would require that funding be identified.

##### Circulators

In addition to improvements to the local fixed-route services, a circulator route is recommended to connect major downtown area destinations, as well as providing a connection for residents and visitors to the regional Arizona Avenue BRT line, which connect to the Phoenix LRT system.



## Supporting Facilities and Policies

Successful transit is supported through development patterns and supporting infrastructure. In the near-term, the City should develop and formalize its own Transit-Oriented Development (TOD) Guidelines. These guidelines would provide information for the development community regarding designing new developments in a transit-friendly way. A set of TOD Guidelines for Chandler could include information on “retrofitting” sites that were originally developed in an automobile-oriented way.

The City should continue to develop capital infrastructure needed to support transit services. These include bus stop improvements for existing and new routes. In addition, wherever possible, bikeways should provide access to the transit system. Bicycle and pedestrian access should be a special consideration for park-and-rides and transit centers.

To support circulator and small bus operations, the City may require a maintenance and operating facility. A feasibility and site selection study will need to be completed in order to identify need and location. An additional locally dedicated funding source will be required to implement any of the recommended circulators.

It is also important that the City focus on the creation and/or implementation of development policies that support high capacity transit services. Obtaining right-of-way on the currently identified high capacity corridors is key to the future creation of such services.

### Park and Ride Facility

It is recommended that the City design and construct a Park and Ride Facility in North Chandler.

Specific near-term recommendations are summarized in Table 5-14 and shown on the map in Figure 5-6.



**Table 5-14: Near-Term Recommendations 2010-2014**

Service Type	Route	Route name	Recommendation	Implementation Date	Funding Source(s)*	Additional Funding (if any)
	104	Alma School Road	Delay extension of route south of Frye Road	N/A	N/A	\$0
	112	Arizona Avenue	Extend route south to South Chandler Transit Center as planned in RTP	FY2014	RTP	\$0
	136	Gilbert Road	Extend to Riggs Road and Val Vista Road/McQueen Road in South Chandler	FY2010	RTP	\$0
	156	Chandler Boulevard	Enhance service frequencies to 15-minutes in peak to match Arizona Avenue BRT. Study deviations to Chandler/Gilbert Community College & Chandler Fashion Center	FY2010	RTP	\$0
Express	511	Scottsdale Airpark	Monitor effectiveness	Existing	RTP	\$0

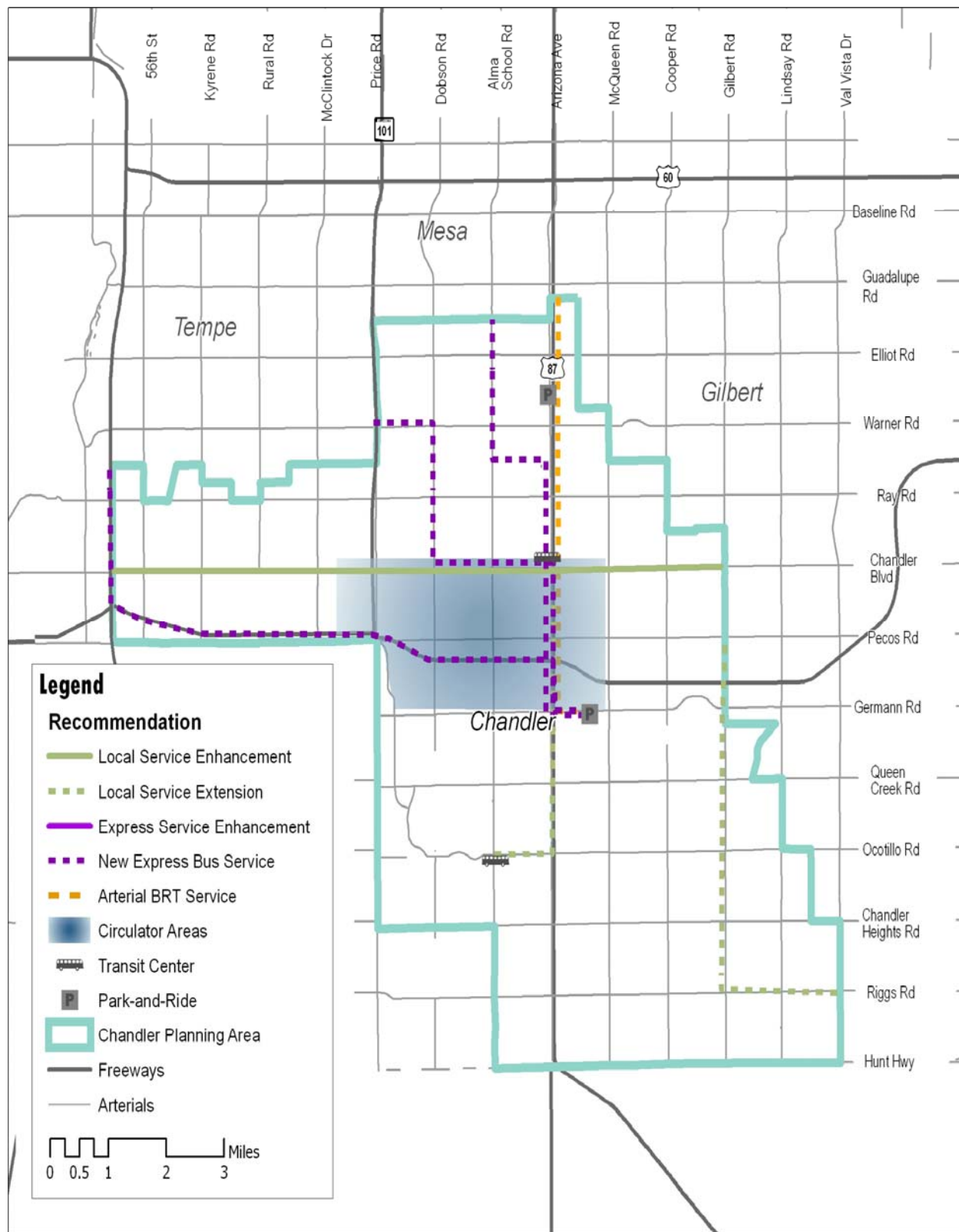
\* Note: Some of the recommended improvements will require coordination of funding from other jurisdictions. Additional/local dedicated funding source required to implement any of the recommended circulators. "Unidentified funding" refers to costs beyond those identified in the RTP.



Service Type	Route	Route name	Recommendation	Implementation Date	Funding Source(s)*	Additional Funding (if any)
	540	Chandler Express	Add one trip	FY2012	City of Chandler/RTP	\$40,000
	541	Chandler Express	Add one trip	FY2013	City of Chandler/RTP	\$40,000
	542	Chandler/ Downtown Express	Add one trip	FY2014	City of Chandler/RTP	\$40,000
BRT	NEW	Arizona Avenue BRT	Implement with southern terminus at Tumbleweed Park-and-Ride	FY2011	RTP	\$0
Park and Ride	NEW	North Chandler Park and Ride	Design and Construct a Park and Ride on Arizona Avenue between Warner and Elliot Roads	FY2012	Federal / Local	tbd
Circulator	NEW	Downtown Circulator	Implement circulator between downtown TC, Chandler Fashion Center, Chandler Medical Center via Frye Road and Pecos Road	FY2015	City of Chandler	\$422,000



Figure 5-6: Near-Term Transit Improvements





### 5.4.3 Mid-Term Recommendations 2015 - 2019

In the mid-term, transit service recommendations are designed to further enhance and expand the transit system. Mid-term recommendations are summarized in Table 5-15 and shown on Figure 5-7.

#### **Fixed-route**

Mid-term recommendations for the fixed-route system continue the types of enhancements envisioned for the near-term. Where appropriate, services are extended and enhanced.

#### **Express**

Mid-term recommendations for express services suggest enhancements for the system rather than expansion. It is anticipated that there will be increased demand for long-distance express services, so mid-term recommendations include increased numbers of trips on all express routes.

#### **Circulator**

In the mid-term, two circulator routes are recommended: a West Chandler service, and an East Downtown extension. The West Chandler circulator would connect with Ahwatukee in Phoenix; the East Downtown circulator would connect downtown Chandler and the airpark. (These proposed routes are identified as circulator areas on the map rather than specific routes.)

#### **ADA/Paratransit**

Mid-term ADA recommendations include continued educational training and RTP planned improvements.

#### **Supporting Facilities & Policy**

Land use development/re-development around the Arizona Avenue BRT stations and opportunities around future Chandler Boulevard BRT stations should be continually reviewed and enhanced.

Mid-term recommendations for transit expansion are based on today's projections of development activities and should be updated as development patterns and rates change.

#### **Staffing**

One or two staff positions in the mid-term are recommended to focus on operating the expanding transit services and non-motorized (bicycle and pedestrian) issues throughout the City. The new staff members would handle such tasks as budget, inter-governmental agreements, grants, contracts, marketing, and service planning. In addition, staff persons could represent the City at MAG and Valley Metro/RPTA committee meetings.



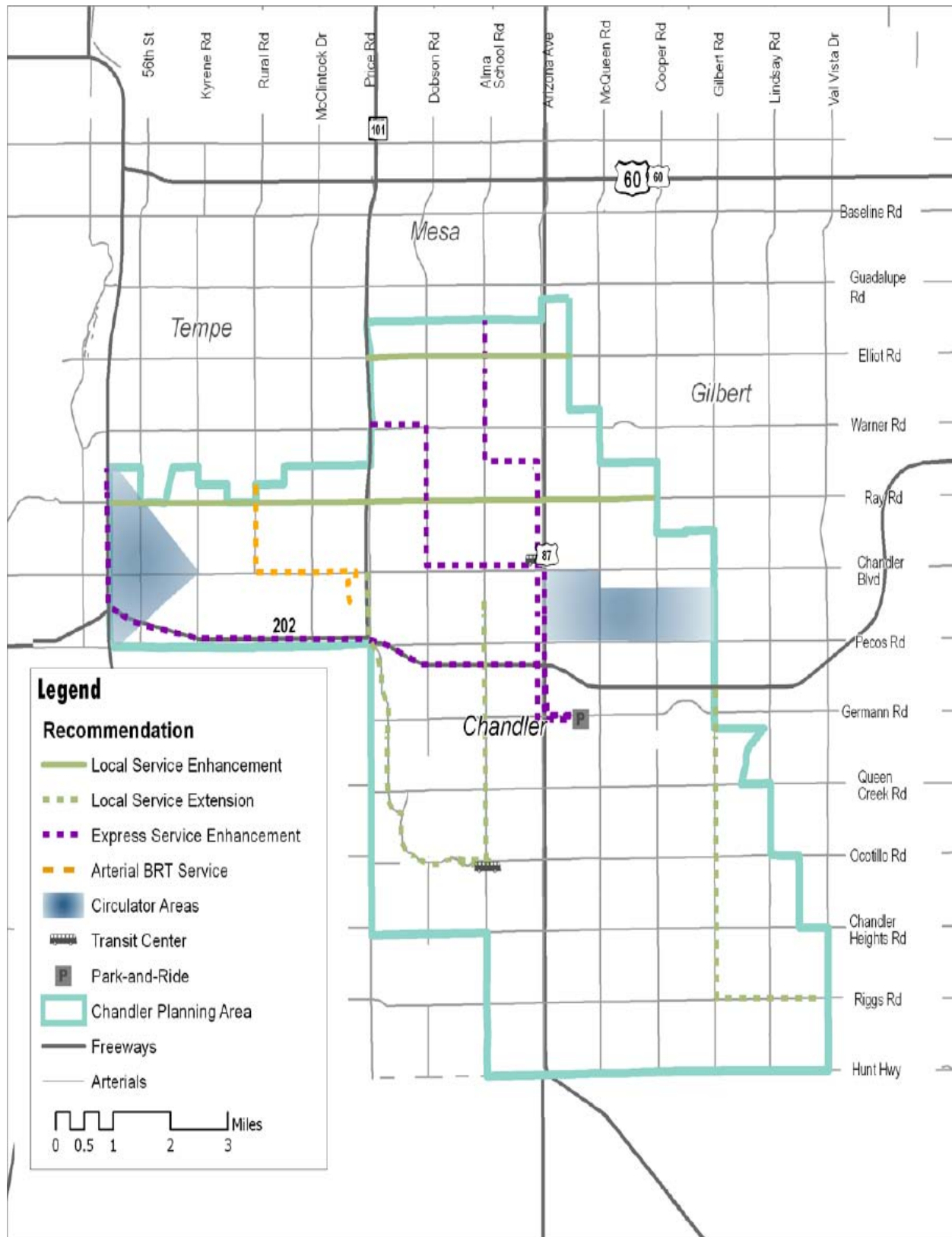


**Table 5-15: Mid-term Recommendations 2015 – 2019**

Service Type	Route	Route name	Recommendation	Implementation Date	Funding	Additional Funding (if any)
Local/ Supergrid	81	McClintock Drive	Extend south on Price Road to South Chandler Transit Center	FY2015	City of Chandler/RTP	\$675,000
	104	Alma School Road	Extend service to South Chandler Transit Center	FY2016	RTP	\$0
	108	Elliot Road	Enhanced service level as planned in RTP	FY2016	RTP	\$0
	NEW	Ray Road	Implement service per RTP	FY2019	RTP	\$0
BRT	NEW	Rural Road BRT	Implement as planned in RTP	FY2018	RTP	\$0
Express	542	Chandler/ Downtown Express	Add one trip	FY2018	City of Chandler/RTP	\$40,000
	540	Chandler Express	Add one trip	FY2018	City of Chandler/RTP	\$40,000
	541	Chandler Express	Add one trip	FY2018	City of Chandler/RTP	\$40,000
Circulator	NEW	East Downtown Circulator	Connect downtown Chandler and the Chandler Airpark	FY2016	City of Chandler	\$375,000
	NEW	West Chandler Circulator	Serves West Chandler and Ahwatukee	FY2017	City of Chandler/ Transit Benefit Area	\$188,000



Figure 5-7: Mid-Term Transit Improvements





## 5.4.4 Long-Term Recommendations 2020 – 2030

### Fixed-Route

Long-term recommendations for transit expansion are based on anticipated growth in southern Chandler in the next twenty years. Service on Chandler's remaining arterials is a potential need in the long-term; at the same time, enhancement of existing transit service is a continuing recommendation.

### Circulator

Circulator services would be expanded to the growing Airpark area, which would serve the retirement communities in southern Chandler. As employment and development around the airpark becomes more intense, a circulator service can help manage the anticipated increase in travel demand.

### ADA/Paratransit

Continued support of ADA services in the long-term includes enhanced coordination efforts and expansion commensurate with fixed-route expansion.

### Express

In the long term, the City's express bus services will consist of two routes – the San Tan Express and the Scottsdale/Chandler Express. Since ridership on express bus services is expected to continue to grow, two additional trips per day are recommended on each route in the long term.

Regional plans for Chandler include the implementation of BRT services on Chandler Boulevard, which provides an interesting opportunity for the City to develop a transit-oriented corridor unlinked to the Central Phoenix/East Valley light rail. In addition, the City's transit needs are likely to grow beyond regional bus services to include special high-capacity services that may include light rail. The City is a member of METRO and participates in high-capacity studies. Three corridors – Arizona Avenue, Rural Road, and Chandler Boulevard – are identified as possible high-capacity corridors. Two single-track branch lines of the Union Pacific Railroad also exist in Chandler, and may provide linkages in a regional commuter rail system. These are the Kyrene Road alignment (terminating at the Lone Butte Industrial Park on the Gila River Indian Community) and the Arizona Avenue alignment just east of downtown. MAG has coordinated commuter rail studies and will continue to do so, with the City's participation.

### Light Rail

Also in the long term, the City will consider the implementation of the two light rail lines (Arizona Avenue terminating at Pecos Road and Rural Road terminating at Chandler Boulevard).

### Park and Ride Facility

It is recommended that the City design and construct a Park and Ride Facility in West Chandler.



Specific recommendations are shown in Table 5-16 and on Figure 5-8.



**Table 5-16: Long-term Recommendations 2020 – 2030**

Service Type	Route	Route name	Recommendation	Implementation Date	Funding	Additional Funding (if any)*
Local/ Supergrid	NEW	Ray Road	Increase peak-hour service to 15-min headways in peak <sup>†</sup>	FY2021	City of Chandler, City of Tempe, Town of Gilbert, City of Mesa	\$400,000
	120	McQueen Road	Extend to Tumbleweed Park-and-Ride	FY2021	City of Chandler	\$529,000
	NEW	Warner Road	Implement new services between ASU Research Park & Gilbert Civic Center	FY2023	City of Chandler/ Town of Gilbert	\$368,000
	120	McQueen Road	Extend route to Queen Creek Road	FY2024	City of Chandler	\$650,000
	NEW	Queen Creek Road	Implement service in FY2019 as described in RTP, but route to Tumbleweed Park-and-Ride along Arizona Avenue	FY2025	RTP	\$125,000 <sup>‡</sup>
6	74	Chandler Boulevard BRT	Implement per RTP	FY2024	RTP	\$0

\* The possibility of a new regional sales tax for transit exists; however, at this point, funding remains unidentified for projects beyond the scope of the current RTP.

<sup>†</sup> The RTP funds new local service on Ray Road, but only at 30-minute intervals. It is anticipated that Ray Road service will require 15-minute service in the peak periods.

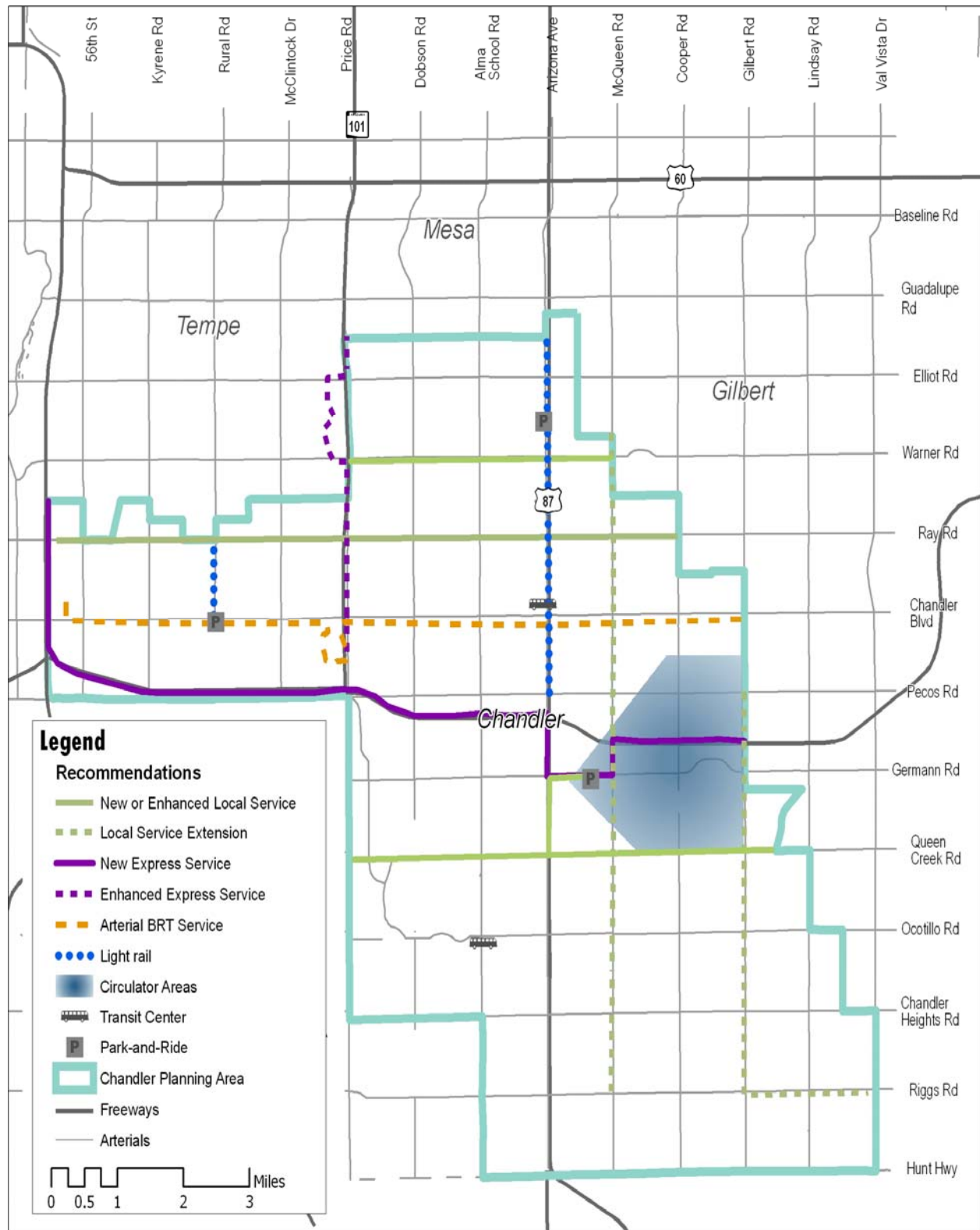
<sup>‡</sup> It is recommended that an extension of this route to City of Maricopa be considered; however, any service to City of Maricopa would not be funded by City of Chandler.



Service Type	Route	Route name	Recommendation	Implementation Date	Funding	Additional Funding (if any)*
Express	NEW	San Tan Express	Implement service per RTP; plus add two trips per day	FY2021	City of Chandler/RTP	\$158,000
	511	Scottsdale/Chandler Express	Add two trips per day	FY2025	City of Chandler	\$71,000
LRT	tbd	Rural Road	Implement light rail service on Rural Road and terminating at Chandler Boulevard	FY2025	tbd	tbd
LRT	tbd	Arizona Avenue	Implement light rail service on Arizona Avenue and terminating at Pecos Road	FY2030	tbd	tbd
Park and Ride	NEW	West Chandler Park and Ride	Design and Construct a Park and Ride facility in West Chandler within one mile of the Rural Road and Chandler Road intersection	FY2025	Federal / Local	tbd
Circulator	NEW	East Downtown/Airpark Circulator	Circulator route serves downtown TC, Chandler/Gilbert Community College, Chandler Airpark, and Tumbleweed Park-and-Ride	FY2020	City of Chandler	\$516,000



Figure 5-8: Long-Term Transit Improvements





### 5.4.5 Facilities

An important component of the overall transit system is the supporting facilities, such as transit centers and park-and-ride lots, which provide points of coordination and opportunity for transit patrons to access multiple transit routes. The City currently has a busy transit center at Chandler Fashion Center (which is also a regional destination) and a 450-space park-and-ride at Tumbleweed Park. Plans call for additional transit centers and park-and-ride lots to enhance community access to the regional transit system. These plans are summarized in the table below.

**Table 5-17: Facilities**

Facility	Routes Served (Future and Planned)			Facility Status
	Express/BRT	Regional/ Supergrid	Local/ Circulator	
Chandler Fashion Center Transit Plaza		72 81 156	West Downtown Circulator	Existing
Tumbleweed Park-and- Ride -450 parking spaces -6 transit bays	511 542 Arizona Avenue BRT San Tan Express	112 120 136	East Downtown/Airpark Circulator Central Circulator	Existing
South Chandler Transit Center		81 96 104 112	Riggs Road service	Site selection pending
Downtown Transit Center	540 541	104 112 156	Downtown Circulator	Arizona Avenue/Chandler Boulevard
West Chandler Park- and-Ride -500 spaces	Rural Road BRT SanTan Express	65	West Chandler Circulator	Not currently funded Identified as southern terminus for South Tempe Corridor Alternatives Analysis
North Chandler Park- and-Ride -250-400 spaces	540 541 Arizona Avenue BRT			Not currently funded Site selection pending
Circulator Bus Operations and Maintenance Facility				Site selection study needed

### 5.4.6 Funding

The transit services that are planned in the Regional Transportation Plan and funded by Proposition 400 will eventually add over seventy route miles of new local, express, and





bus rapid transit service within the City of Chandler. In addition, the RTP helps fund amenities at bus stops and new transit facilities, such as park-and-ride lots and transit centers. However, the RTP provides these new services and amenities over a long period of time, and, because its focus is regional in nature, may not provide services that are a priority to Chandler residents. In addition, service levels planned in the RTP may not keep up with the local need for transit services. Even after all RTP improvements are implemented, over sixty miles of arterial roads in Chandler will remain without fixed-route services.

The provision of paratransit services also presents a challenge. Costs for paratransit services are rising quickly, and demographic shifts (in particular, the aging of the “Baby Boomer” segment of the population) mean that there is an unknown, yet anticipated, latent demand for regional paratransit service. Every expansion of arterial fixed-route services requires a comparable expansion of complementary ADA services; therefore, the cost of ADA paratransit must be included in any analysis of fixed-route expansion.\* Due to the rising costs and anticipated potential increase in demand for ADA service, many cities, including Chandler, are providing educational opportunities to encourage the use of fixed-route services and other alternatives – such as taxi voucher and mileage reimbursement programs – to help manage ADA service demand. Chandler has a subsidized taxicab fare program and is initiating a grant-funded mileage reimbursement program to provide additional options.

The City of Chandler currently funds some local fixed-route services. As regional funding replaces local funding on supergrid and express routes, the City will have some funding available. In order to keep up with anticipated increases in the need/demand for public transit, it is strongly recommended that the City continue to prioritize transit improvements.

Local jurisdictions have the option of proposing a sales tax to local voters to support transit projects. In the Valley, the cities of Tempe, Scottsdale, Phoenix, Mesa, Glendale and Peoria all have enacted local option transit taxes. The City should study the feasibility of a local transit sales tax. This would allow the City to support its local transit priorities and complement regional plans.

In addition, the City should further explore innovative funding mechanisms such as private-public partnerships, which can be applied in a variety of ways. The City utilizes existing private partnerships in its bus shelter advertising campaign, in which

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\* All recommendations for fixed-route transit improvements will occur within the current ADA service area.



advertisements at bus shelters help pay for transit amenities (as in Figure 5-9). Transit centers provide an opportunity for an enhanced advertising program or even lease of space to private business; a good complementary business to transit is bike parking & security services, such as a Bike Station.

**Figure 5-9: Bus Shelter Advertising**



Funding from the American Recovery and Reinvestment Act of 2009 (often referred to as the federal stimulus plan) will partially fund construction of bus BRT stations along the Arizona Avenue BRT corridor. The City should continue to monitor special opportunities for additional capital funding.

The business community is a potential partner in providing shuttles to large employment campuses (an example is shown in Figure 5-10.). The South Price Road corridor provides a good opportunity to involve employers in the provision of transit service, as does the Chandler Airpark.



## Transit Benefit Areas

It is recommended that the City study the potential for and legality of an assessment on employers in order to develop enhanced transit services to serve, both, employees and customers. Assessment methods include charging an employer based on the number of employees or square footage.

Transit Benefit Districts have been used in Washington and Oregon, and are being considered in the San Diego area.\* Three Transit Benefit Areas have been identified as having high employment densities currently or in the future. They are South Price Corridor, West Chandler Commercial Area, and Airpark Area. Figure 5-11 shows the three Transit Benefit Areas.

**Figure 5-10: Employer-sponsored Shuttle**

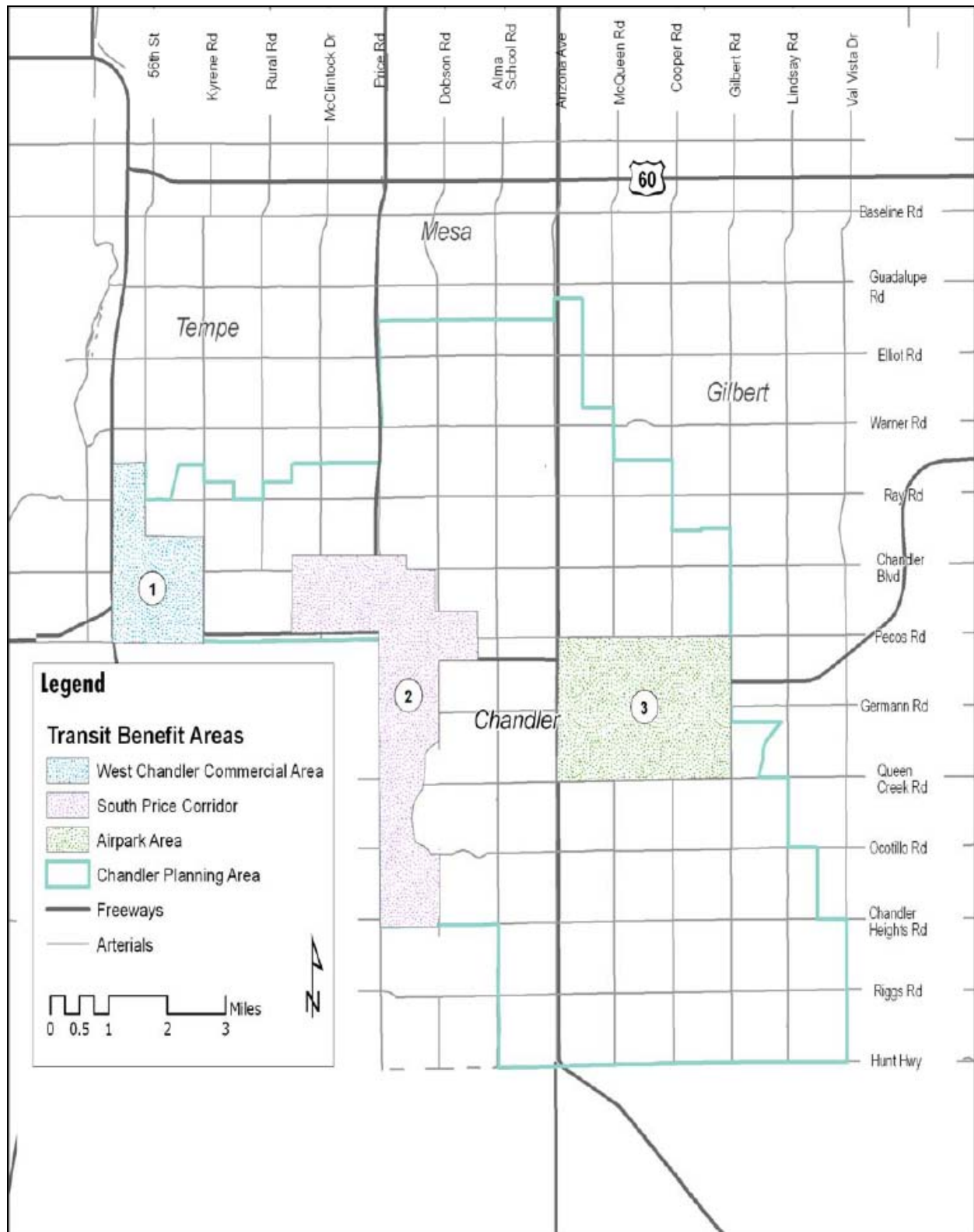


*In the Bay Area, several Silicon Valley employers operate shuttle buses to company campuses, such as Yahoo!'s "Green Guzzler".*

\* Transit Benefit Districts are discussed in more depth in the report "Value capture for Transportation Finance" by the Center for Transportation Studies.



Figure 5-11: Transit Benefit Areas





## **SECTION 6.0 BICYCLE AND PEDESTRIAN PLAN**

A connected bicycle and pedestrian network is critical to helping the City of Chandler achieve its vision of an environmentally-friendly city with a multimodal transportation system. Identifying connected networks, both on-street and off-street, that can accommodate multimodal users will encourage residents to choose alternative transportation options. In addition, it is important to provide safe and comfortable facilities to those individuals who rely on multimodal modes for mobility. The Vision, Goals, and Objectives developed by the City of Chandler Transportation Commission confirm the importance of multimodal planning. This section identifies ways to integrate bicycle and pedestrian planning into highway and transit design and facility improvements in ways that lead to a connected network.

### **6.1 Bicycle Background**

A well-designed bicycle network with amenities can reduce congestion, increase quality of life, and enhance a city's image. The City of Chandler has established a policy of improving alternative modes of transportation, which includes transit, bicycling, and pedestrian activity. In 1999, the City adopted a comprehensive plan update to support various bicycle improvements. This plan presented recommendations for bicycle facilities, education programs, enforcement, policies, planning, and promotion. This section of the Transportation Plan updates the bicycle plan and documents planned future improvements, with a goal of establishing guidelines for short- and long-term projects.

#### **6.1.1 Basic Characteristics**

Bicycle facilities refer to improvements that accommodate or encourage bicycling; including parking, storage, and shared roadways. When designing bicycling facilities, it is critical to remember that cyclists should not be treated as pedestrians on wheels. Because bicyclists travel at much faster speeds than pedestrians and do not have the maneuverability and stopping speed of a pedestrian, they need facilities that will accommodate higher speeds and greater clearance. The Arizona Revised Statute (ARS) 28-812 grants any person riding a bicycle on a roadway or on a shoulder of a roadway "all the rights and...all the duties" applicable to the driver of a motor vehicle. Bicyclists are allowed on any roadway which is not specifically prohibited to bicycling.

A bicycle-friendly environment is more than simply having bikeway routes and lanes. Just as roadways need to be well designed, offer connectivity to destinations, and offer end of destination amenities, so too do bicycle facilities. Well-designed bicycle facilities are safe, provide connectivity, and encourage compliance with the motor vehicle laws. Well placed signage and pavement markings provide way-finding assistance and encourage safe behavior.



## 6.1.2 Existing Studies

Existing studies provide guidance, background, and insight into the goals and objectives of the City of Chandler towards achieving an integrated bicycle network.

### **Chandler Bike Plan Update (1999)**

This update was based on the 1991 bicycle plan and is a comprehensive program for supporting transportation and recreational bicycling in the City. The plan presents recommendations for improving the network, education, and engineering guidelines as part of the City's clean air and trip reduction efforts.

### **Chandler General Plan (2008)**

As part of the general plan update, the bicycling element identifies the current and future condition of the bike pathway system in the City and creates goals, policies, and objectives based on its evaluation. Connectivity and linkages between developments is identified as a major planning issue. Its goal is to develop a citywide system of on- and off-road facilities that creates maximum safety, convenience, and comfort for bicyclists of all ages and skill level. The two objectives are to include bicycle facility planning as part of all new development reviews and to develop a continuous system of bicycle facilities between adjacent communities.

### **Statewide Bicycle and Pedestrian Plan (2003)**

The intent of this plan is to provide guidance of the long-term planning of bicycle and pedestrian facilities within the State of Arizona. The document defines the roles of the state and local government, recommends design and maintenance guidelines for implementing agencies, and identifies existing plans within metropolitan planning areas. The goal of the study is to provide a long-term plan for a statewide system and provide guidance to ADOT with regards to bicycle travel, planning, and facility development. While the study gives guidance on defining state routes, it does not make local- and regional-level recommendations.

### **MAG Regional Bikeway Master Plan (2007)**

The Maricopa Association of Governments (MAG) Regional Bikeway Master Plan serves as a guide for improving, expanding, and connecting the MAG region's bicycle facility network. This study evaluates the needs of the region and provides feasibility improvements based on site studies in the MAG region.

### **Town of Gilbert Bicycle and Pedestrian Plan/Implementation Guidelines (2005)**

This document provides guidelines for planning for bicycle facilities within the Town of Gilbert. The Town developed a goal to encourage bicycling for short trips. The objectives and performance measures include coverage, accessibility, continuity, attractiveness, and feasibility. Gilbert advocates basing its bicycling network on major collectors and relying on major arterials only when the collector network is discontinuous.



### **City of Mesa Transportation Plan (2002)**

This plan provides guidance in five areas to promote bicycling as part of the City of Mesa's transportation network. They include identifying a future bicycling network, end-of-trip facilities, integration with transit, and promotion through education, enforcement, and encouragement.

### **City of Tempe Comprehensive Transportation Plan (2008)**

The City of Tempe transportation plan emphasizes accessibility and mobility for all residents without emphasis on a mode share. The bicycling element of the plan recommends targeting streets with low traffic volumes, investing in facilities that create connectivity between subdivisions, cul-de-sacs and through freeways, and to create full-standard bicycle lanes on the arterial streets.

### **Maricopa County Department of Transportation Bicycle Transportation System Plan (1999)**

The intent of the plan is to provide guidelines toward the implementation of the previous 1993 Draft Maricopa County Bicycle Plan. It provides an overview of bicycling conditions in Maricopa County and outlines facility, policy, and program changes focused on improving and integrating bicycle transportation. The study focuses on strengthening the bicycle program while implementing recommendations over the time frame of the plan.

#### **6.1.3 Trip Purpose**

A connected bicycle network is one which serves riders of different skill levels and accommodates various trip purposes.

##### **Commuters**

The bicycle commuter is typically comfortable using bicycle lanes on the arterial street network. This class of rider travels long distances and prefers the direct route and the higher speed the arterial bicycle lanes can provide. The current Chandler bicycle network generally provides accessibility to major employer and retail centers for the commuter by providing bicycle lanes on most major arterial roadways.

##### **Schools**

The number of students who walk or bicycle to school has declined dramatically compared to previous generations. There is a renewed interest in encouraging school-aged children to walk or bicycle to school through programs such as Safe Routes to School. The focus of such a program is on students K-12.

##### **Local Errands**

Using the bicycle for short-distance local errands can reduce vehicle miles traveled and the number of vehicle trips made. Vehicle trips that are replaced by bicycling can benefit individual health, improve air quality, and decrease traffic congestion. For some



people, such as low income individuals, children, and some seniors, using a bicycle for local errands may be the most practical and cost effective means to travel.

## **Recreational**

The recreational rider is typically less skilled and less confident than the bicycle commuter. This type of user is less interested in a destination and more interested in a safe and enjoyable riding experience. Recreational destinations such as parks, public spaces, and libraries could encourage and attract riders in nearby communities through a continuous bicycle network. The experience of the user can be enhanced by providing safety, comfort, and visual interest along the route.

### **6.1.4 Existing Network**

Currently there is a network of 164 miles of bicycle lanes and routes, and 18 miles of off-road multi-use paths within the City of Chandler. The existing network in and adjacent to the City is shown in Figure 6-1. Chandler has a comprehensive network for the highly skilled-commuter bicyclists; however routes that provide connectivity for the less skilled or recreational bicyclists are needed. Most of the arterials in the more developed areas of the City are striped with bicycle lanes. Most of the collector streets wind through residential subdivisions and do not connect to neighboring developments due to a lack of connectivity at mid-mile crossings. There are a few canals that also serve as multi-use pathways.

Chandler has its primary bicycle network along arterial streets. While this concept serves experienced bicyclists well, safety considerations preclude less experienced cyclists, younger and older cyclists, and recreational users from fully utilizing the system. There are gaps in the network for those who want to move through low-volume collector streets, which are often indirect routes with very little signage. Often these gaps are due to a lack of mid-mile crossings for collector-to-collector system connections.

The southeast area of the City has a less developed bicycle network due to its less-developed environment. It is expected that the bicycle network in this area of the City will increase commensurate with new development.

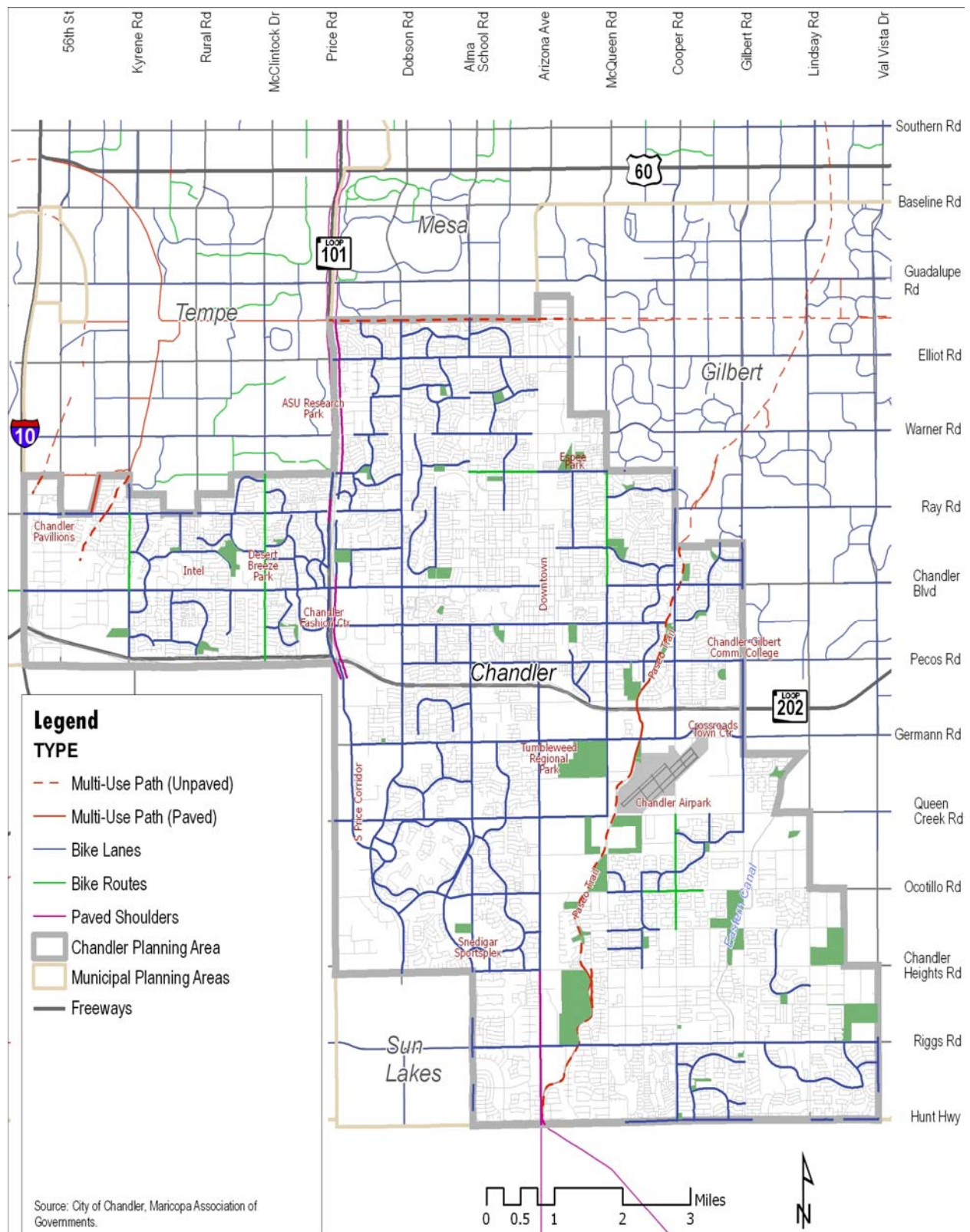
The main off-street pathway, which runs along the eastern side of the Consolidated Canal, is the Paseo Trail. This pathway is 6.5 miles long and is a 10 foot wide multi-use pathway that serves recreational joggers, walkers, bicyclists, and horseback riders. The southern terminus is Riggs Road and continues north to Galveston Street; the path continues north into the Town of Gilbert.

In 2009, the City constructed the Western Canal bike path improvements between Price Road and the Union Pacific Railway. This path connects the planned improvements in Tempe to the west and Gilbert to the east.





**Figure 6-1: Existing Bikeways in Chandler**





## 6.2 Pedestrian Background

Pedestrian friendly and livable communities are becoming preferred by residents and workers as energy prices increase. The current Chandler General Plan encourages pedestrian linkages, noting in its vision statement that “residents will rely less on automobiles” and more on walking an “interconnected system of shaded pedestrian pathways.” The costs of retrofitting the City’s pedestrian environment can be mitigated by integrating pedestrian improvements with other improvement projects. The following sets of guidelines are meant to encourage pedestrian activity. The guidelines range from basic safety standards for all pedestrian facilities to designs that fully integrate pedestrian traffic into the built environment.

### 6.2.1 Safety Guidelines

The first level of pedestrian accommodation is defined by safety guidelines. This is meant to serve as a general guideline for all areas that can accommodate pedestrian traffic and where a sidewalk is warranted. Walkways throughout the City should meet or exceed the following safety guidelines, as well as any ADA Accessibility Guidelines (ADAAG).

- **Walkway:** minimum width of 5', preferred 6' minimum, with a surface that is smooth, slip-resistant, and free from tripping hazards such as cracks, indents, or steep grades
- **Curb ramp:** ADA-truncated domes
- **Lighting:** at intersections and crosswalks
- **Crosswalk:** at crossing locations
- **Traffic signals:** timed for an appropriate walking speed

### 6.2.2 Comfort Guidelines

The second tier of pedestrian consideration is defined by comfort guidelines. Areas that are meant to encourage greater pedestrian connectivity to transit, such as within a quarter-mile of traditional transit routes (i.e., local bus) and areas within a half-mile of high capacity transit (HCT) routes would benefit from pedestrian environments. Additionally, areas identified in the Chandler General Plan as infill/revitalization areas, growth areas, and innovation zones respond to higher concentrations of pedestrian activity. The comfort guidelines embrace:

- **Walkway:** desired width of 6'-10' with a surface that is smooth, slip-resistant, and free from tripping hazards such as cracks, indents, or steep grades
- **Curb ramp:** ADA-truncated domes
- **Lighting:** at intersections and crosswalks
- **Crosswalk:** at crossing locations
- **Traffic signals:** timed for an appropriate walking speed, countdown signals, and auditory signals



- **Shade:** coverage along portions of the route and at rest areas
- **Rest areas:** benches and shelter at transit stops
- **Site furnishings:** trash receptacles, telephones, or other furnishings

### 6.2.3 Destination Guidelines

The third tier of pedestrian considerations is defined by destination guidelines. The Chandler General Plan recognizes the busiest activity centers and destinations. These areas include the infill/revitalization areas of Downtown, Chandler Airpark, Tumbleweed Park, and Chandler Fashion Center and other large shopping areas. These areas are in close proximity to high capacity transit routes, such as Bus Rapid Transit (BRT), have a higher intensity of mixed-use parcels and the highest concentrations of pedestrian activity. The following guidelines can enhance the pedestrian environment in destination areas.

- **Walkway:** preferred width of 8'-10' with a surface that is smooth, slip-resistant, and free from tripping hazards such as cracks, indents, or steep grades
- **Street separation:** sidewalk separated from vehicular traffic with parking, landscaping, or street furniture
- **Curb ramp:** ADA-truncated domes
- **Lighting:** at intersections, crosswalks and along the route
- **Crosswalk:** striped x-walks and pedestrian refuge islands at wide intersections
- **Traffic signals:** timed for an appropriate walking speed, countdown signals, and auditory signals
- **Shade:** along portions of the routes, rest areas, and transit stops
- **Rest areas:** benches and shelter at transit stops and other locations
- **Site furnishings:** trash receptacles, telephones, or other furnishings
- **Visual interest:** pedestrian-scale building height, lighting, way-finding signs, and awnings; street art, sidewalk cafés, and vendors
- **Green areas:** with shading, rest areas, landscaping, public art or other amenities

## 6.3 Facility and Design Recommendations

### On Street Intersections

Crossing and navigating intersections are major safety issues for bicyclists and pedestrians of all ages and skill levels. Major intersections are critical to network connectivity and provide access to commercial business. Most intersections within the City are designed with the goal of efficiency and safety for the automobile, while meeting the guidelines for non-motorists. The comfort and interest for pedestrians and bicyclists should be improved to encourage non-motorist activity. It is recommended that intersection improvements on major and minor arterial roads be coordinated with bicycle and pedestrian safety and amenity enhancements. Planned improvements



include bike lanes, left turn and right turn lanes, medians, street lighting, traffic signal modifications, and landscaping. Opportunities for system enhancements include refuge islands, curb extensions, and countdown signals. The degree and type of enhancements would differ depending on whether it is an arterial route designed for the commuter bicyclists or a collector or shared-use pathway designed to encourage recreational bicyclists and other non-motorists.

### Refuge Islands

Refuge islands, also known as crossing islands, are raised medians in the roadway or at intersections that help protect bicyclists and pedestrians from motor vehicles. Refuge islands are most beneficial in areas where there are four traffic lanes or more with high traffic volume, and high traffic speeds. Advantages would include providing refuge for slower pedestrians, moderating vehicle speeds at intersections, and increasing awareness of non-motorists on the roadways. While this concept provides the greatest benefits for pedestrians, bicyclists can also benefit from it. Figure 6-2 is an example of a refuge island in Downtown Chandler.

**Figure 6-2: Refuge Island for Pedestrians and Bicyclists on a Busy Roadway**





### 6.3.1 Off Street

#### Shared-Use Path System

Shared-use paths are facilities that are used by a range of non-motorists. Users are typically pedestrians and bicyclists, but can include equestrians, roller-bladers, and people pushing strollers. These paths are traditionally off the street network and safer for the recreational bicyclist. They should not be considered a replacement, but should serve as a supplement to the on-road bicycling network. Canals and utility lines are good opportunities for improvements. The Consolidated Canal and Eastern Canal connects the cities of Chandler and Gilbert. The other canals that traverse the city; Highline, Kyrene, Tempe, and Western are opportunities for further enhancements to the bicycle and pedestrian network. These connect Chandler to Tempe and Mesa. The challenge with canals is the need to create connectivity with safe arterial street crossings. Refuge islands and pedestrian activated crosswalk signals are methods to alleviate some safety concerns.

#### Mid-Mile Crossings

For the typical bicyclist and pedestrian, the lower traffic volume of collector streets provides a more comfortable and safe environment, however, most collector streets do not have signalized intersections at arterial streets. Bicyclists and pedestrians often find that the shortest travel distance to a destination requires crossing arterial streets at a mid-mile section of the roadway. Crossings at the mid-mile that are safe and easy to use with minimal impact to vehicles is a key component to a continuous non-motorized network. It is recommended that pedestrian-activated signals be located at areas where high volumes of bicycling and pedestrian traffic is encouraged or expected. In addition, the Maricopa Association of Governments Arizona Regional Bikeway Master Plan (2007) provides examples and recommendations for mid-mile crossings, depending on existing facilities, traffic volume, and speed limits. Some of these recommendations are:

- A pedestrian-activated traffic signal with striped crosswalk
- Signage for motorists warning of the crossing
- Advanced stop lines to keep vehicles back sufficiently from the crosswalk
- Clear visibility to the crosswalk for both the path and road user; and path linkages to sidewalks

### 6.3.2 Destinations

#### Parks and Recreation

Park and recreation sites are destinations for bicyclists and pedestrians, although they do not add to the commuting network. Nevertheless, they are good destination points for the recreational user and the young and elderly who may not have access to a motor vehicle. Way-finding signage that directs users to safe and continuous routes, and well situated bicycle parking, are enhancements that should be considered. The following are some of the major attractors in or nearby Chandler:



- Snedigar Sportsplex
- Chandler Airpark
- Tumbleweed Regional Park
- Downtown Chandler
- Chandler Fashion Center
- Chandler-Gilbert Community College
- The Crossroads Shopping Area
- ASU Research Park
- Chandler Pavilions
- Desert Breeze Park
- Chandler Regional Hospital

### **Way-Finding**

Directional signs are an important component in the bicycling and pedestrian network. It gives users a sense of direction, guides them through the safest routes, and helps them to their destination in an efficient manner. It also reminds motorists that cyclists are equal users of the roadway system. Route signs should include three components: distance, direction, and destination. Distance gives an indication of the time it takes to travel a certain distance through a route and indicates that the destination is reachable in a continuous network. The direction provides guidance on the best and most efficient route. Destination allows bicyclists to choose their route along a network. Way-finding signs should be provided at some of the major recreational and commercial sites in Chandler, including Downtown, Tumbleweed Park, Paseo Trail, Chandler Fashion Center, and Snedigar Sportsplex. Figure 6-3 provides examples of placement along a network. Figure 6-4 illustrates examples of way-finding signs, as prescribed by the MUTCD.



Figure 6-3: Guide Signs for Bicycle

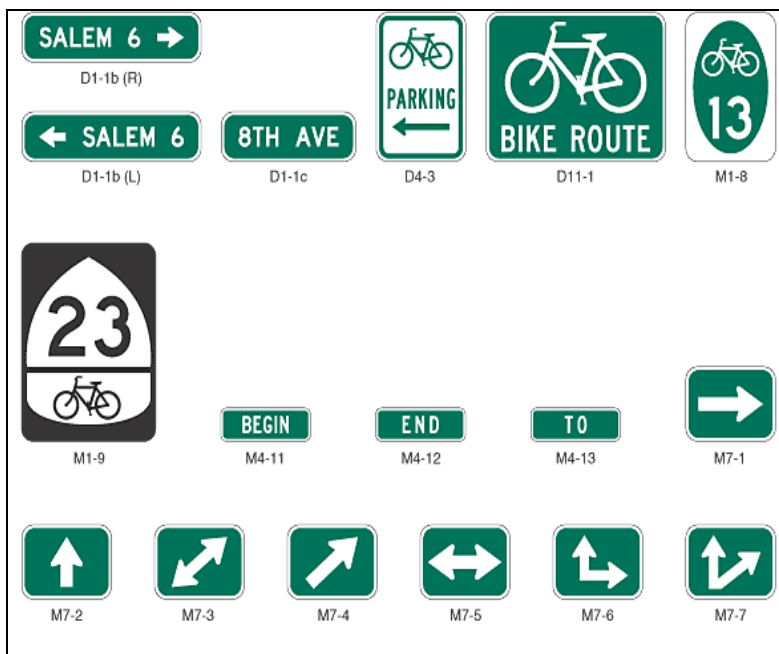
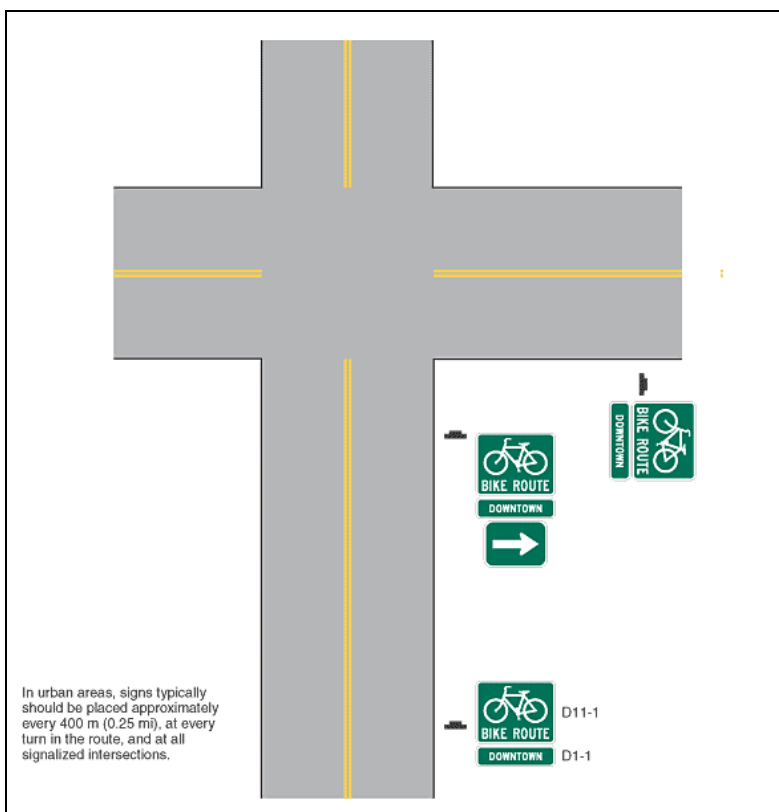


Figure 6-4: On-Roadway Bicycle Routes and Way-finding Signage





## Vehicle Parking

Vehicle parking should be provided at parks and canal trail heads where bicycle lanes and pedestrian pathways can be accessed. Parking allows bicyclists who cannot access the recreational area directly by bicycle or those without the skill level to navigate the street system to enjoy recreational biking. The major attractors in the City include Tumbleweed Regional Park, Desert Breeze Park, Paseo Trail along the Consolidated Canal, and Western Canal.

### 6.3.3 Multimodal Integration

#### Multimodal Integration Measures

Because not all bicyclists are comfortable on arterials where the traffic volume and speed are typically higher than that of collector streets, one of the primary focuses of the Chandler Bicycle and Pedestrian network is to create opportunities on mid-mile collector streets so that they can be shared by, and safe for, non-motorists. Integrating non-motorists such as pedestrians, recreational bicyclists, skaters, and stroller users is most successful when modifications to the street design are part of the initial conception and construction. Narrow lanes, medians, and small curb radii are design measures that slow motorists' travel speed, thus improving the actual and perceived safety of non-motorists. Other visual measures such as landscaping and raised medians psychologically make the path more inviting to non-motorists. The following provide some guidelines for multimodal integration on collector streets that are designated for improved pedestrian and bicycling activity:

- Narrow travel lanes to 10.5' or 11' widths (when acceptable).
- Tighten corner curb radii to the minimum needed to provide effective turning radius for an appropriately selected design vehicle.
- Add raised medians – Visually narrows the roadway and provides a median refuge for mid-mile crossings.
- Provide median and parkway landscaping – Further visually narrows the roadway and provides a calming effect.
- Provide curb bulb-outs when possible - Controls parking, shortens pedestrian crossing distances, and improves sight lines.

#### Safe Routes to School

Currently, the City of Chandler does not have a formalized Safe Routes to School (SRTS) program. Most new residential developments are designed to support only one practical route for children living in the subdivision to access their schools. Some older areas in within the City may benefit from education and initiatives. However, the support would need to be initiated from the schools involved since the success of the SRTS program is strongly contingent on local school involvement and parent participation. Chandler will support and coordinate with schools to propose Safe Routes to School (SRTS) programs in areas where there is strong administrative, teacher, and parent support. The [www.saferoutesinfo.org](http://www.saferoutesinfo.org) website suggests several different levels at which the program can be initiated. It can begin at a single school or district-wide,





with varying levels of benefits. District-wide participation can generate policies and single school resources can create higher participation levels initially.

### **Transit Integration**

The bicycle network and pedestrian facilities should be integrated with the transit network to provide the greatest degree of connectivity and to allow for the shortest travel distance for non-motorists. Bicyclists will travel much greater distances than they can walk, which can extend the catchment area of a bus or rail stop, and provide greater mobility at beginning- and end-of-trip destinations. Sidewalks and shelters that are designed with the safety and comfort of the pedestrian and bicyclists in mind could increase transit usage. The following issues should be addressed in areas where high transit usage is encouraged or expected:

- Provide bicycle lanes, crossings, and signs for roads leading to transit stations.
- Provide bicycle racks or lockers at transit stops and bicycle lockers at high-use transit areas; including BRT stations, transit centers, and Park-and-Ride facilities.
- Provide sidewalks that can accommodate higher pedestrian volumes and which meet minimum Americans with Disabilities Act guidelines.
- Provide secondary seating in the form of slopes, planter edges, and boulders for times of high usage.
- Create a buffer or safety obstacle between pedestrian and traffic.
- Reduce or disallow berming that would create physical barriers to transit usage or poor visibility to motorists.

The City of Chandler provides transit service on many of its major arterial roads. In areas such as shopping centers, schools, and parks, connectivity and safety between the transit stop and the facility should be emphasized. The areas around Chandler Fashion Center, Snedigar Sportsplex and Downtown Chandler, all fall along major arterial streets with frequent transit service and would benefit from the focus of on-street and end-of-trip facility improvements.

## **6.4 Corridors and Focus Area Recommendations**

The pathway to creating a connected city for bicyclists within the City of Chandler would be to create connectivity to activity centers, the downtown area, parks, open spaces, canals, and the collector street system. The City has the basic bicycle and pedestrian infrastructure in place, but has gaps in the network. Alternatively, the City has destinations that encourage and attract bicyclists and pedestrians, but are not easily and conveniently accessible through multimodal means. The following near-, mid-, and long-term improvements are meant to achieve continuous bicycle and pedestrian networks throughout the City, and to specifically identify multimodal focus areas. Figure 6-5 illustrates recommendations to the Chandler bicycle and pedestrian network. The recommended improvements and estimated costs are described. Design and construction costs will vary greatly depending on factors such as timing of project,



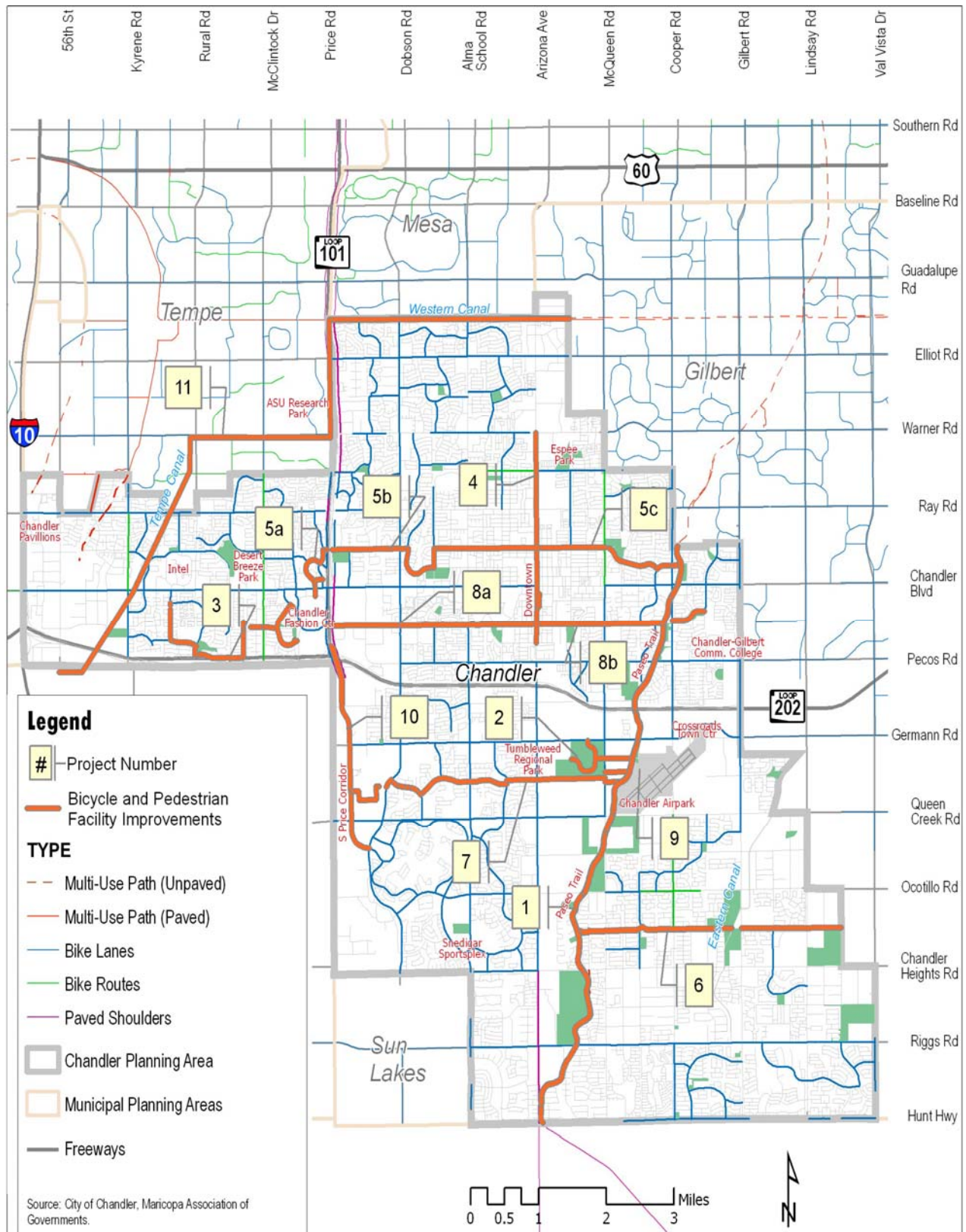
improvement type, and need for additional right-of-way. General cost estimates are identified by cost category, as defined in Table 6-1.

**Table 6-1: Cost Table Key**

Symbol	Estimated Cost Range
\$	< \$500K
\$\$	\$500K - \$1M
\$\$\$	\$1- \$2M
\$\$\$\$	\$2 - \$3M
\$\$\$\$\$	\$3 - \$5M



Figure 6-5: Recommended Bikeway and Pedestrian Improvements





## 6.4.1 Focus Area Recommendations

### 1. Paseo Trail

The Paseo Trail is a 7.5 mile trail that follows the Consolidated Canal beginning at Galveston Street and continuing south to Hunt Highway. The trail is a multi-use path on the eastern side and an unimproved dirt surface on the western side; making it accessible to pedestrians, bicyclists, and horseback riders. The installation of pedestrian activated signals at major arterials would improve the safety and connectivity of the path. Providing way-finding signs located at crossings would emphasize its role as a primary multimodal linkage. The following are recommended improvements for this corridor:

#### **Pedestrian-activated signals**

- Germann Road
- Ocotillo Road
- Chandler Heights Road
- Riggs Road

#### **Utilize existing signal**

- Bring crossing to Queen Creek Road & McQueen Road intersection

#### **Way-finding Signs**

- Create special signs and logos that emphasizes its role as a major north-south spine route with distance indicators to major crossing routes.
- Galveston Street (To Galveston Route)
- Frye Road (To Downtown)
- Tumbleweed Park
- Chandler Airpark Ramada (To Chandler Airpark)
- Oriole/Ryan Road (To Chuparosa Park, Motorola)
- Brooks Farm Road (To Brooks Farm Route)

#### **Cost Estimate**

\$\$\$ (\$1M - \$2M)

### 2. Park-and-Ride and Tumbleweed Park

The Park-and-Ride lot is adjacent to Tumbleweed Park Tumbleweed Park facilities are designed for fitness, recreation, and educational classes for individuals of all ages. Both facilities are located approximately one mile from the Paseo Trail and can be connected and made more comfortable for bicyclists and pedestrians through installation of a few amenities. The following are recommended improvements:

#### **Amenities**

- Bicycle Lockers



### **Streetscape Improvements**

- Landscaping, shading and multimodal integration measures along Hamilton Street, Pioneer Parkway, and Tumbleweed Park; and to Paseo Trail

### **Way-finding Signs**

- Pioneer Parkway and Tumbleweed Park (To Paseo Parkway)

### **Cost Estimate**

\$\$\$ (\$1M - \$2M)

### **3. West Chandler – Chandler Fashion Center Connector**

The neighborhood between Chandler Boulevard and the Loop 202 in west Chandler is connected by small residential streets. There are several schools, parks, and destinations in the area and it is also near Chandler Fashion Center. While the area has existing bicycle lanes, its connectivity and accessibility could be increased with strategically placed way-finding signs. The routes to the following destinations could be emphasized using way-finding signs.

### **Way-finding Signs**

- Kyrene Pueblo Middle School
- Kyrene Elementary School
- Mountain View Park
- Chandler Fashion Square

### **Pedestrian/Bicycle Crossing**

- Pursue opportunities for multimodal pathway between neighborhood and Chandler Fashion Center.

### **Cost Estimate**

\$ (<\$500K)

### **4. Arizona Avenue along the BRT Corridor**

Arizona Avenue between the City of Mesa and the Park-and-Ride lot will be the focus of a future Bus Rapid Transit (BRT) corridor in the City of Chandler. General recommendations include way-finding signs and bicycle parking around the BRT stations that create connectivity and increase the safety of bicyclists.

### **Cost Estimate**

N/A

### **5. Galveston Street**

Galveston Street is an east-west collector street located mid-mile between Ray Road and Chandler Boulevard. A bicycle/pedestrian bridge over the Price/Loop 101 Freeway is currently being planned. Funding for this bridge needs to be included in future CIP's. When the bridge is completed, Galveston Street will provide a continuous non-motorized pathway between Chandler Fashion Center and the Paseo Trail.



### **5a. Chandler Fashion Center and Loop 101**

In the neighborhood west of the future bridge, a few street level treatments and way-finding signs that direct users to the Chandler Fashion Center would emphasize its role in the network.

#### **Bicycle lanes**

- Detroit Street between Federal Street and Metro Boulevard.

#### **Way-finding Signs Along**

- Galveston Street and Federal Street
- Detroit Street and Federal Street
- Detroit Street and Metro Boulevard

#### **Cost Estimate**

\$ (<\$500K)

### **5b. Loop 101 and Arizona Avenue**

The segment east of Loop 101 is ideal for a major east-west bicycle route due to its low traffic volume, segment length, and linear routing. Another way to emphasize and market its value would be to create a route name similar to what would be done for a scenic highway. Some of the challenges in this area include lack of existing bicycle lanes and space for bicycles lanes at intersections. The following improvements are recommended:

#### **Bicycle lanes**

- Bicycle striping between Arrowhead Drive and Arizona Avenue on Galveston Street

#### **Street Improvements**

- Galveston Street: Landscaping, shading, rest areas, and multimodal integration measures between Arrowhead Drive and Arizona Avenue

#### **Way-finding Signs**

Create route name that emphasizes its role as an east-west spine route and its connectivity between two major activity centers. Directional signs should be placed at the following intersections:

- Galveston Street and Anderson Boulevard
- Anderson Boulevard and Arrowhead Drive
- Arrowhead Drive and Galveston Street
- Along the routes at schools, parks, and activity center crossings, as needed

#### **Cost Estimate**

\$\$\$ (\$1M - \$2M)



### 5c. Arizona Avenue and Paseo Trail

#### **Pedestrian activated signal**

- Cooper Road and San Tan Street

#### **Way-finding Signs on these Corridors**

- Cooper Road and San Tan Street
- Paseo Trail and Tower Avenue
- Paseo Trail and Newport Street
- McQueen Road and Galveston Street to direct toward Pima Park

#### **Bicycle lanes**

- Bicycle striping between Exeter Street and Arizona Avenue

#### **Cost Estimate**

\$\$ (\$500K - \$1M)

### 6. Brooks Farm Road

Brooks Farm Road is an east-west collector street located between Ocotillo Road and Chandler Heights Road. There is an approximately four mile segment that could serve as a major east-west multimodal route through southeast Chandler that connects Paseo Trail and the Eastern Canal and extends to the east of Lindsay Drive. The following improvements are recommended:

#### **Bicycle lanes**

- Brooks Farm Road between Paseo Trail and Lindsay Road

#### **Streetscape Improvements**

- Brooks Farm Road: Landscaping, shading, rest areas, and multimodal integration measures between 118th Street and Lindsay Road

#### **Right-of-Way/Easements**

Segment between 118th Street and McQueen Road

#### **Way-finding Signs**

- Paseo Trail (See Paseo Trail recommendation)
- Adams Road and Brooks Farm Road
- Eastern Canal and Brooks Farm Road
- Mustang Drive and 140th Street
- Bright Angel Way and Tonto Place

#### **Pedestrian/Bicycle Street Crossings**

- Paseo Trail
- Eastern Canal



### **Cost Estimate**

\$\$\$\$\$ (\$3M - \$5M)

### **7. Ryan Road**

Ryan Road is an east-west collector street located between Germann Road and Queen Creek Road. There is an approximately three mile segment of that could serve as a major east-west multimodal route through southeast Chandler that connects Paseo Trail and the South Price Corridor. The following improvements are recommended.

#### **Bicycle lanes**

- Ryan Road between McQueen Road and Arizona Avenue

#### **Streetscape Improvements**

- Ryan Road: Landscaping, shading, rest areas, and multimodal integration measures between Paseo Trail and Earl Boulevard

#### **Right-of-Way/Easements**

- Through former Motorola Campus

#### **Way-finding Signs at**

- Paseo Trail (See Paseo Trail recommendation)
- McQueen Road and Ryan Road
- Arizona Avenue and Ryan Road
- Hartford Street and Ryan Road
- Earl Boulevard and Ryan Road
- Throughout Motorola Campus

#### **Pedestrian activated signal**

- Earl Boulevard and Dobson Road
- Price Road and Ryan Road

### **Cost Estimate**

\$\$\$\$\$ (\$3M - \$5M)

### **8. Frye Road**

Frye Road is an east-west collector street located mid-mile between Chandler Boulevard and Pecos Road. The varying traffic volumes on this street makes it desirable as a multimodal integration route. The high traffic volume on the segment west of Arizona Avenue makes the roadway more conducive as a transit oriented route with bicycle and pedestrian connectivity. East of Arizona Avenue, traffic volume decreases and the segment could serve as a major bicycle and pedestrian link between Paseo Trail and Downtown Chandler.





### **8a. West of Arizona Avenue**

The recommendation for the segment between Loop 101 and Arizona Avenue would be to emphasize bicycle and pedestrian connectivity with transit. The segment has bicycle lanes, however, some intersections do not. Currently, there is not available right-of-way for the inclusion of bicycle lanes at some intersections.

#### **Right-of-Way/Easements**

- Acquire right-of-way or remove medians when funding is available at the following intersections for bicycle lanes.
- Alma School Road
- Dobson Road

#### **Cost Estimate**

\$\$\$\$ (\$2M - \$3M)

### **8b. East of Arizona Avenue**

Currently, this roadway segment is striped for bicycling, however, increased amenities could improve the comfort and safety of recreational bicyclists. The recommended improvements for this segment are as follows:

#### **Streetscape Improvements**

- Frye Road: Landscaping, shading, rest areas, and multimodal integration measures between Arizona Avenue and Paseo Trail

#### **Way-finding Signs on**

- Paseo Trail and Frye Road

#### **Cost Estimate**

\$\$\$ (\$1M - \$2M)

### **9. Airport Boulevard**

The Chandler Airpark area is a nine square mile master-planned business park in and around Chandler Municipal Airport. The area is planned for employment, office, manufacturing, light-industrial, and research-and-development. Other allowed uses include mixed-use commercial and mixed-density residential. The multimodal development in this area should emphasize walkability between employment, retail, and residential areas. This would include emphasizing Airport Boulevard as a pedestrian-and bicycle-friendly street. Due to its proximity to the Paseo Trail, connections between Airport Boulevard and Paseo Trail should also be created whenever possible. The following improvements are recommended:

#### **Street Improvements**

- Airport Boulevard: Landscaping, shading, rest areas, and multimodal integration measures between Queen Creek Road and Germann Road.



### **Right-of-Way/Easements**

Procure easements for bicycle and pedestrian crossings to Paseo Trail when new developments or improvements occur.

### **Way-finding Signs**

Pedestrian bridge around water tower (See Paseo Trail recommendation)

Germann Road and Paseo Trail Crossing

### **Cost Estimate**

\$\$\$ (\$1M - \$2M)

## **10. South Price Road**

The South Price Road campus employment corridor is an emerging employment area that is south of Pecos Road and adjacent to the Gila River Indian Community. Currently located in this area are high-technology companies such as Intel, Orbital Sciences, Motorola, Amkor, and Charles Schwab. Due to its high density of employers and proximity to retail and commercial centers just north of Pecos Road, opportunities for multimodal transportation and transit should be explored during the planning and development phases. The Price Road corridor that serves this area is a high speed and high traffic volume roadway, therefore recreational bicycling is not encouraged on the road. Circulation improvements would be better served in the form transit integration on Price Road (assuming future circulator would serve the campuses) and improved circulation between campuses. Recommendations for this area are generally associated with land use and development, since multimodal integration is less desirable due to high traffic volume. Mixed-use developments integrated with employment campuses that include retail, service, and restaurant establishments would lessen the need for automobile travel.

### **Zoning and Development**

- Development codes that encourage transit integration with bicycle and pedestrians. (See transit integration section)
- Encourage a future innovation center campus to include bicycle and pedestrian circulation elements such as parking, shading, and seating.

### **Cost Estimate**

N/A

## **11. Tempe Canal, Gila Drain and Western Canal (North Chandler)**

The future goal of the Chandler multimodal system would be a network that connected all areas of the City. The current foundation for a loop connecting northwest and northeast Chandler is not yet in place. Future bicycle and pedestrian studies should examine partnerships with the neighboring cities of Tempe and Mesa to create a seamless network along the Tempe, Gila Drain and Western Canal. The easements along the railroad track could also be considered as a multi-use pathway for future planning purposes.



**Recommendation**

- A joint-partnership study with Tempe and Mesa.

**Cost Estimate**

\$\$\$\$\$ (\$3M - \$5M)



**Table 6-2: Focus Area Improvements**

Label	Name	Facility Type	Description	Recommendations	Possible Funding Sources	Cost Category
1	Paseo Trail	Shared Use Trail	Multi-use path along Consolidated Canal.	Pedestrian Activated Signals Way-finding signs	City of Chandler/ Recreational Trails Programs/ STP	\$\$\$ (\$1M - \$2M)
2	Park-and-Ride at Tumbleweed Park	Multimodal Transit Center	Park-and-ride facility and transit center at Germann Road and McQueen Road.	Bicycle lockers Way-finding Signs Streetscape Improvements	City of Chandler/ CMAQ	\$\$\$ (\$1M - \$2M)
3	West Chandler – Chandler Fashion Center Connector	On-Street Facility	Residential neighborhood in South Chandler with parks, schools, and churches.	Way-finding Signs	City of Chandler	\$ (<\$500K)
4	Arizona Ave	On-Street Facility	Site of future Bus Rapid Transit route.	Way-finding signs Bicycle lockers	City of Chandler/RTP Funds	n/a
5a	Galveston Street – Chandler Fashion Center and Loop 101	On-Street Facility	Neighborhood north of Chandler Fashion Center, adjacent to future Galveston pedestrian bridge.	Bicycle Lanes Way-finding Signs	City of Chandler/ CMAQ	\$ (<\$500K)



Label	Name	Facility Type	Description	Recommendations	Possible Funding Sources	Cost Category
5b	Galveston Street– Loop 101 and Downtown Connector	On-Street Facility	Collector street connecting pedestrian bridge at Loop 101 and Downtown Chandler.	Bicycle Lanes ROW/Easement Acquisition Streetscape Improvements Way-finding Signs	City of Chandler	\$\$\$\$ (\$2M - \$3M)
5c	Galveston Street– Downtown to Paseo Trail Connector	On-Street Facility	Collector street connecting Downtown Chandler and Paseo Trail.	Streetscape Improvements Way-finding Signs	City of Chandler/ CMAQ	\$ (\$500K - \$1M)
6	Brooks Farm Rd	On-Street Facility	Collector street connecting Paseo Trail and Eastern Canal.	Bicycle lane Striping Streetscape Improvements ROW/Easement Acquisitions Way-finding Signs Pedestrian/Bicycle Crossing	City of Chandler/ CMAQ	\$\$\$\$ (\$3M - \$5M)
7	Ryan Rd	On-Street Facility	Collector street connecting Paseo Trail and South Price Road Corridor.	Bicycle lane Striping Streetscape Improvements ROW/Easement Acquisitions Way-finding Signs Pedestrian Activated Signal	City of Chandler/ CMAQ	\$\$\$\$ (\$3M – \$5M)



Label	Name	Facility Type	Description	Recommendations	Possible Funding Sources	Cost Category
8a	Frye Rd (West of Arizona Ave)	On-Street Facility	Collector street connecting Arizona Avenue and commercial centers at Loop 101.	Zoning and Development ROW/Easement Acquisition	City of Chandler/ Private Development	\$\$ (\$500K - \$1M)
8b	Frye Road (East of Arizona Avenue)	On-Street Facility	Collector street connecting Downtown Chandler and Paseo Trail.	Streetscape improvements Way-finding Signs Pedestrian/Bicycle Crossing	City of Chandler/ Private Development	\$\$\$ (\$1M - \$2M)
9	Chandler Airpark	On-Street Facility	Master-planned business park near Chandler Municipal Airport.	Streetscape Improvements ROW/Easement Acquisitions Way-finding Signs	City of Chandler/ CMAQ	\$\$\$ (\$1M - \$2M)
10	West Chandler – Chandler Fashion Center Connector	On-Street Facility	Residential neighborhood in South Chandler with parks, schools, and churches.	Way-finding Signs	City of Chandler	\$ (<\$500K)
11	South Price Rd	On-Street Facility/ Employment Campus	High-technology campus employment corridor.	Zoning and Development	City of Chandler	n/a

**END OF SECTION**



## **APPENDIX A: EXISTING CITY OF CHANDLER PLANS**

### **A.1 2001 Street Plan**

The Chandler Transportation Study was completed in 2001. Its primary objective was to prepare an arterial street plan for accommodating traffic growth while maintaining community goals. The study included an inventory of existing conditions, the projection of future travel demand based on population and employment forecasts, an analysis of lane needs, and development of a long-range street plan and implementation program.

Both a mid-range roadway plan and a long-range roadway plan were included in the study. The plans depict major arterial and minor arterial, all of which define the functional characteristics of the arterial street system. The mid-range plan also identifies intersection widening that is proposed for four-lane streets.

### **A.2 1998 Transit Plan**

The first citizen-based transit plan for the City of Chandler was developed in 1990. In 1996, the Chandler City Council appointed an eleven-member Citizens Task Force to update the 1990 plan to recommend future transit investments. This effort was completed in February 1997. The Task Force emphasized community involvement as a critical component of the planning process.

The Chandler Transit Plan includes a near-term plan, a long-term plan, and a finance plan. Overall goals of the plan are to:

- Provide cost-effective mass transportation services that provide access to employment, recreational, medical, institutional, and other local activities for the majority of Chandler's residents and employers.
- Encourage the development of regional transit services, including commuter rail service, which meets Chandler's intercity travel needs.
- Provide mass transit service that meets the needs of the low income, commuters, student, elderly, and disabled.
- Encourage transit investments that promote economic development.
- Develop and provide an efficient and safe mass transportation system that can be implemented cost-effectively and is affordable for the user.
- Provide transportation alternatives, which promote improved air quality and reduce traffic congestion.
- Promote the use of public transit to reduce peak-hour related stress and to increase mobility to employment opportunities.
- Actively inform and encourage the public to use public transit as an alternative to the automobile.



- Encourage the development of a multi-modal transportation system including transit, bicycles, pedestrian facilities, and other non-automobile related modes.
- Develop a mass transportation system that conveniently meets the needs of the majority of Chandler residents and employers and provides desirable and attractive alternatives to the automobile.

The Task Force recommended that a ½ cent local sales tax be implemented to fund transit improvements for bus and rail facilities. This recommendation led to a public vote in May of 1999 for a 3/8-cent local sales tax to improve transit service, reduce roadway congestion, and improve roadway safety. This measure did not pass.

### **A.3 1999 Bicycle Plan**

The Chandler Bike Plan Update was last completed in October 1999. It was adopted by the City Council as an amendment to the Chandler General Plan.

The plan contains recommendations for bike lanes and other facilities, education programs, enforcement of bicycle-related laws, and promoting bicycling as part of the City clean air and trip reduction programs. It includes background information and analyses based on fieldwork, literature review, and public comment. The 1991 Chandler Bicycle Plan was used as a starting point for the update. A Bicycle Task Force, appointed by the Mayor, and assisted by City staff provided guidance and review in preparing the update. An open house and community bicycle survey provided opportunities for public input.

There are two major components of the Chandler Bike Plan Update: a Long Range Plan and a Five-Year Action Plan. The Long Range Plan consists of a three-tiered network of arterial street bike lanes, collector street bike lanes, and off-road trails along canals and utility easements. The plan connects Chandler to neighboring cities and a regional system of bikeways and trails. Bicycle facilities will link Chandler to Tempe, Mesa, Gilbert, and other cities throughout the Valley. The Five-Year Action Plan identifies over 50 capital and program improvements at an estimated cost of \$2.1 million. The overall goals as stated in the plan are:

- Promote Bicycling as a viable transportation choice.
- Recommend actions that can improve safety.
- Recognize and accommodate the varying needs of all types of bicyclists – young, old, proficient, and novice.
- Respond to community input about bicycling in Chandler.

### **A.4 2001 Transit Major Investment Study**

The City of Chandler High-Capacity Transit Study was a major transit investment study that identified high-capacity transit projects that could address future travel demands in Chandler and the East Valley. The Study concluded with a phased approach to implementing high-capacity transit solutions. The first phase focuses on bus transit





improvements coupled with infrastructure projects – such as queue jumper lanes and fiber optic cable – that would lay groundwork for future service improvements. The second phase recommended bus rapid transit (BRT) projects on Arizona Avenue, Rural Road and Chandler Boulevard. The final phase of recommendations included light rail transit projects on Arizona Avenue/Chandler Branch Railroad and Rural Road/Chandler Boulevard corridors.

## **A.5 2008 General Plan**

An update of the 2001 Chandler General Plan was adopted by Mayor and Council on June 26, 2008, and ratified by voters on November 4, 2008. The update meets the requirements of the Arizona Revised Statutes that apply to all communities in the state. The plan is designed to guide the future development and management of the city. It contains the following elements:

- Land Use
- Circulation/Bicycling
- Growth Areas
- Neighborhood Planning
- Housing
- Redevelopment
- Cost of Development
- Recreation and Open Space
- Energy
- Conservation/Environmental Planning
- Water Resources
- Public Services and Facilities
- Public Buildings
- Safety

The Transportation Plan will be coordinated with the provisions of the Circulation/Bicycling Element of the General Plan. The goals and objectives of this element are contained in Section 2.2.1.



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## **APPENDIX B: RELATIONSHIP TO OTHER PLANS, POLICIES, AND PROGRAMS**

A number of plans and programs of other levels of government are related to the Chandler Transportation Plan. Included are federal, state, county, and regional governmental units. The following sections provide a brief summary of these programs and policies.

### **B.1 Federal**

#### **B.1.1 SAFETEA-LU**

The City of Chandler is eligible for federal funds from the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for users, commonly known as SAFETEA-LU. The SAFETEA-LU funds that are available to the City include Surface Transportation Program (STP) funds and Congestion Management Air Quality (CMAQ) program funds. In 2009 the federal government made available stimulus funds to supplement STP and CMAQ funding. These funding sources are programmed through the local Metropolitan Planning Organization (MPO). For the Phoenix urbanized area the MPO is the Maricopa Association of Governments (MAG).

Surface Transportation Program (STP) funds can be utilized for any roadway or highway project when programmed through MAG. Currently, in the MAG region, all available STP funds are being utilized for completion of the regional highway system. In the future some of these funds will become available for use on capital projects by local communities, including Chandler. The CMAQ funds are intended for projects that improve the regions air quality and reduce congestion in accordance with the Clean Air Act Amendments of 1990. These funds must be programmed through the MAG Transportation Improvement Program and all projects that receive CMAQ funding must be in conformity with the region's air quality implementation plan.

The MAG region has also been designated as a Transportation Management Area (TMA), in accordance with Federal legislation, as it has a population over 200,000. Thus, MAG is required to carry out a continuous, comprehensive and coordinated transportation planning process in cooperation with both ADOT and RPTA. The City of Chandler is within the TMA and the Chandler transportation system is included in this MAG planning process.

Each year MAG prepares a Transportation Improvement Program (TIP) that is a five-year program for funding various transportation projects such as arterial streets, highway, transit, bicycle, pedestrian, intelligent transportation systems, and transportation planning. The compilation of the TIP for these projects is performed through the MAG committee structure. These committees include representatives from the 28 member agencies including each city, town and Indian community in Maricopa



County, plus Maricopa County, ADOT, RPTA and other interested groups and citizens at-large.

City of Chandler staff are members of various committees and provide input into MAG documents, and recommend federally funded projects to be evaluated through the MAG Management Systems. Final authority for adoption of the TIP and the associated federal funding recommendations is the MAG Regional Council.

### **B.1.2 Clean Air Act**

The Clean Air Act Amendments of 1990 established national ambient air quality standards and included strict provisions to improve the country's air quality. The Clean Air Act identified various transportation strategies to improve air quality. These strategies deal with the reduction of vehicle emissions, lessening of the reliance on single occupant vehicles, improvements to transit, provision of high occupancy vehicle lanes, provision of bicycle and pedestrian facilities, and improvements to carpool/vanpool programs.

Because these transportation control measures and other alternate forms of transportation are needed to help improve our air quality, SAFETEA-LU includes the continuation of the CMAQ funding program. As a result of this funding, many areas of the country, including Chandler, will be able to implement transportation control measures in compliance with the mandates of the Clean Air Act.

The MAG area has been designated as a non-attainment area for air quality. As a result, the Clean Air Act mandates a strong transportation planning process and timeframes for MAG to demonstrate attainment. In addition, the MAG transportation improvement plan must be shown to be in conformity with the region's air quality implementation plan.

## **B.2 State of Arizona**

### **B.2.1 Growing Smarter Legislation**

The Arizona Growing Smarter Plus statute requires each municipality to prepare and adopt a comprehensive, long-range plan for the municipality. A key component of each general plan is a circulation element. The circulation element addresses general planning goals relating to freeways, arterials and collector streets, bicycle routes, transit, and other modes of transportation all correlated with the land use element of the general plan.

This transportation study is in support of the goals presented in the circulation element of Chandler's General Plan. The study will examine the City's projected growth and identify the transportation improvements that are necessary to have an acceptable level of service on existing and future arterial and collector streets. Included in this study was the development of goals for the circulation element of the Chandler General Plan.



## B.2.2 ADOT High Speed Rail

ADOT recently updated the 1998 ADOT Arizona High Speed Rail Feasibility Study. The 1998 Feasibility Study concluded that high-speed rail was a possibility for the Phoenix-Tucson corridor. As a mitigation method to relieve traffic while the Interstate-10 corridor is widened and improved, the 1998 Feasibility Study recommended that up to three round trip passenger trains per day operate between the two metropolitan areas. The distance, a total of 119 miles between downtown Phoenix and downtown Tucson, would be served with Amtrak-style intercity passenger trains operating at approx 90-110 mph on the existing Union Pacific Railroad alignment. New dual track improvements would need to be made, as well as signaling, equipment purchases and station enhancements. The total cost of this service was estimated between \$500 million and \$1 billion (in 1998 dollars). The 2007 Strategic Plan focused on the initial conclusions of the 1998 Study to validate alternatives considered, update costs and other financial issues, and define a collector/distributor system plan based upon station alternatives.

## B.3 Regional Plans and Studies

### B.3.1 MAG Regional Transportation Plan

The Regional Transportation Plan (RTP) is prepared, updated, and adopted by the Maricopa Association of Governments (MAG) in cooperation with all Valley communities. The most recent update of the RTP was approved by the MAG Regional Council in 2007 and covers the period through fiscal year 2026. All major transportation modes are included in the RTP. These modes include freeways/highways, streets, public mass transit, airports, bicycles and pedestrian facilities, goods movement, and special transportation needs. In addition, the plan addresses other transportation-related activities, including transportation demand management, system management, safety, security, and air quality conformity.

Specific transportation projects are identified in the RTP. Several funding sources for these projects are identified in the document. These sources include the following:

- **Half-Cent Sales Tax:** On November 4, 2004, the voters of Maricopa County approved Proposition 400, which authorized the continuation of the existing half-cent sales tax for transportation in the region. Under this authorization, the tax is extended through calendar year 2025. The RTP assumes that the tax would be renewed in January 2026.
- **Arizona Department of Transportation (ADOT) Funds:** Two primary funding sources are used by ADOT. These are the Arizona Highway User Revenue Fund (HURF) and federal transportation funds. The MAG region receives annual HURF funding. A share of ADOT Discretionary Funds is also allocated to the MAG region.
- **MAG Area Federal Transportation Funds:** A number of federal transportation funding sources are available for use in implementing projects in the RTP.



These include Federal Transit 5307 and 5309 Funds, Federal Highway Surface Transportation Program (STP) Funds, and Congestion Mitigation and Air Quality (CMAQ) Funds,

- **Statewide Transportation Acceleration Needs (STAN) Account:** These funds are provided as part of the budget approved in 2006 by the State Legislature and the Governor.

### B.3.2 MAG Pedestrian Plan 2000

The MAG. Pedestrian Plan 2000 is an update to the 1993 Pedestrian Plan and outlines programs and actions to encourage enhanced pedestrian accommodation throughout the Region's transportation system. This plan establishes goals and objectives and presents Roadway Design Performance Guidelines. These guidelines use a Latent Demand Model to determine Potential Pedestrian Activity, much like that used for motor vehicle and transit travel forecasting. Based on pedestrian demand, geographical areas are categorized into four hierarchal categories: Pedestrian "District", Pedestrian "Campus", Pedestrian "Community", and Pedestrian "Neighborhood".

The plan recommends Pedestrian Districts to have the highest level of pedestrian consideration, while Pedestrian Neighborhoods require little to no consideration for pedestrians. This plan also offers a method for determining The Roadside Pedestrian Condition (RPC) by analyzing the presence and width of walkways and buffers compared to the volume and speed of traffic, percentage of heavy vehicles, and the number of travel lanes. The analysis results in a Pedestrian Level-of-Service grade varying from A to F.

### B.3.3 MAG Pedestrian Policies and Design Guidelines (2005)

This document is an update to the MAG. Pedestrian Area Policies and Design Guidelines issued in 1995 and builds upon the MAG. Pedestrian Plan 2000. The purpose is for entities to: "1) better recognize opportunities to enhance the built environment for pedestrians; 2) better create and redevelop pedestrian areas...that integrate facilities for walking with other transportation modes; and 4) encourage the development of other independent pedestrian-focused transportation facilities."

This document redefines pedestrian policy, asserting that all corridors meet the minimum requirements for "Safety", regardless of the potential pedestrian demand. The minimum requirements for pedestrian safety include a 6' minimum defined walkway, a surface clear of impediments, ramps where needed, physical or horizontal separation from vehicles and lit roadway crossings. Those areas with more pedestrian demand should be given Safety requirements plus extra consideration for "Comfort"; including wider walkways (7'-12'+), 2-3 options for separation from traffic, decreased driveway crossings, seating/rest areas and traffic calming. Finally, areas with the highest pedestrian demand (identified as "Pedestrian Districts" in the MAG. Pedestrian Plan 2000) are reclassified as "Pedestrian Destinations." Destinations shall have all safety and comfort considerations and additionally emphasize walking as the predominant



mode and incorporate specialty paving, themed signs and furnishings, decorative light fixtures and possibly street vendors. The guidelines also address the concept of Universal Design and identify Twelve Principles and Abilities of Pedestrians.

### **B.3.4 MAG Commuter Rail Strategic Plan**

The MAG Commuter Rail Strategic Plan (CRSP) is a twelve-month study to provide a policy framework for implementing commuter rail in the MAG region and northern Pinal County. The study area includes the MAG region and portions of northern Pinal County, including the cities of Casa Grande, Coolidge, Florence, Eloy and Apache Junction. The CRSP also defined five sub-areas to facilitate commuter rail implementation; Chandler is included in the Southeast sub-area.

The MAG Commuter Rail Strategic Plan provides three core elements as the foundation for a targeted commuter rail action plan, as follows:

- A framework of goals, objectives, and action items to implement commuter rail
- A series of implementation steps for commuter rail investment
- A consensus agreement of a large and diverse group of stakeholders

The potential for high-capacity transportation modes was originally developed in the 2003 MAG High Capacity Transit Study, and the findings were integrated into the 2004 Regional Transportation Plan (RTP). The Strategic Plan project will specifically evaluate the development of a commuter rail system that does not duplicate bus and light rail transit services outlined in the RTP but, rather, enhance regional transit by allowing for transfers between systems.

### **B.3.5 MAG Transit Framework Study**

Proposition 400, approved by the voters of Maricopa County in 2004 authorized the continuation of the existing half-cent sales tax for transportation in the region. This action provided a 20-year extension of the half-cent sales tax through calendar year 2025 to implement projects and programs identified in the MAG Regional Transportation Plan (RTP). While there will be considerable regional and local investments in transit over the next twenty years, additional transit funding will be needed to keep pace with anticipated growth. The Regional Transit Framework Study addresses this concern on two levels: 1) identifying priority transit investments that will be needed between now and 2025 to supplement Proposition 400 funding; and 2) extending the transit planning horizon to 2030 to identify longer term transit investment needs.

### **B.3.6 MAG Park-and-Ride-Study**

In 2001, the MAG Park-and-Ride Study was completed and recommended the development of a regional park-and-ride network to support transit operations and Valley mobility. Included in the study was the recommendation of a park-and-ride in Chandler, in the vicinity of the loop 202 & Val Vista Road. A subsequent site selection



study in 2005 identified the precise location of the Tumbleweed Park-and-Ride, which is currently under development and scheduled to open for operations in summer 2008.

### **B.3.7 Bus Rapid Transit Study**

The Regional Transportation Plan identified several corridors for arterial Bus Rapid Transit (BRT), a transportation mode combining the flexibility of bus transit with speed and carrying capacity of light rail. Portions of three of the identified corridors are located in Chandler: Arizona Avenue; Scottsdale/Rural; and Chandler Boulevard. Two on-going studies will address these corridors. The Comprehensive Arterial BRT Planning Study will identify service levels and funding prospects for each of the corridors identified in the RTP. The Arizona Avenue BRT route is scheduled to begin operations in July 2010.

### **B.3.8 Light Rail Study**

The Federal Transit Administration (FTA), Valley Metro Rail, Inc. (METRO) and the Cities of Tempe and Chandler are undertaking a 24-month study to evaluate high-capacity transit service improvements in the Tempe South Corridor; located in the southern portion of the City of Tempe and the western portion of the City of Chandler. The study, which includes an Alternatives Analysis and an Environmental Impact Statement, is the first stage of the federally sponsored transit planning process. It evaluates a variety of potential alignments and transit technologies (including bus rapid transit, light rail transit, modern streetcar and/or commuter rail) that could be built in the study area.

The project will provide a connection to the 20-mile METRO Central Phoenix/East Valley light rail starter line, which began operation in December 2008. The Tempe South study is funded by the Proposition 400 half-cent transportation sales tax extension approved by Maricopa County voters in 2004, and is contained in the Regional Transportation Plan as part of the 57 miles of high capacity transit corridors to be implemented by 2026.

### **B.3.9 MAG Congestion Study**

The MAG Congestion Study provides detailed traffic information in an electronic format that can be used to measure the relative congestion at arterial street intersections and on selected freeway segments throughout the valley. These data are used to identify locations that are operating under, near or over capacity, and to ensure that the travel demand forecast models are accurate for existing and future conditions. The City of Chandler was included in the MAG Congestion Study and the data was utilized for the traffic modeling to determine the year 2020 and 2040 traffic projects





## APPENDIX C: PUBLIC INVOLVEMENT

A comprehensive public involvement process was developed and implemented by the City of Chandler and its consultant to collect and incorporate the input from the many stakeholders affected by this Transportation Master Plan Update. These stakeholders include City of Chandler residents, property owners, business owners, the Transportation Commission and City Council.

Comments about the plan were received by way of verbal comments, comment cards, transportation surveys and email. ***City staff and the consultant reviewed all public comments received and the comment summaries were used to assist in the development of the recommended roadway, transit and bicycle/pedestrian improvements.***

The public involvement process included public meetings, a survey and information published on the City website.

### C.1 Citizen Survey

At the beginning of the Transportation Master Plan Update Study, a survey was developed to facilitate input into the development of the transportation plan. The surveys were made available throughout the City and at public meeting #1.

### C.2 Public Meetings

Two public meetings were held during the development of the Transportation Master Plan Update. The first public meeting was held in June 2008. Chandler staff and the consultant shared existing conditions information that included:

- Population and employment densities
- Existing number of through lanes
- Highest existing traffic volumes
- Intersections with the highest approach volumes
- Existing levels of service
- Existing and planned bus routes
- Transit project implementation schedule
- Roadway construction project update

The second public meeting was held in December 2009. The following information was presented at the meeting:

- Vision statement, goals and objectives developed by the Transportation Commission to guide the Chandler Transportation Master Plan Update
- Year 2030 level of service
- Capital Improvement Programs for FY2009-2014, FY2014-2019, FY2019-2024, FY2024-2029



- Year 2030 roadway system with recommended improvements
- Transit improvements (near-term, mid-term and long-term)
- Bicycle/Pedestrian corridor and focus area recommendations



## C.2.1 Public Meeting Summary #1

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# TRANSPORTATION MASTER PLAN



SUMMARY REPORT

*for the*

PUBLIC MEETING

June 25, 2008





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## 1. INTRODUCTION

On June 25, 2008, the City of Chandler conducted a public meeting related to the Chandler Transportation Plan study. The public meeting took place from 6 – 8 p.m. in the Chandler City Council Chambers located at 22 S. Delaware.

The purpose of the public meeting was to:

- Provide introductory information about the City's current efforts to update its Transportation Plan
- Obtain input on transportation issues and priorities; and
- Obtain input on the draft Vision Statement and Goals for the Transportation Plan.

## 2. MEETING NOTIFICATION AND ATTENDANCE

A meeting notification postcard was prepared (see **Exhibit 1**) as well as a media press release (see **Exhibit 2**). Additionally, the meeting was posted on the City Web site and Channel 11.

The City of Chandler's Communications and Public Affairs Department facilitated notifications as follows:

Postcard notices were e-mailed or otherwise electronically distributed to:

- Persons registered with the City for various recreational classes held at the Community Center  
Stakeholders at the airport;
- 900-plus neighborhood HOA contacts;
- Over 1000 people on City list serves ;
- A list of stakeholders from various public works projects;
- Members of the "Friends of the Library;" and
- Stakeholders identified by the Planning Department, including the Build Out Committee and General Plan Oversight Committee.

Postcard notices were mailed to:

- 240 people on a stakeholder list associated with downtown projects such as the South Arizona Avenue infrastructure projects and new City Hall, plus the Downtown Chandler Community Partnership and Chamber of Commerce;
- 215 people serving on various Boards and Commissions;
- 228 people who've completed the City Services Academies;
- 36 residents who applied to take Martin Sepulveda's place on Council during his Iraq tour;
- 66 people who attended prior Riggs Road widening public meetings;
- 200 people from the Geronimo Street Extension project;



- 
- 32 people from the Germann Road (Dobson-Alma School) public meetings;
  - 40 people associated with the Dobson/Warner intersection widening project;
  - 62 people identified as stakeholders in the Alma School/Ray intersection project;
  - 32 people from the Western Canal Trail project;
  - 158 people on the South Tempe Transit Corridor Study, including the following businesses:
    - Bashas
    - Verizon Wireless
    - Avnet Logistics
    - Intel
    - Chandler Fashion Center
    - Westcor
    - Statesman Group
    - ASU Research Park
  - 47 people from the Dobson/Chandler Blvd intersection project;
  - 37 people from the Alma School/Warner project;
  - 38 people from the Dobson/Elliott intersection project;
  - 8 people from the Dobson/Chandler Blvd intersection project;
  - 11 people from the Ocotillo Post Office Access public meetings;
  - 7 people from the Dobson Road widening project;
  - 25 people from the Cooper-Pecos Road widening project;
  - 16 people from the Price/Dobson Road improvement project;
  - 12 people from the project that widened Pecos Road;
  - 25 people from the Gilbert Road widening project; and
  - 61 stakeholders associated with the Queen Creek Road widening project.

### 3. INFORMATION PROVIDED

A brief PowerPoint presentation was made which described the background and purpose of the study, presented draft Vision Statement and Goals, and described next steps in the study, namely, to compile comment forms, analyze existing/current conditions, and develop alternatives to address future demand. A second public meeting is anticipated for fall 2008 and the Draft Plan will be produced in winter 2008. A copy of the PowerPoint is included as **Exhibit 3**.

Several boards were displayed that depicted existing transportation conditions and data. The boards were:

- Population Density
- Employment Density
- Existing Number of Through Lanes
- Highest Existing Traffic Volumes



- 
- Intersections with Highest Approach Volumes
  - Existing Level of Service
  - Existing and Planned Bus Routes
  - Transit Project Implementation Schedule
  - Roadway Construction Project Update

#### 4. INPUT RECEIVED

During the meeting, City of Chandler staff and other members of the study team were available to talk with attendees, listen to comments and concerns, and answer any questions. Through those discussions, comments and questions (staff answers/responses are provided in italics) included the following:

1. Who are the key stakeholders who will be contacted regarding the project? *Key stakeholders would include residents, businesses, public meeting attendees (signed in), other cities and agencies.*
2. What about connecting to other growing communities, e.g., Maricopa, Queen Creek? *Yes, connectivity to other communities is an important element of the plan.*
3. In the 2007 City needs assessment, transportation ranked very high, will that be considered? *Yes and a copy of that document will go to the consultants who are preparing this study.*
4. Is someone from ADOT here tonight? *No (City staff described some of ADOT's HOV and freeway improvements planned in Chandler and pointed out that the City is active in the Maricopa Association of Governments, the region's planning organization, and will coordinate the City's transportation plans with those of ADOT and the rest of the region).*
5. Can the existing rail lines be used for commuter service? *That is an option that is being considered in the Tempe South Study and in the Arizona Avenue Study; there are also broader studies, e.g., commuter rail between Phoenix and Tucson.*
6. Will [the results of] the surveys be posted? *Yes, on the City website.*
7. What is the timeline for light rail reaching Chandler? Mesa? *Light rail will reach Mesa later this year – December 2008 – and studies are underway to explore light rail and other high capacity service in Chandler, however, any extension to Chandler would be at least 20 years away under the current funding sources available. Accelerating that schedule would require identification of an additional funding source(s).*
8. Will express service (e.g. route 541) go away with implementation of light rail and if so, is it true that transferring to light rail will actually be a longer trip to downtown Phoenix in terms of time? *Express routes will be modified to take advantage of freeways, HOV lanes and park and ride lots (staff explained that they had not heard about longer trip times).*
9. What are the plans for neighborhood circulator routes? *The 2002 Transit Plan recommended several neighborhood circulator routes but there is no funding currently available. This new plan will provide more detail and a strategy to identify funding to provide one or two neighborhood circulator routes.*



10. I used the Ahwatukee circulator and waited in the wrong place – would recommend that neighborhood circulators connect closely with the fixed routes bus stops or provide very good signage between fixed route and neighborhood circulator stops.
11. Will bicycle safety be addressed in the Plan? Yes.
12. Mesa has a program for disabled residents that facilitates recruiting a neighbor to provide a ride to bus or rail and the city reimburses the neighbor. *Staff described Chandler's Dial-a-Ride and Cab Coupon programs and noted that Valley Metro is looking to implement a program similar to Mesa's through a grant that Chandler has received.*

#### 4.1 Comments on Vision Statement and Goals

A handout showing the draft Vision Statement and Goals was distributed at the public meeting. This handout also asked for comments/input on the draft Vision Statement and Goals. A copy of the handout is included at **Exhibit 4**. Responses are provided below:

1. I think there needs to be more attention to quality of life, reduction of stress and sustainability in the process. It seems like a waste of money to continually make street improvements as a result of focusing on cars when we should be pioneering the way for a community focused on mass transit option powered by solar energy. We should also be building-zoned areas going upwards instead of sprawling outwards including affordable housing for the average person or family. Tall building with businesses, grocery stores, and housing; community gardens and green roofs to reduce dependence on distant farms and oil. If we really want to be visionary, we need to think big and long term. Think beyond the car on an individual level.
2. These are very good thoughts, but there is one thing that comes to mind when thinking of a 20 year plan. Is there a way to make it easy to use- in fact- so easy that it makes it as easy to use as a car? In Hong Kong (granted it's a very small space compared to our sprawl) but it's easy to use the public transport. There are cards you can buy that are like a credit card that are able to be used for the bus, metro and even at vending machines and 7-11 stores. These cards are refillable by simply adding money to the card either thru the specified machines or at the participating stores. With these, there is no time limit, no dollar amount (you have to have the money on you card to ride the transport of course) and it just makes it super convenient.
3. Good goals. I think rail should go from all malls and should utilize freeways in the middle, above or below. I also greatly support a green plan. Check out Japan and Europe and let's do one better! Bikes are great but please include electric wheelchairs, segways, golf carts, mini EV's of various sorts, skateboards, roller blades, and other clean and healthy "bike" paths. Consider aging populations and tricycles.
4. I am interested in Goal #3 because I do not see a lot of bus transportation in the area where I work (Price Rd). It would be good to have transportation into Chandler from outside areas (i.e. West Valley) this would greatly help people that have to commute to Chandler.





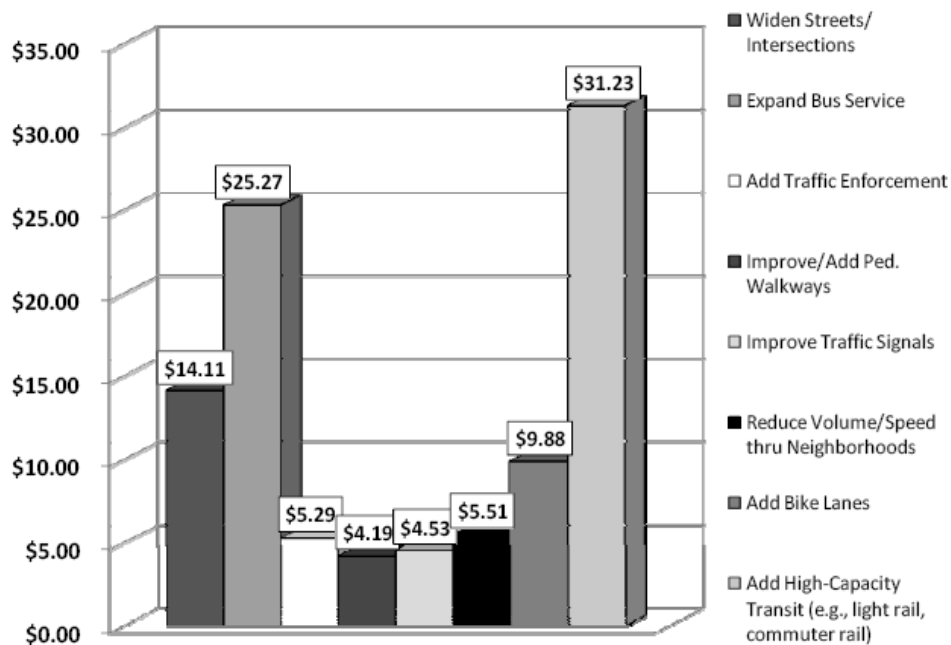
5. I think the plans and goals of the City of Chandler are great. It will not only improve driving around town for residents such as myself, but will improve the perception on a much grander scale. I work for Amkor Technology on Price Road and have many international clients who visit our company. By improving our streets, the City of Chandler will impress those from other countries and make our business look great too. It's a win-win.

#### 4.2 Survey Responses

At the beginning of the Transportation Plan Study, a survey sheet was developed to facilitate input into development of the transportation plan. To date, these survey sheets have been made available at various public events and were also distributed at the public meeting. A copy of the survey sheet is included as **Exhibit 5**.

One side of the survey poses the question, "If you had \$100 to spend on transportation improvements, how would you divide the money among the following transportation improvements?" Responses to date, included those received at the public meeting, are summarized in the chart below.

**Figure 1: Average Allocation (Dollar Amount)**





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The other side of the survey asked, “What do you think about:” various transportation elements, i.e., streets and roads, neighborhood traffic, public transportation, and bike/pedestrian facilities. Results of that section of the survey are described generally and specifically on the following pages.

#### 4.2.1 Overview of Comments

The main (most often cited) concerns for each category are provided below. The specific, individual comments for each category are included at the end of this section.

##### Streets & Roads

- Control speed – all roadways
- Widening
  - Intersections are too wide in North Chandler, inhibiting and/or restricting walking and biking
  - Inconsistent lanes, e.g., roads narrowing and widening
- More landscaping
  - Wider sidewalks
  - More shade
- Maintenance
  - Stagger maintenance/construction schedules
  - Use higher quality street repair materials that do not produce an ugly spider web of black stripes
- Congestion
- Specific requests
  - Install a stop sign on the corner of Desert Breeze Road and W. Tyson Street.
  - Kyrene southbound to turn onto eastbound 202, the light signals are mismanaged, the middle lane is left turn only (marked on street) and the signal light is for straight ahead.
  - Widen:
    - All roads east of Arizona Ave. to Val Vista
    - Gilbert Road from Germann to Riggs

##### Neighborhood Traffic

- Too much speeding
- Excessive street parking
- Specific Requests
  - Need speed bumps on Summit between Hendrix Jr. High and Alma School Road
  - Need more marked crosswalks with signal lights on the Paseo Trail

##### Public Transportation

- Overwhelming support<sup>1</sup> for expansion and improvement

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<sup>1</sup> Numerous comments urging public transportation expansion and prioritization. Neither comments opposed to public transportation nor any specific public transportation mode (e.g., bus rapid transit, light rail, commuter rail, etc.) were submitted.



- 
- Improve connections and commuter service to other cities
  - Implement rail, bus rapid transit, circulator buses
  - Add RAPID park and ride lot(s)
    - RAPID to downtown Phoenix
  - Specific
    - Connect to light rail in Tempe
    - Expand service to:
      - South and southeast Chandler
      - Chandler Mall south on Price to Intel and Dobson and Ocotillo Rd.
      - Orbital/Downtown Ocotillo area
      - Communities along Riggs Rd. from Alma School Rd. East to Gilbert Rd. – serving Cooper Commons, Sunbird, Springfield, and the Sun Lakes area
      - Airport

**Bike/Pedestrian Facilities**

- Connectivity
- Need more paths and trails
- Make the community more bike-friendly (bike racks, more facilities, incentives for employers to support bicycling)
- Controlled canal path/major street crossings
- Specific
  - Need a north-south route in west Chandler
  - Need white lines along S. Price Road
  - Introduce Smart Streets
  - Tumbleweed Recreation Center needs covered bike racks
  - Need more trees/shade along Paso Trail and other trails
  - More signage to alert motorists

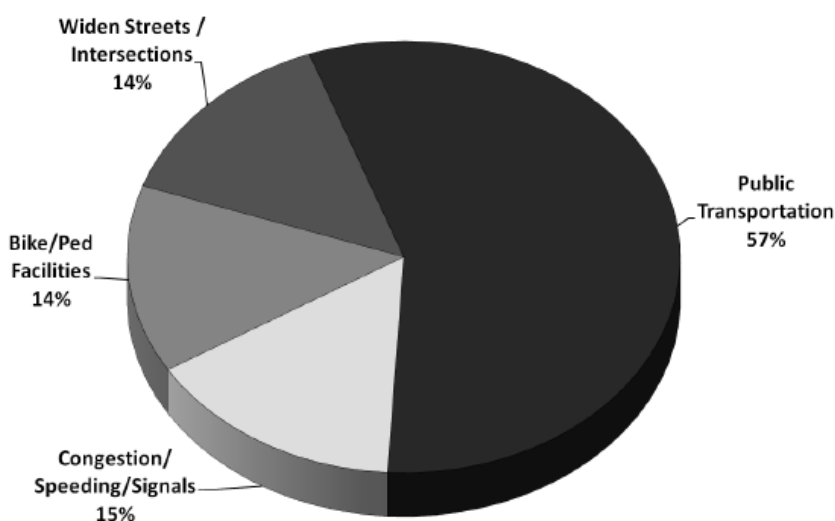
The summary of comments is supported by the quantitative data (described earlier in Figure 1). By combining the data from Figure 1 into broader transportation-type categories, the relative importance that respondents applied to each category can be determined. For example, respondents believed that public transportation improvements merited receiving well over half of all transportation resources.<sup>2</sup> See Figure 2.

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<sup>2</sup> Out of a theoretical \$100 total transportation funding available, respondents to date allocated \$56.50 to public transportation, namely, expanding bus service and implementing high-capacity transit systems (light rail, commuter rail, bus rapid transit).



Figure 2: Percentage Allocated to Type of Transportation Improvement



#### 4.2.2 Specific Comments

Specific comments received on this section of the survey to date, and including responses received at the public meeting, are listed and categorized by topic below:

##### A. Streets and Roads

1. As roads are widened, please follow up with traffic control, especially speed control!
2. Widening of roads east of Arizona to Val Vista now!
3. More landscaping along major arterials. Retrofit existing arterials with landscaped medians.
4. I like the way you are arranging pull-off's for city transit buses – it helps keep traffic moving. It's good to have major intersections redone. We like the new active speed signs that flash our speed.
5. Chandler is doing a great job maintaining major streets and neighborhoods.
6. Inadequate.
7. [The City is] too slow to fix problem areas.
8. When sprinklers overflow into the streets – [it is] causing damage – [those responsible] should be contacted – warned – ticketed.



- 
9. Needs repaving.
  10. I like the aggressive intersection improvements, e.g., Warner & Alma School.
  11. Too much traffic.
  12. The roads need attention – repave or resurface.
  13. Excellent, very well planned.
  14. Widen Gilbert Road from Germann to Riggs Road now! It is the main artery for south Chandler.
  15. Too many streets and roads are under “scheduled” repair at the same times. Work needs to be more staggered.
  16. Explosive growth has put us behind. We need to strive to stay on our plan for build out.
  17. They are becoming very easy to drive – wider and middle lanes – ok. New [bus??] sections are great. Bike lanes need widening.
  18. Construction [is] poorly-managed.
  19. Okay – areas [need] to be improved to meet growth.
  20. Streets and roads [are] always under repair.
  21. Streets and roads are in good condition, but too fast. Speed limits are not well enforced. The better the roads are, the faster the drivers will go. There are many cars and trucks and too few sidewalks. Public transportation- needs more buses and need to run them further south (i.e. Intel).
  22. Maintenance levels appear adequate.
  23. An excellent freeway and one mile grid infrastructure. Speed bumps every 100 yards or so - for vehicles in my neighborhood so that they follow the speed limit. It doesn't come near home, nor does it go to useful places in anywhere near the time of driving. I love riding bikes and used to ride frequently in Indiana. However after 10.5 years in Chandler, I have yet to ride to work or elsewhere. Traffic is fast and reckless. Riding the Price corridor or reasonably close [to] Dobson Rd. would be just a matter of time before serious injury, as has happened to acquaintances and colleagues, or death. A high capacity transit down the Price Corridor, plus or minus a mile, with park and go lots would provide great access to downtown.
  24. Please finish the Chandler Park and Ride and please keep Chandler residents advised of the progress and proposed bus routes and times and continue to ask bus riders for their preferences.
  25. Please install a stop sign on the corner of Desert Breeze Rd and W. Tyson Street. It's a blind corner and very dangerous for the kids to cross.
  26. The city needs to better plan when road construction is done. Most of the time there are weeks when obstructions speed reductions are in place without any apparent work. Also coordinate streets that are not next to each other.



- 
27. Need additional routes and flexibility. I am particularly interested in bus transportation on South Price Rd. getting to and from the transit hub at Chandler Mall. Need white lines along S. Price Rd.
  28. Material used for neighborhood street maintenance (i.e. crack sealing and top coat) produce ugly spider web of black stripes that reduce property values. Budgets should be appropriately adjusted to use higher quality street repair materials that do not produce an ugly spider web of black stripes. We need more speed enforcement on Superstition Blvd. between Ray Road and Chandler Boulevard.
  29. Seem to be adequate at the moment. Lots of "racing" in my neighborhood up Carriage Lane (from S. Orchid to Ray Rd).
  30. Finish S. Chandler CIP.
  31. Many lights either don't have a signal button or don't let you cross at all.
  32. Intersections are too wide in North Chandler. These "improvements" make walking and biking impossible. Wider intersections push congestion closer to neighborhood streets and make it difficult to turn into subdivisions.
  33. Sidewalks next to arterial streets are too narrow - they should be at least eight feet wide. More shade is needed.
  34. Stop making wide streets to facilitate cut-through traffic stop making intersections wider.
  35. Don't work on multiple streets in the same area at the same time (i.e., Queen Creek and Price Road). Continue to finish expansions in SE Chandler of existing roadways.
  36. Strive for at least four-lane roads and if possible six-lane roads throughout Chandler.
  37. Traffic Circles.
  38. Well maintained! Clean- signal light timing meets volume.
  39. Any plans for bus "pull outs" on streets so buses aren't blocking lanes of traffic?
  40. Be consistent with number of lanes on road, example a three-lane or two-lane going into a two-lane or one-lane on a street going in the same direction causes a back up of traffic. Neighborhood streets should have a weight limit on vehicles – this will minimize street repairs.
  41. More landscaping or complete landscaping on Lindsay between Riggs and Hunt to eliminate dirt bike races on gravel.
  42. We should plan for continued maintenance of existing infrastructure but emphasize more options for getting off our streets.
  43. Chandler seems to always be working on some street somewhere all the time – so if our streets aren't good now they will be someday.
  44. For the most part I think streets and roads in Chandler are well maintained.



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45. The streets and roads in the area where we live are great. Chandler seems to have done a good job with making improvements to keep up with the growth in our area (Germann/Price Rd.).
  46. Need consistent two or three lanes – narrowed spots add danger and slow traffic. In general Chandler has wonderful streets and roads. If buses are added – need pull off bus stops.
  47. I am pleased Chandler adds bike lanes to road improvements.
  48. Good. More intersections should be complete.
  49. We can reduce road width to encourage slower driving. We can move gas stations and fast food away from intersections corners to improve safety.
  50. Obviously, present roads and streets need to be maintained. By far the majority of the money marked for new streets should be diverted to public transportation. Building new roads to move more people is fighting a losing battle.
  51. In good condition in Chandler.
  52. When landscaping public areas, pay attention where trees are located. Try to exploit their unique contribution to shade and lowering heat irradiated from concrete and buildings. Same can be said of bushes and plants.
  53. Seem well maintained; however does widening intersections always make them safer? Seems some of the widest intersections are most deadly. Add right turn arrows and red light cameras. Stop red light runner! Add more bike signage. Consider street tree program to green up Chandler with desert loving canopy trees. Right turn deceleration lanes a must!
  54. Good job of widening streets and improving infrastructure (McQueen from Riggs to Queen Creek).
  55. Need some improvements.
  56. Too much construction, has not kept up with development. Neighborhoods are built without the proper infrastructure.
  57. Fairly good conditions.
  58. The streets and roads are better and in good condition.
  59. I just moved to Chandler in May and my experiences driving around have been pleasant. There is a lot less road work here which is a good thing. I felt like projects in Mesa never seemed to end.
  60. I believe some major streets should have their speed limit increased. For example, McQueen Road drops to 35 mph; it should stay at 45 mph. It is not as heavily traveled as the other downtown sections like Arizona Avenue.
  61. I live by Kyrene and the 202 Interchange. Southbound on Kyrene to turn onto eastbound 202 the light signals are mismanaged, the middle lane is left turn only (marked on street) and the signal light is for straight ahead. Also, when I am on the 202 westbound to go home, there is no notice of road closure for I-10; there should



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be notice for road closures BEFORE entering the freeway. Twice now I have entered the westbound 202 to go west on I-10 with no idea the interchange was closed.

62. Many more north-south roads need to be improved to provide ease of traffic to and from 202. Many of our streets are breaking up with huge potholes.
63. You're doing a great job of upkeep on the streets and roads. Expansion of both is greatly appreciated.

**B. Neighborhood Traffic**

1. High school students [are] parking on residential streets – [students] travel too fast down the street after school, i.e., Erie, Washington, Detroit, Colorado, and Delaware.
2. Neighborhood traffic near my house is pretty maintained to a low volume. Overall I am not bothered by it. However speed bumps are needed on Summit between Hendrix Jr. High and Alma School Rd.
3. Flows well and we haven't seen any traffic accidents in our particular area.
6. As roads are widened, please follow up with traffic control, especially speed control!
7. Need new code that removes big trailer houses from the street to make passage safer (like at 1345 N. Oregon Street). It's located near [an] intersection and makes [the] street one lane.
8. Little or no respect for families and family activities – too many neighbors speed without thought to children and their safety.
9. Acceptable.
10. [Traffic] flows good.
11. Slow humps do not work! Young drivers in import cars fly these bumps.
12. Excessive street parking.
13. Our neighborhood – particularly one entrance street has discussed speed humps.
14. Fine.
15. My neighborhood is great – traffic is not bad.
16. Excellent.
17. Better regulation of speeds on non-arterial streets (feeder [streets] like Island Drive or Riggs Ranch Meadows Drive).
18. Alternate methods to enforce speed other than speed bumps.
19. Need education for residents on traffic safety in our neighborhoods.
20. [Need] more 25 mph signs on streets to announce speed on road (East Ivanhoe Street).
21. Okay.
22. Need speed bumps to slow traffic down.





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23. I see no problem besides the occasional speeder or knot of traffic. The cost of fuel will drive increase use of Public Transportation.
  24. We live in a gated community and would like a signal out our main gate as it is difficult to get out on occasion.
  25. Neighborhood traffic is bad on one lane streets in S. Chandler otherwise ok.
  26. People will always go as fast as they want.
  27. Slow down neighborhood traffic, but really it's the resident's responsibility.
  28. The existing traffic calming policy is too restrictive. Need to narrow neighborhood streets, add landscaping, wider sidewalks and bike lanes.
  29. Neighborhood traffic seems adequate speed. Signage, but more enforcement needed.
  30. Low humps do not work!
  31. Loud motorcycles should be ticketed with hefty fine – cars are not allowed to have noisy mufflers why is it ok for motorcycles? Repave neighborhood streets with sound proofing materials.
  32. Our neighborhood is fine, reasonable level of traffic.
  33. We live in a gated area so I'm not aware of how neighborhood traffic is in other places!
  34. Need more marked crosswalks with signal lights on the Paseo Trail. It is not any safer to walk or ride to nearest intersection – just longer.
  35. Good. Lots of speeders on Riggs and Hunt.
  36. We can allow small box retail to move closer to residential areas to reduce the need to drive. Additional traffic lights out of neighborhoods will encourage drivers to exit rather than cut through neighborhoods.
  37. Continue speed bumps – saves on policing for other major issues – road light cameras a good idea.
  38. 25 mph too high for small local streets. Some streets too wide – need center landscape strip – or other to reduce speeds and beautify neighborhoods. Add trees!
  39. Older areas need attention.

**C. Public Transportation**

1. Definitely need to improve this area. This will reduce the traffic volume. Need a reduced rate for seniors to encourage their participation.
2. Please explore expansion into south and southeast Chandler.
3. [Need] added service to south and southeast Chandler (Riggs Road) or park-and-ride areas closer to Riggs Road.
4. Need more local service and improved user-friendly and comfortable bus shelters.



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5. Need to offer at greater levels to Chandler residents – survey neighborhoods in city “quadrants” to determine Chandler resident needs.
  6. Needs improvement.
  7. What [public] transportation?
  8. Think ahead and go for heavy rail!
  9. Needs major improvement commuter service to other cities. Also shuttle services for neighborhood, school children, and shopping center.
  10. In my area – 101-Dobson at Warner – bus service is reliable.
  11. Don’t use.
  12. Need more public transportation for aging population (store, doctor, food).
  13. Very weak, needs improvement.
  14. Need buses south of Pecos and east of Alma School Road.
  15. Needs to become more “dense” to support the increasing population density.
  16. Great need for circulator buses to bring people to malls and to express buses.
  17. Find a way to make people ride [the bus] to work if it’s on [a] route. Transportation must be user friendly.
  18. Poor – does not meet needs of citizens, especially those with no alternative transportation.
  19. Maybe [provide] more buses during the day.
  20. I believe if this county (Mariocpa) - not just Chandler- had a bus service; more people would utilize the bus. Especially now- high cost of gas. What about people living in Tempe, Mesa, and working in South Chandler. There is absolutely no bus service.
  21. Add bus routes: Chandler Mall south on Price to Intel and Dobson and Octotillo Rd. Add electric buses powered by overhead lines. Utilize existing rail for daily commuters into Phoenix and connect to light rail on bus line.
  22. Connect to light rail in Tempe.
  23. We need the light rail down Rural Road and Chandler Blvd. Please let me know when a decision has been made.
  24. We would use light rail if it were more convenient or even mini-bus system to get to rail stops especially to get into downtown Phoenix.
  25. Need additional routes and flexibility. I am particularly interested in bus transportation on South Price Rd. getting to and from the transit hub at Chandler Mall.
  26. Public Transportation is limited and/or inaccessible to make it virtually unusable. Some of the special plans for seniors only are helpful, but not everyone is 65+ years of age. The time required to make multiple connections (on the bus) for a commuter



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exceeds the time required by a car and therefore limits its use. We need to focus our resources on solutions for vehicles, traffic and transit systems. These are our greatest needs. A focus on facilitation might clash with attempts to improve transit systems. Our orientation has been vehicular based, so a solution in that area is likely to be less costly (and less time to implement) versus a change in orientation toward pedestrian bike.

27. Public transportation needs buses to run more often and on weekends and nights- more direct routes and shaded bus stops.
28. There needs to be service to the Orbital/Downtown Ocotillo area, and this should be done before the end of 2008.
29. Need public bus service to and from communities along Riggs Rd. from Alma School Rd. East to Gilbert Rd. Need additional freeway North and South near Arizona Ave. from Riggs Rd. to North of Scottsdale.
30. Improvement for public transportation needs to extend to S. Chandler.
31. There needs to be shade at every bus stop. More motorcycle parking! What about a garden of the roof the Chandler Park and Ride? Allow community gardeners to grow food for local shelters, etc.... More water fountains. If we want people to ride; we need to make it work for the commuters.
32. Public transportation needs to be easier and marketed better – instead of the local news telling people to get locks for their gas tanks, have local news tell that bikes are out there and public transportation is really easy and available.
33. Public transportation needs a wide variety of options to address all Chandler residents. Review 2007 City of Chandler Social Services Needs Assessment.
34. I'd add a reimbursement program for neighbors who transport neighbors who cannot "walk" to bus stops and need door to door transportation.
35. Hour frequency on Rt. 108 in unacceptable and doesn't work for transit riders. Need more hours, more frequency (10/15 mi. peak service, 30 min off peak, more routes! Find a local dedicated funding source to create a real transit system that works!
36. Need to work on Bus Rapid Transit. Bring light rail to the City- Buses to the south Sunbird, Springfield.
37. Additional transportation needed for seniors and disabled persons (medical appointments etc...) or mileage reimbursement programs like Mesa.
38. Very few seem to use buses, frequently see few passengers on them. There is a need for transportation to and from the airport. Additional transportation is needed for seniors - currently does not meet needs.
39. I lived in Japan for two years. Train systems are fast, cheap and clean. Invest in light rail and utilize all existing rail roads for connecting and to eliminate long distance trucking (Connecting school to school to eliminate some buses). Large parking area for light rail.



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40. Use solar vans – ADOT holds title on small local circulator routes. Partner with churches, shuttle agencies and cab services.
  41. Good and improving!
  42. Need to take advantage and perhaps have more park and ride station. Public transportation should not be on neighborhood streets. It will cause a lot of wear and tear on roads.
  43. If Chandler is going to survive with much higher transportation costs, we need to vastly improve public transportation. Given the “last mile” problem of getting commuters to and from mass transit routes, we need park and ride facilities against these as real transit solutions. I don’t see how the current land use patterns in Chandler can allow very much bike or pedestrian-friendly travel. We need to make Chandler viable for much reduced use of cars. Traffic should go down, so we shouldn’t need wider streets. Some of the most important changes have to come from increased use of high density housing linked to mass transit. I do not believe we will see cheap gas or miracle electric or hydrogen vehicles.
  44. I am not yet 60 and drive very well, however even I would ride a City bus to save gas if we had a route on Riggs Rd. with several pick ups a day.
  45. Ours are better than most. I would like to see buses have a daily route down Riggs Rd. serving Cooper Commons, Sunbirch, Springfield and the Sun Lakes area! Please don’t suggest we drive to a parking lot to catch a bus- make a route to come to us.
    1. Route from here (Riggs) by Chandler Hospital area and on to Fashion Mall! 2.
    - Route from here (Riggs) to shopping on Arizona (Wal- Mart), Lowes, Home Depot, etc.
  46. Would like to see more routes in further south areas of Chandler. For my personal interest I would like to see a bus route up and down Dobson Rd. This route would be beneficial if it would go to Dobson and Ocotillo.
  47. My wife works at a downtown Phoenix law firm, so she catches the RAPID bus at the 40TH and Pecos Park and Ride. It would be AWESOME if Chandler had a RAPID Park and Ride or even better, if Chandler hooked into the light rail! Need more Public Transportation. Would like bus service from Solera to Chandler Mall.
  48. Please start a new RAPID route from Tumbleweed Park and Ride. We need a RAPID to downtown Phoenix.
  49. Would like small neighborhood buses that link to larger transit centers. Need access to shopping malls, movies, hospitals and fitness centers. A commuter transit and light rail plus bus that comes to at least Riggs/Gilbert would help.
  50. I was pleased by Mike Norman’s comments in the newspaper. I hope there will be less than half an hour between buses.
  51. Need to extend to Riggs Rd.
  52. We need our own north to south commuter rail lines to bring us up through Mesa to connect to the new light rail line to Tempe and Phoenix.



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53. More bus service especially to south and southeast Chandler possibly linking express bus with Queen Creek that travels through our roads.
  54. I live at zip code 85249 (Riggs and Gilbert) we need public transportation available to offer on alternative to our only current option of transportation: DRIVING! I'd like to cut down my fuel expense for work each day!!
  55. Riggs Rd. needs a bus route. It would be great to get to shopping from Riggs and McQueen to Mall for others.
  56. Lack of light rail and connecting neighborhood buses is a serious issue to the future growth of Chandler. There is a limited, and expensive, amount of land for more streets. Light rail is cheaper per mile to construct and moves far more people faster! AND LESS AIR POLLUTION! [Bike/Ped.] More bike lanes and more bike paths designed to provide safe access to high schools, libraries, private and public offices, strip malls and downtown Chandler. Curved rather than right angle curbs facilitate an 'escape route' in an emergency. Light Rail- no need to re-invent the wheel. Study other cities- success depends on careful planning. See Portland, OR (where everyone said people would not give up their cars, but they did!) Chicago, Washington and why not look at Germany, France, Belgium, etc... We cannot afford to wait 20 years!
  57. Almost inexistent. Hamilton school area has no public transportation at all. Public transportation should be priority. Increase frequency and connectivity to other areas in the Valley.
  58. We need to use this opportunity to expand Public Transport. It's good for the environment and helps people save money as gas prices rise.
  59. We have public transportation? (Just kidding). Regional public transportation with a variety of routes (local, intercity, express) and brief intervals between buses (or train or van or whatever) a must. Buses should come every five minutes or less to work. What about low capacity systems that get people to the high capacity systems. This is missing! It is one and a half miles to the nearest line to my work – then I would have to walk four miles from there to work! I'm talking passenger van or 15 people vans.
  60. There are no buses/ public transportation going in the area of Price Road. It would be helpful to have such, since there are quite a few companies on that road. It would be nice to have some sort of transportation from the west valley to the east, especially with the rising cost of gas.
  61. Need transportation along Riggs Road – Sun Lakes to Gilbert north on Gilbert to Gilbert/Germann for shopping.
  62. I ride the 541 bus into downtown Phoenix. I think the express buses would fare better in the PM to take the 202 instead of the I-10. It gets so bogged down around 40th Ave. It should at least be tried!
  63. With rising costs of fuel we need more public transportation. We work at Price Rd. and Germann and there is no public transportation here. There are a lot of companies here I bet they all feel the same.



64. Poor public transportation [due too] connectivity and frequency of buses.
65. Non-existent at Chandler Blvd and Kyrene. Need something from Chandler Mall to Ocotillo Corporate Center. Trying to “fix” the problem after the fact makes it look as though it’s not a priority. With the city growth, desire to bring more high tech business to the area and help decrease the number of ozone days. Transportation needs to be at the top of the list.
66. Lacking – there is no public transportation going to Price Rd. and Germann. There are a lot of companies here and I bet they all would like to have public transportation in this area. Please start bus service to the City of Maricopa. This will help us greatly to solve our daily commute problems. We can no longer afford the high gas prices and having a bus service will also be good for the environment. Thanks for your help.
67. The public transportation system is poor compared to other cities and states with the same population; bad – not enough!
68. I would like to see more public transportation in the Price/ 101 Corridor.
69. Need a lot of improvement. Regular service at 15 min. intervals between 7:00 am and 9:00 am and 4:00 pm and 6:00 pm on key roads will be very useful. Reduced frequency at other time is ok.
70. Very poor, not many connection routes in the City – needs improvement.
71. I enjoy using my own vehicle, but maybe if I learned more about public transportation I would consider it.
72. Add a RAPID bus from Germann Park and Ride location to downtown Phoenix. Add more bus routes to south/ southeast Chandler.
73. Needs attention. No easy way from Ahwatukee to Chandler in the morning. Buses stop at Chandler Mall and neglect huge work areas south of mall.
74. We need more regional buses with local bus feeders - this needs to happen soon – How about combining the school buses to form a local system (joint utilization saves money) No light rail.
75. Needs desperately to be expanded to southeast Chandler. We live in Sunbird.
76. Add bus routes. Chandler Mall south on Price to Intel and Dobson and Ocotillo Rd. Add electric buses powered by overhead lines. Utilize existing rail for daily commuters into Phoenix and connect to Light Rail on bus line.
77. Public transportation- needs more buses and need to run them further south (i.e. Intel)
78. A high capacity transit down the Price Corridor, plus or minus a mile, with park and go lots would provide great access to downtown.
79. Please finish the Chandler Park and Ride
80. Any plans for bus “pull outs” on streets so buses aren’t blocking lanes of traffic?



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#### D. Bike/Pedestrian Facilities

1. This should be a major focus. Chandler should be a "healthy community." More trails, improved pedestrian environments along major arterials.
2. Paseo Trail is wonderful! Advertise so Chandler residents can enjoy – advertise park amenities to neighborhoods for usage.
3. Improving.
4. High priority in this climate to reduce vehicular traffic.
5. Ok.
6. Not enough attention to bike paths.
7. Excellent.
8. No bike paths except for Cross Cut Canal in south Chandler.
9. Need to increase the number of bikeways, bike R.O.W's, and visibility of these.
10. Need a north-south route in west Chandler. Every section of Chandler needs to have safe, accessible bike routes – we have too many routes that just end, [for] example, Chandler Boulevard east of Arizona Avenue.
11. Widen the road bike lanes a bit more to permit a tricycle.
12. Good.
13. [Would] like to see more bike lanes.
14. Not enough [bike/pedestrian facilities]. Need fewer roads for cars and more bikes and pedestrian paths. Also bike lanes are dangerous because the speed limits are not enforced. Bike lanes are only essential if the motorists respect them and drive under 40 m.p.h.
15. Suggest expanding bike paths to help people like myself bike to work. Bike lanes through the south Price corridor need to be completed. From Chandler Mall to Germann Rd., bicyclists need a safer path to travel. This affects a significant number of people who work in the offices south to the 202 Santan Freeway.
16. Need white lines along S. Price Rd. Need sidewalks completed. I live in Ahwatukee and work in Chandler (S. Price Rd) and would like some way to get from the transit hub at the Chandler Mall to my work place at Germann and Price. With the construction it is insane to bike.
17. Bike paths – would like to see more – but with increase of traffic and speed, I'm afraid to ride on the street, at times I resort to the sidewalk. I feel it's too dangerous to ride on the street.
18. Lanes for lower speed vehicles (like the electric scooter [that] goes less than 30 mph) might be considered in conjunction with bike lanes.
19. Disjointed bike system/ low utilization.
20. The bike lanes stop and start randomly- needs to be more complete.



21. Chandler is not very bike friendly on the major roads. Business complexes need more bike racks too. We'll need to spend less money on widening roads if we put it towards public mass transportation as well as making it easier to bicycle in the City.
22. There needs to be bike lanes or alternative routes for the freeway intersections and bike lanes need to connect. A lot of roads have bike lanes but they only go for half a mile (on the smaller streets i.e., Galveston St.).
23. Large corporations need to step it up with providing showers at work, incentives for taking public transport.
24. Would be nice to bike over, around, under the freeways that divide the City.
25. Bike lanes need to extend through intersections so bikes don't get cut off by cars. Dual right turns with no bike lane at Loop 101/ Elliot is a death trap! To be sustainable, the community needs to invest in transit. Create walkable neighborhoods.
26. We need to make north/ south improvements for bike lanes in west Chandler. Need to have lanes that don't end on Ray Rd and Chandler Blvd.
27. Probably a need for more bike lanes, but a definite need for pedestrian safety measures (too much jaywalking with respect for motorists) pedestrian safety hazard.
28. Cooled and safe bikeways without crazy auto drivers competing for space.
29. Introduce Smart Streets.
30. Good. Hold the tax rate – use the funds for City needs and improvements.
31. Bike lanes are great but are not consistent. Once a bike lane ends where is the biker to go?
32. In addition to being known for most connected, also be known for "most bike friendly" city. Educate [the] public to be aware of cyclists. I applaud your efforts in building the bike paths along the canal. The completion of these paths is anticipated. Where these paths cross busy streets, I hope there will be blinking yellow light or traffic signal where cyclists may push a button to promote safe crossing.
33. Overall I have been pleased with the number of bike lanes and pedestrian facilities. I am looking forward to having a bus route that will accommodate employees near Intel and Orbital.
34. Given the nature of Arizona's aggressive drivers, we're too afraid to ride bicycles here. Walks are good, though, and Chandler seems to have plenty of parks where you can do that.
35. Tumbleweed Recreation Center needs covered bike racks, many public areas with bike racks. Need more trees/shade along Paso Trail and other trails.
36. I live in the Arrowhead Meadows neighborhood. Traffic here is no problem.
37. Chandler has come a very long way on bike lanes.

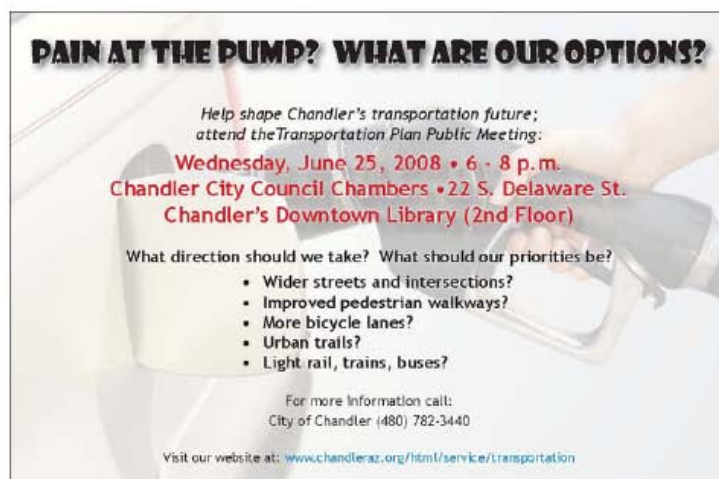




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38. Very good.
  39. As citizens of Chandler, we need shade and amenities within close proximity. We can reduce street width and parking requirements to allow more room for shade and retail amenities.
  40. We need overpass or lights where canal paths intersect major streets. I would use canal paths daily if not for traffic issues when crossing Alma School and Dobson. Improve the existing canal system paths to make them more user-friendly.
  41. Bicycle lanes in any new or improved roads – markers at Paseo Trail and crossings major roads.
  42. More bike lanes (McQueen)?
  43. Safety is of concern. Bike lanes should be crested “inside” sidewalks, especially where sidewalks are wide.
  44. Bike lanes not offered on all roadways. Need more signage to alert drivers to share road (minimum three foot clearance)! Pedestrian walkways between neighborhoods and between commercial centers should be offered. Separate sidewalks from roadways! Too scary and noisy otherwise - even on small local streets.
  45. Bike lanes exist on few roads. Would be nice to have a bike lane on every street.
  46. Reasonably good. Would like to see bike lane on the Price Corridor as well.
  47. The summer is far too hot to ride or walk. Maybe I would consider this option in the fall or winter.
  48. Cycling on Price Road south of [the] mall is suicide.
  49. Not enough areas are designated for bikes. Need more bike paths, especially on Price Rd. from Chandler Blvd. to Queen Creek. Would like to see the City get on top of the public transportation while the city is still growing.
  50. Many lights either don't have a signal button or don't let you cross at all.



**Exhibit 1: Notification Postcard**



**Exhibit 2: Press Release**

FOR IMMEDIATE RELEASE

**For Information Contact:**  
Mike Normand, Transportation Services & Planning Manager  
480-782-3440

May 30, 2008

**City to hold Public Meeting on Transportation**

CHANDLER -- The City of Chandler is updating its Transportation Plan and is asking its citizens to take an active role. Over the next few months, residents will be asked for their ideas, opinions and priorities concerning improvements to Chandler's transportation system.

One great way for people to voice their feelings will be during a Public Meeting to be held Wednesday, June 25, 6-8 p.m., at the Chandler City Council Chambers at 55 N. Arizona Place, Chandler, AZ.

Residents are invited to meet with City officials to discuss any topic related to the City's transportation system, including freeways, congestion, rail, bike lanes and urban trails.

Surveys will also be available at the meeting, asking recipients to identify and prioritize the types of transportation improvements they wish to see in the community. The survey is also available online at [http://www.chandleraz.gov/Content/TransportationCommentForm\\_08.pdf](http://www.chandleraz.gov/Content/TransportationCommentForm_08.pdf)

A draft of the Transportation Plan will be presented to the City Council later this summer, followed by community meetings to be held in October 2008 to provide the public an opportunity to comment on the final draft.

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**Exhibit 4: Vision & Goals Handout**

**Chandler Transportation Plan  
VISION STATEMENT AND GOALS**

*The Chandler Transportation Plan will be based on a Vision Statement and related Goals that reflect transportation issues and priorities in Chandler. Once the vision and goals are finalized, specific objectives and policies for achieving them will be developed to help guide the future of transportation in Chandler.*

**VISION STATEMENT**

*Develop an environmentally-friendly, multimodal transportation system that provides choices to make Chandler known as the "Most Connected City."*

**GOALS**

- Goal 1: Continue the development of an integrated, balanced multi-modal transportation system that facilitates the use of alternative modes of travel throughout the City of Chandler.
- Goal 2: Develop and maintain a system of streets that provides for the safe and efficient movement of people and goods throughout the City.
- Goal 3: Improve public transportation alternatives for Chandler citizens, commuters, and visitors.
- Goal 4: Provide for bicycling as a viable transportation choice by providing on-road and off-road bicycle facilities designed for maximum safety, convenience, and comfort.
- Goal 5: Design and implement pedestrian infrastructure improvements that provide comfortable, safe, and convenient pedestrian access in appropriate areas of Chandler.
- Goal 6: Facilitate the integration and coordination of transportation and land-use planning.
- Goal 7: Adopt policies and implement programs and procedures that will protect the public investment, provide sufficient maintenance, and insure the long-term viability of the City's transportation infrastructure.
- Goal 8: Identify transportation system opportunities to conserve energy, reduce air pollution, protect water quality, and recycle materials when expanding/improving transportation infrastructure.
- Goal 9: Improve public information and encourage citizen input in transportation decision-making.

**COMMENTS?**

What do you think about the Vision Statement and Goals?  
Please provide any comments on the other side of this sheet.

*See other side*



**COMMENTS?**

What do you think about the Vision Statement and Goals?

Comments: \_\_\_\_\_

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If you would like to be added to the information distribution list for the Chandler Transportation Plan project, please provide the following information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

E-mail: \_\_\_\_\_

*See other side*

Please return this form to the table or Fax or Mail it to:

Terry Gruver  
 InfraConsult  
 6900 East Camelback Road, Suite 800  
 Scottsdale, Arizona 85251  
 Fax: (480) 272-7815





Exhibit 5: Survey Sheet

Tell Us About  
TRANSPORTATION IN CHANDLER

The City is updating its transportation plan. Please let us know what you think – priorities, issues, concerns, ideas – about transportation in Chandler.

What do you think about:

Streets and Roads \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Neighborhood Traffic \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Public Transportation \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Bike/Pedestrian Facilities \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

See other side

Please return this form to the Display Table or Fax or Mail it to:

Terry Gruver  
InfraConsult  
6900 East Camelback Road, Suite 800  
Scottsdale, Arizona 85251  
Fax: (480) 272-7815





### Tell Us About TRANSPORTATION IN CHANDLER

If you had \$100 to spend on transportation improvements, how would you divide the money among the following transportation improvements?

- \$ \_\_\_\_\_ Widening major streets/intersections
- \$ \_\_\_\_\_ Expanded bus service
- \$ \_\_\_\_\_ Additional traffic enforcement measures
- \$ \_\_\_\_\_ Improved and/or additional pedestrian walkways
- \$ \_\_\_\_\_ Traffic signal improvements
- \$ \_\_\_\_\_ Reducing traffic volume/speeds through residential neighborhoods
- \$ \_\_\_\_\_ More bicycle lanes
- \$ \_\_\_\_\_ High-capacity transit systems (e.g., light rail, commuter rail, bus rapid transit)

Other comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If you would like to be added to the information distribution list for the Chandler Transportation Plan project, please provide the following information:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
E-mail: \_\_\_\_\_

*See other side*

Please return this form to the Display Table or Fax or Mail it to:

Terry Gruver  
InfraConsult  
6900 East Camelback Road, Suite 800  
Scottsdale, Arizona 85251  
Fax: (480) 272-7815





## C.2.2 Public Meeting Summary #2

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# TRANSPORTATION MASTER PLAN



Chandler + Arizona

SUMMARY REPORT

*for the*

PUBLIC MEETING

December 3, 2009





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## 1. INTRODUCTION

On December 3, 2009, the City of Chandler conducted a second public meeting related to the Chandler Transportation Master Plan Update Study. The public meeting took place from 6 – 8 p.m. in the Chandler City Council Chambers located at 22 S. Delaware.

The purpose of the public meeting was to:

- Introduce the Transportation Commission Vision Statement, Goals and Objectives;
- Present the Roadway, Transit and Bicycle/Pedestrian recommendations
- Obtain input on the recommendations.

## 2. MEETING NOTIFICATION AND ATTENDANCE

The City of Chandler's Communications and Public Affairs Department facilitated notifications as follows:

Postcard notices were e-mailed or otherwise electronically distributed to:

- Persons registered with the City for various recreational classes held at the Community Center  
Stakeholders at the airport;
- 900-plus neighborhood HOA contacts;
- Over 1000 people on City list serves ;
- A list of stakeholders from various public works projects;
- Members of the "Friends of the Library;" and
- Stakeholders identified by the Planning Department, including the Build Out Committee and General Plan Oversight Committee.

Postcard notices were mailed to:

- 240 people on a stakeholder list associated with downtown projects such as the South Arizona Avenue infrastructure projects and new City Hall, plus the Downtown Chandler Community Partnership and Chamber of Commerce;
- 215 people serving on various Boards and Commissions;
- 228 people who've completed the City Services Academies;
- 36 residents who applied to take Martin Sepulveda's place on Council during his Iraq tour;
- 66 people who attended prior Riggs Road widening public meetings;
- 200 people from the Geronimo Street Extension project;
- 32 people from the Germann Road (Dobson-Alma School) public meetings;
- 40 people associated with the Dobson/Warner intersection widening project;
- 62 people identified as stakeholders in the Alma School/Ray intersection project;



- 32 people from the Western Canal Trail project;
- 158 people on the South Tempe Transit Corridor Study, including the following businesses:
  - Bashas
  - Verizon Wireless
  - Avnet Logistics
  - Intel
  - Chandler Fashion Center
  - Westcor
  - Statesman Group
  - ASU Research Park
- 47 people from the Dobson/Chandler Blvd intersection project;
- 37 people from the Alma School/Warner project;
- 38 people from the Dobson/Elliot intersection project;
- 8 people from the Dobson/Chandler Blvd intersection project;
- 11 people from the Ocotillo Post Office Access public meetings;
- 7 people from the Dobson Road widening project;
- 25 people from the Cooper-Pecos Road widening project;
- 16 people from the Price/Dobson Road improvement project;
- 12 people from the project that widened Pecos Road;
- 25 people from the Gilbert Road widening project; and
- 61 stakeholders associated with the Queen Creek Road widening project.

### 3. INFORMATION PROVIDED

A brief PowerPoint presentation was made which described the background and purpose of the study, presented the final Vision Statement, Goals and Objectives developed by the Transportation Commission, and presented Roadway, Transit and Bicycle/Pedestrian recommendations for improving the transportation system in the City of Chandler. A copy of the PowerPoint is included as **Exhibit 3**.

Several boards were displayed that depicted existing and future transportation conditions, as well as recommended transportation improvements. The boards were:

- Transportation Commission Vision Statement, Goals and Objectives
- Next Steps in the Project
- Intersections with High Collision Rates
- 2007 and 2030 Roadway Segment Level of Service
- 2030 Roadway System
- Roadway Capital Improvement Recommendations (2009-2014, 2014-2019, 2019-2024, 2024-2029)
- Near-term, Mid-term, Long-term Transit Improvements
- Recommended Bikeway and Pedestrian Improvements



## 4. INPUT RECEIVED

During the meeting, City of Chandler staff and other members of the study team were available to talk with attendees, listen to comments and concerns, and answer any questions. Through those discussions, comments and questions (staff answers/responses are provided in italics) included the following:

### 4.1 Comments made during Question and Answer

1. Why is data from 2006 used? *In some cases, more current data is not available for use in the study. .*
2. Are there any recommendations for Route 136? *Yes, there is a recommendation to extend route 136 into south Chandler and ending at Basha High School. It is important to note, however, that regional funds that are identified to pay for this route extension may not be available due to the decreasing levels of tax revenues.*
3. Has there been a study to determine how many bike users there are on arterial road bicycle lanes? *No, not specifically. Chandler has focused in the past on improving its arterial road bus lane facilities, however, the bicycle recommendations in this plan focus primarily on improvements for recreational riders who prefer using collector streets. Many of the arterial roads in Chandler without bus lanes have restrictions as to the amount of additional land that is available for widening.*
4. Why is the City building a bridge over Galveston Street when there is a bridge over Frye Road? *A majority of the funds proposed for use to construct the bridge are federal funds specifically identified for projects like this. These federal funds are not available for other types of projects.*
5. Did bus use increase from last year? *Yes. Bus ridership increased 38% in 2008.*
6. Are there any educational programs for promoting bicycling? *The City's current bicycle plan has a detailed section that outlines educational programs for promoting bicycling.*
7. Are there any plans for light rail service south of loop 202 on Price Road? *There are no plans for light rail on Price Avenue. The rail corridors identified in recent studies are Rural Road and Arizona Avenue.*
8. Is the City considering a bus route on Price Road? *There is an existing route that service Price Road and terminates at Ocotillo Road. We feel that a circulator route might be more convenient. This area may be a good opportunity for creating a Transit Benefit Tax that is paid for by the local businesses on the Price Road corridor.*
9. It is important that High Schools promote transit and educate students? *We agree and staff will work on promoting bus use by students. It is important that information is shared with students. We believe that light rail service will also entice people to use public transit.*



## 4.2 Written Comments on Recommended Improvements

Comment forms were distributed and members of the public were encouraged to provide their comments in writing, as well as verbally. A copy of the handout is included at **Exhibit 6**. Comments are provided below:

1. Question recommendations for four lanes in south Chandler (Gilbert and McQueen Roads). What is the City of Gilbert's plan for Val Vista (number of lanes to Riggs Road)? The bicycle and pedestrian plan is very details and ambitious.
2. We support improvements that make the transportation system safer for bicyclists and pedestrians.
3. Every intersection needs easy access to street traffic crossing controls; most cannot be reached. The pedestrian bridge over loop 101 at Galveston Street is a huge expense and is not needed. Frye Road crossing loop 101 and goes right in to the mall.
4. We are very supportive of the plan, in general, and appreciate the multi-modal approach and formal incorporation of bicycle/pedestrian planning into the Transportation Master Plan. Regarding the Transportation Commission recommendations, specifically:
  - Objective 1.4: We would like to see the City of Chandler "Encourage" rather than "Investigate" opportunities for current businesses to construct site improvements that make their facilities friendlier to pedestrians, bicycles and transit. This encouragement could range from showing site improvements on a Chandler or MAG Internet-accessible map of bicycle facilities, to some form of financial subsidy (e.g. partial credit on sales tax) for a portion of actual qualifying expenditures.
  - Objective 1.8: We would prefer to see the word "major" eliminated from this objective, so that consideration of broader employer impact would be considered.
  - Objective 2.3: We would like to see this objective modified to read "major arterials and other roadways/streets where bicycle and pedestrian safety has been, or is projected to be, an issue.
  - Objective 4.7: We are ready to assist in developing a bicycle safety program for the City of Chandler, utilizing proven strategies and elements developed by the League of American Bicyclists.
5. My main concern is public, disabled and aging transportation in the southeast Chandler area. Getting from Cooper and Chandler Heights Roads (for example) just to downtown Chandler, hospital areas, park and ride, Chandler recreation centers and other public buildings, light rail, major malls, etc. is not possible unless you have access to an automobile.



Exhibit 1: Notification Postcard



City Of Chandler  
Public Information Meeting  
Draft Transportation Master Plan



A comprehensive study of Chandler's transportation system has resulted in a draft document containing recommendations for expanding and improving our transportation system. The Plan addresses roadway, public transportation and pedestrian/bicycle facilities. Please attend our upcoming meeting to discuss the Plan's recommendations:

You're invited to a public meeting to discuss transportation in Chandler:

**Thursday December 3 from 6-8 p.m.  
City Council Chambers (2<sup>nd</sup> Floor of Downtown Chandler Library)  
22 South Delaware Street**

An overview of the draft Plan was presented to the Chandler Transportation Commission and can be viewed on the Transportation Page on the City's Web Site, [www.chandleraz.gov](http://www.chandleraz.gov). Comments can be e-mailed, faxed or mailed to: Jess Segovia, Parsons Brinckerhoff, 1501 W. Fountainhead Pkwy, Suite 400, Tempe, AZ 85282. Fax: 966-9234. Email: [segovia@pbworld.com](mailto:segovia@pbworld.com)

More information or accessibility requests, call 480-782-3317 or 480-782-2225



Exhibit 2: Press Release



**Chandler · Arizona**  
*Where Values Make The Difference*

**News Release**  
*For Immediate Release*

**Communications and Public Affairs**

*Telephone*  
(480) 782-2122

*Fax*  
(480) 782-2209

*Website*  
[www.chandleraz.org](http://www.chandleraz.org)

*Mailing Address*  
Mail Stop 604  
PO Box 4008  
Chandler, Arizona 85244-4008

*Location*  
Suite 301  
55 North Arizona Place  
Chandler, Arizona 85225

FOR IMMEDIATE RELEASE

For Information Contact:

Jim Phipps, Public Information Officer  
480-782-2225

Kurt Krause, Project Manager  
480-782-3317

November 16, 2009

**Comment sought on Transportation Master Plan**

CHANDLER – The City has been updating its Transportation Master Plan and is seeking public comment on the Draft Final Report.

A public meeting will be held from 6 to 8 p.m. on Thursday, December 3, in the City Council Chambers located on the second floor of Chandler’s Downtown Library at 22 South Delaware Street.

Chandler’s Transportation Master Plan was last updated in 2001 and guides development and implementation of future transportation infrastructure. The draft Plan is more comprehensive than prior plans, incorporating transit and bicycle/pedestrian plans that previously were updated independently.

The draft Plan was developed following input from a prior public meeting, stakeholder meetings, citizen surveys, planners, consultants and the Chandler Transportation Commission.

Residents are invited to meet with City officials to discuss the Plan’s recommendations for future roadway, bicycle, pedestrian and transit improvements, as well as any topic related to the City’s transportation system. Comment is also being sought on the future conditions projections used to forecast future service levels and infrastructure needs.

Comments received at the meeting will be used to finalize the Plan for approval by the Transportation Commission at their December 17 meeting. The Plan will be submitted to the City Council for approval in January.

The City of Chandler Transportation Master Plan Update DRAFT Final Report can be viewed on the Transportation Page of the City’s Web site, [www.chandleraz.gov](http://www.chandleraz.gov), and copies have been placed in Chandler’s four libraries.

Comments on the Plan can be e-mailed, faxed or mailed to:

Jess Segovia  
Parsons Brinckerhoff  
1501 W. Fountainhead Parkway, Suite 400  
Tempe, Arizona 85282  
Fax: (480) 966-9234  
E-mail: [segovia@pbworld.com](mailto:segovia@pbworld.com)

\* \* \*



**Exhibit 4: Vision & Goals Handout**

**Chandler Transportation Plan  
VISION STATEMENT AND GOALS**

*The Chandler Transportation Plan will be based on a Vision Statement and related Goals that reflect transportation issues and priorities in Chandler. Once the vision and goals are finalized, specific objectives and policies for achieving them will be developed to help guide the future of transportation in Chandler.*

**VISION STATEMENT**

*Develop an environmentally-friendly, multimodal transportation system that provides choices to make Chandler known as the "Most Connected City."*

**GOALS**

- Goal 1: Continue the development of an integrated, balanced multi-modal transportation system that facilitates the use of alternative modes of travel throughout the City of Chandler.
- Goal 2: Develop and maintain a system of streets that provides for the safe and efficient movement of people and goods throughout the City.
- Goal 3: Improve public transportation alternatives for Chandler citizens, commuters, and visitors.
- Goal 4: Provide for bicycling as a viable transportation choice by providing on-road and off-road bicycle facilities designed for maximum safety, convenience, and comfort.
- Goal 5: Design and implement pedestrian infrastructure improvements that provide comfortable, safe, and convenient pedestrian access in appropriate areas of Chandler.
- Goal 6: Facilitate the integration and coordination of transportation and land-use planning.
- Goal 7: Adopt policies and implement programs and procedures that will protect the public investment, provide sufficient maintenance, and insure the long-term viability of the City's transportation infrastructure.
- Goal 8: Identify transportation system opportunities to conserve energy, reduce air pollution, protect water quality, and recycle materials when expanding/improving transportation infrastructure.
- Goal 9: Improve public information and encourage citizen input in transportation decision-making.

**COMMENTS?**

What do you think about the Vision Statement and Goals?  
Please provide any comments on the other side of this sheet.

*See other side*



Exhibit 5: Public Comment Forms

**Tell Us About  
TRANSPORTATION IN CHANDLER**

*The City is updating its transportation plan. Please let us know what you think – priorities, issues, concerns, ideas – about transportation in Chandler.*

What do you think about:

Streets and Roads \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Neighborhood Traffic \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Public Transportation \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Bike/Pedestrian Facilities \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

*See other side*

Please return this form to the Display Table or Fax or Mail it to:

Terry Gruver  
 InfraConsult  
 6900 East Camelback Road, Suite 800  
 Scottsdale, Arizona 85251  
 Fax: (480) 272-7815







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## Exhibit 6: Newspaper Articles

### Chandler to air ambitious transportation plan

by Edythe Jensen - Nov. 20, 2009 02:30 PM  
The Arizona Republic

Chandler is writing the most comprehensive transportation plan in city history and set a public hearing for Dec. 3 to discuss the 20-year blueprint. But paying for the more than \$400 million in recommended improvements will be a challenge in the near future, officials say.

It marks the city's first attempt to link the future of roads, mass transit, and paths for bicycles and pedestrians in one document, spokesman Jim Phipps said. The last transportation plan focused only on streets and was completed in 2001.

A lengthy draft prepared by [consulting](#) Parsons Brinckerhoff recommends where and when the city's arterial streets should be widened, which bus routes should be added or extended and how the city can enhance paths to encourage bicycling and walking from neighborhoods to commercial and [employment](#) centers. Taking into account tight budgets and the high costs of buying developed land to widen roads, the transportation plan anticipates more traffic congestion.

Funding for new [bus service](#) doesn't look promising unless the city comes up with new revenue sources, said Deputy Public Works Director Dan Cook, citing declining county transportation sales-[tax collections](#). "If you look at the plan, there are a lot of new routes, but today there is no way to pay for those improvements," he said. "If we want them as a community, we need to find a way to pay for them."

That could include putting a municipal transportation sales [tax](#) on the ballot again. In 1999, Chandler voters rejected a transportation sales tax after Tempe voters approved a half-cent transit tax in 1995.

Or it could have the city assessing employers for transit service based on the number of workers or square footage - a practice that consultants said is used in Washington and Oregon.

The draft recommends bike lockers at a park-and-ride lot and a downtown bus stop. However, Cook said questions about how to operate the lockers and protect them from vandalism could make them a subject of debate.

A key part of the new bike path plan is a push to move cyclists off major roadways and onto neighborhood streets or canal trails. Directional signs, pedestrian-activated traffic signals, rest areas and a pathway system that takes cyclists to shopping malls and employment centers away from major streets are included.

"We have a pretty good arterial street bicycle system but not many people want their young children riding bicycles on Chandler Boulevard," Cook said. "We are looking at creating a system that will take people from subdivisions to neighborhood markets off arterial streets."

A copy of the plan will be available in libraries and on the city Web site Monday, Phipps said. It faces an advisory vote by the city's Transportation Commission on Dec. 17 and City Council approval in January.

The Dec. 3 public meeting is 6-8 p.m. in the Downtown Library, 22 S. Delaware St. A draft of the plan will be available Monday at [chandlerize.gov](#), click on "transportation."



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**AZCENTRAL.COM  
SOUTHEAST VALLEY MY TURNS**

*The latest column by Southeast Valley community members.*

**Transit plan would make Chandler 'most connected city'**

**Jack Sellers**

In 2007, the city of Chandler commissioned a report called "Next Twenty" to chart a new path for the city as it approached residential build-out and beyond.

The result was a comprehensive plan that set many goals for Chandler and its people. One of those goals was to be "the most connected city." The purpose of this objective is to distinguish Chandler as a city friendly to alternative modes of transportation by focusing on public transit, bicycling, walking and other alternatives to driving.

Some of the steps considered in the "Next Twenty" report included connectivity of open spaces such as parks, major shopping centers, civic spaces and downtown. It also encouraged design of future projects that encourage people to walk outdoors and to connect community-oriented spaces with bikeway systems. Finally, it aims to position Chandler for future light rail extensions and to create an urban shuttle system.

The city has spent two years updating its Transportation Master Plan with many of the "Next Twenty" goals in mind. Now, we are seeking public comment on a draft of the plan's final report.

A public meeting will be held from 6 to 8 p.m. Thursday (Dec. 3) in the [City Council Chambers](#). If you have yet to visit the chambers, they are located on the second floor of Chandler's Downtown Library, 22 S. Delaware St.

The Transportation Master Plan guides development and implementation of future transportation infrastructure throughout Chandler. It was last updated in 2001. As a past chair of the city's Transportation Commission before coming to the [City Council](#), I am excited about this plan because it is much more comprehensive than prior plans. This update incorporates transit, bicycle and pedestrian plans that previously were updated separately.

This plan will go a long way toward our efforts to reduce congestion, conserve resources and simply make Chandler a better place to live and work. It is vital that we come up with a plan that serves our community well over the next several years, if not decades.

This has been a very widespread and inclusive process. The draft plan was developed following input from a prior public meeting, stakeholder meetings, citizen surveys, planners, consultants and the Chandler Transportation Commission.

I encourage you to join me in meeting with [city officials](#)

Thursday to discuss the plan's recommendations. You will see plans for future roadway, bicycle, pedestrian and transit improvements, as well as those topics related to the city's transportation system. We also are looking for your input on projections used to forecast future [service levels](#) and infrastructure needs.

Your comments from the meeting will be used to finalize the plan that will go to the Transportation Commission for approval at its Dec. 17 meeting. The plan will then head to the City Council for approval early next year.

An overview of the draft plan is available on the city's Web site, [www.chandleraz.gov](http://www.chandleraz.gov). If you cannot attend the meeting, review it online and send comments to [opps@chandleraz.gov](mailto:opps@chandleraz.gov).

**Jack Sellers is a Chandler city councilman.**  
Monday, November 30, 2009 at 11:29 AM