

OLD U.S. HIGHWAY 80 AREA PLAN

MARICOPA  
COUNTY



2020

Eye To The Future



ADOPTED MAY, 2007

MARICOPA COUNTY, ARIZONA

## **ACKNOWLEDGMENTS**

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# EXECUTIVE SUMMARY

## EXECUTIVE SUMMARY

### Plan Overview and Purpose

The West Valley has experienced a rapid surge of urban growth in the last few years and projections show this rapid growth continuing into the future. Historically, this region has been based on agricultural land uses and activities. Today, many agricultural activities are being replaced by urban development including the planning area. For example, in 2000 there were only 1,150 people within the planning area. However, based on build-out of the Old U.S. Highway 80 future land use plan, the population could reach 243,000 people.

The *Old U.S. Highway 80 Area Plan* is an entirely new plan which removes portions of the *State Route 85 Area Plan* and the *Tonopah/Arlington Area Plan*. There is general consensus by the Old U.S. Highway 80 community that portions of the State Route 85 Area Plan and the Tonopah/Arlington Area Plan do not accurately reflect community needs for future growth and development. Therefore, the new Old U.S. Highway 80 Area Plan is intended to reflect the community's wide variety of opinions.

The Old U.S. Highway 80 Area Plan provides recommendations for various planning related issues. The plan provides urban densities in certain areas while providing a rural alternative for those who wish to enjoy the rural lifestyle. The plan promotes the compatibility of residential, commercial, industrial, and employment land uses. The plan seeks to minimize impacts to the natural environment, reduce demand on groundwater supplies, and encourage the protection of vital open space areas and wildlife habitat. Most importantly, the Old U.S. Highway 80 Area Plan accounts for stakeholder and resident comments, concerns, and recommendations.

### Public Participation

Old U.S. Highway 80 residents, private and public stakeholders, and community work group members involved in the planning process were very helpful in identifying a variety of growth-related issues and concerns. A list of the local issues and concerns affecting the outcome of the future land use plan are included below. These issues are taken from **Table 23: Issue Identification**.

- Encourage higher residential densities near Buckeye and Gila Bend
- Rural type uses/employment in western portion of the planning area
- Promote employment/industrial land uses near Palo Verde NGS and along the railroad tracks
- Industrial should encourage a diversity of job opportunities
- Promote compatible land uses along designated emergency evacuation routes
- Encourage land uses compatible with existing Palo Verde and Arlington Elementary Schools



- Provide rural alternative to DMP/HOA living (west of Hassayampa River and north of Gillespie Dam)
- Promote power plant water rights property as Open Space and/or delineating floodplains and/or floodways as Potential Open Space
- Commercial uses that tie into Old U.S. Highway 80 and State Route 85
- Preserve Hickman's by keeping areas around this farm facility compatible
- Other comments: protect dark skies and no obstructive signage

## Conclusion

It is important to note that the Old U.S. Highway 80 Area Plan is not a document that represents final buildout as many municipal general plans typically do. Rather, it prepares for and accommodates growth over the next ten to fifteen years, but will be reexamined and updated as necessary to reflect current conditions and changes. While not a complete solution, the Old U.S. Highway 80 Area Plan helps address the effects of growth and development by enhancing cooperation between government agencies, citizens, and other affected interests, and by considering regional implications.

## Area Plan Elements

This Area Plan contains a series of goals, objectives, and policies used to define development standards, guide public investment, and guide public and private decision making. A complete list of policies is included within the plan.

## Land Use

### Goal L1:

Promote efficient land development that is compatible with adjacent land uses, is well integrated with the transportation system, and is sensitive to the natural environment.

**Objective L1.1:** Encourage orderly, efficient, and functional development patterns.

**Objective L1.2:** Promote high quality residential development that is sensitive to the natural environment and compatible with adjacent land uses.

**Objective L1.3:** Promote high quality retail commercial, employment center, and mixed uses that are properly located proximate to populated areas.

**Objective L1.4:** Preserve the scenic and where appropriate, the rural character of the Old U.S. Highway 80 planning area.



# EXECUTIVE SUMMARY

## Transportation

### Goal T1:

Provide an efficient, cost-effective, integrated, accessible, environmentally sensitive, and safe multi-modal system that addresses existing and future roadway networks, and promotes transit, bikeways, and pedestrian travel.

**Objective T1.1:** Establish a safe, convenient, and efficient system for existing and future roadways while considering the need for equestrian and multi-use trails access in the Old U.S. Highway 80 planning area.

## Environment/Environmental Effects

### Goal E1:

Promote development that mitigates adverse environmental impacts on the natural and cultural environment, preserves highly valued wildlife habitat, minimizes flooding and drainage problems, and protects historical and archaeological resources.

**Objective E1.1:** Encourage development that is compatible with natural environmental features.

**Objective E1.2:** Preserve significant natural and cultural resources.

**Objective E1.3:** Improve air quality, water quality, and reduce noise impacts.

**Objective E1.4:** Preserve significant habitat areas for wildlife and native plant species.

## Economic Development

### Goal ED1:

Promote a growing, balanced, efficient, and diversified economy, consistent with available resources, that enhances quality employment opportunities, improves quality of life, and is sensitive to the natural and cultural environment.

**Objective ED1.1:** Encourage quality employment opportunities by supporting efforts that encourage business formation and expansion.

**Objective ED1.2:** Encourage a wide range of commercial activities in commercial designated areas.

## Growth Areas

### Goal G.1:

Promote orderly, timely, and fiscally responsible growth in Maricopa County.





**Objective G.1.1:** Encourage timely, orderly, and fiscally responsible growth within the planning area and within mixed use Development Master Plans.

**Objective G.1.2:** Ensure that future growth is coordinated in an efficient manner with stakeholder input.

## Open Space

### Goal O1:

Maintain and, where necessary, encourage expanding the open space system for Maricopa County to address public access, connectivity, education, preservation, buffering, quantity, quality, and diversity for regionally significant open spaces.

**Objective O1.1:** Promote physical and visual public access to natural open space resources.

**Objective O1.2:** Establish regional natural open space connectivity and linkages for both recreation and wildlife purposes.

**Objective O1.3:** Protect and enhance environmentally sensitive areas, including existing natural washes; steep slopes; historical, cultural, and archaeological resources; view corridors; sensitive desert; and significant wildlife habitat and ecosystems.

**Objective O1.4:** Encourage appropriate open space between potentially incompatible land uses.

**Objective O1.5:** Enhance the quantity, quality, and diversity of open space and recreational opportunities where public access is provided.

**Objective O1.6:** Promote the economic, environmental, and quality of life benefits of natural open space.

## Water Resources

### Goal W1:

Promote development that makes conservative use of renewable water supplies such as effluent, surface water, and Central Arizona Project water when feasible, as well as non-renewable sources like groundwater.

**Objective W1.1:** Encourage protection and enhancement of renewable water and groundwater supplies within the framework of state and federal laws, regulations, and guidelines for existing and future needs.



## EXECUTIVE SUMMARY

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### **Goal W2:**

Reduce the impacts of development on water quality.

**Objective W2.1:** Encourage voluntary actions and support federal, state, and local regulations and guidelines that protect and preserve current and future groundwater quality in the planning area.

### **Cost of Development**

#### **Goal C1:**

Ensure that new development pays its fair and proportional share of the cost of additional public facility and service needs generated by new development.

**Objective C1.1:** Develop a method to determine the need for, and assess the costs of, new facilities and services required to serve new development in order to maintain service levels.

**Objective C1.2:** Adopt and implement level of service standards for new development to help promote consistency and certainty in the cost sharing process.

### **Agenda for Action**

To help ensure effectiveness, stakeholders helped identify various long and short-term actions that will assist in plan implementation. Many of these actions require the continued participation of area residents, as well as public and private organizations. A complete list of actions is included within the plan.



## INTRODUCTION

Adopted in 1997, *Eye to the Future 2020*, the Maricopa County Comprehensive Plan recognizes the importance of County Area Plans to provide direction on land use decisions and to be consistent with the Comprehensive Plan. The *Old U.S. Highway 80 Area Plan* is an entirely new plan which removes portions of the *State Route 85 Area Plan* and the *Tonopah/Arlington Area Plan*. There is general consensus by the Old U.S. Highway 80 community that portions of the State Route 85 Area Plan and the Tonopah/Arlington Area Plan do not accurately reflect community needs for future growth and development. While the State Route 85 Area Plan and Tonopah/Arlington Area Plan covered 360 square miles and 403 square miles respectively, the new Old U.S. Highway 80 Area Plan encompassed 215 square miles in the western portion of Maricopa County. Excluding the communities of Buckeye and Gila Bend, the plan focuses on unincorporated areas of Maricopa County near and around the communities of Arlington, Palo Verde, Hassayampa, and Cotton Center. This plan includes several sections, including an Executive Summary, Introduction, Inventory and Analysis, Issue Identification, Plan Elements, Agenda for Action, and an Amendments section which identifies specific measures to implement the plan.

### Plan Organization

This document presents the results of the planning process for the Old U.S. Highway 80 planning area. It is organized to follow the Maricopa County Comprehensive Plan and other similar area plans, and includes the following eight sections:

*Executive Summary:* Summarizes the goals and objectives which are implemented through specific policies contained in the area plan.

*Introduction:* Describes how the plan is organized, how it should be used, a brief history of the planning area, and an overview of the area plan process in Maricopa County.

*Inventory and Analysis:* Analyzes existing conditions in the Old U.S. Highway 80 planning area. Plan policies are based in part on information contained in this section.

*Issue Identification:* Summarizes important planning-related issues raised by planning area residents. Key issues were condensed from a survey that was distributed at a public workshop, through the Maricopa County website, and several community workgroup meetings.

*Plan Elements:* Defines specific goals, objectives, and policies that guide growth and development in the Old U.S. Highway 80 planning area.



# INTRODUCTION

*Agenda for Action:* Outlines how the Old U.S. Highway 80 Area Plan will be implemented through specific strategies and programs.

*Amendments:* Specifies the process for changing this plan. By design, plans are flexible documents that can adapt to changing conditions. The amendment process highlights this and can facilitate the plan's evolution.

*Appendix:* Contains a glossary of terms, a list of acronyms, and other supporting documents.

This area plan identifies goals, objectives, and policies for several important topics. These topics include land use, transportation, environment/environmental effects, economic development, growth areas, open space, water resources, and cost of development.

## Planning Process

The Old U.S. Highway 80 Area Plan reflects citizen issues; projected population increases; state statutory requirements; and land use, boundary, and annexation changes. Maricopa County prepares this and other area plans using the most recent Maricopa Association of Governments (MAG) population projections, Arizona Department of Economic Security (DES) projections, and U.S. Census data. Moreover, the boundaries of each area plan are evaluated to determine if changes are necessary. As each plan is completed, it is considered at public hearings before the Planning and Zoning Commission and Board of Supervisors.

## How to Use the Plan

Each plan element contains a series of goals, objectives, and policies that define development standards, help formulate public policy, and guide public investment. In this way, this plan serves as a decision making guide for the Planning and Zoning Commission and Board of Supervisors concerning future growth and development. In addition to assisting public policy makers, it also helps private individuals and businesses make informed resource and investment decisions.

## History of the Old U.S. Highway 80 Region

The Old U.S. 80 region has a long history of settlement and character changes dating back thousands of years. As early as about 300 B.C., the Hohokam, ancestors of present day Tohono O'odham Indians (formally known as Papago Indians), migrated from present day Mexico into southern Arizona and settled into villages along the Gila and Salt Rivers. The Hohokam constructed a complex system of canals to produce crops and thrived in the river regions until the late 13th century. It is unknown why but possibly due to drought, the Hohokam were forced to leave.



Western society recorded Arizona as early as 1539 when Marcos de Niza explored the region. Although explorers navigated Arizona, it was not claimed as a territory until 1821 when Mexico asserted its independence from Spain. In 1848, the United States took possession of Arizona north of the Gila River following the Mexican American War. In 1853, the United States negotiated the Gadsden Purchase for \$10 million, bringing the country's southern edge to the current border. With Arizona now a territory, the United States' southern border was contiguous and allowed for increased westward expansion.

The Railroad Act of 1862 authorized U.S. Government support of the transcontinental railroad, cutting a path through Arizona and connecting eastward settlements to the Pacific Coast. The Southern Pacific Railroad connected California to Tucson in 1880, creating another route of transportation and discovery for unsettled Arizona. Eventually, the Union Pacific Railroad would complete a rail link between Phoenix and Los Angeles in 1926<sup>1</sup>, through the northern portion of the Old U.S. Highway 80 area. The railroads helped pioneer more settlements in Arizona, creating corridors and a base for agricultural settlements.

Before railroads in Maricopa County, farming began in the Buckeye Valley in the 1860's. The Desert Land Act of 1877 greatly increased farming by permitting settlers to obtain title to 640 acres of land if they agreed to irrigate the land within three years. As citizens began settling the region, a transportation system was needed to access individual parcels to encourage more settlements on previously inaccessible lands. During the early 1900's, a new cross country trail, known as the Ocean to Ocean Highway<sup>2</sup>, meandered from Gila Bend northward along the Gila River's eastern bank into the Buckeye Valley. Its trail originated in San Diego and eventually led travelers to the eastern shores of Georgia.

In 1927, the American Association of State Highway Officials (AASHO) and the Department of Agriculture's Bureau of Public Records devised a system of U.S. highways, creating connections between major destinations.<sup>3</sup> AASHO planned to create a roadway connecting San Diego to the Atlantic Coast, which would be known as U.S. 80. This highway would follow to Ocean to Ocean Highway's alignment, carving a trail through the rugged and unsettled terrain. When the AASHO proposed to build U.S. 80 to link Phoenix to San Diego, they faced natural obstacles, mainly the untamed Gila River. In spite of technological advances and Roosevelt Dam's completion in 1911, crossing the Gila River remained a problem.

In 1921, Vic Housholder engineered and completed Gillespie Dam, which would stand until a devastating flood in 1993. Construction of the dam improved transportation in the area as well as facilitated the future El Paso Natural gas line in the 1940's. With Gillespie Dam taming the aggressive current of the Gila River, construction for a transportation bridge would follow in 1925 when the Gillespie

<sup>1</sup> [www.southwestrail.org](http://www.southwestrail.org)

<sup>2</sup> [www.azdot.gov](http://www.azdot.gov)

<sup>3</sup> [www.us-highways.com](http://www.us-highways.com)



## INTRODUCTION

Dam Highway Bridge opened, later becoming registered with the National Register of Historic Places in 1981. With a bridge now crossing the Gila River and U.S. 80 a nationally recognized roadway, the character of this region made yet another evolution. Old U.S. 80's winding path follows four significant landforms and features – the Gila River's east bank, Gillespie Dam, a defining chain of mountains, and the newly built Union Pacific Railroad with agricultural lands scattered throughout the region. In the mid 1950's, U.S. 80 was completely paved, yet motorists encountered new issues.

Following World War II, the roadways became congested with traffic because roads constructed before the 1930's, including U.S. 80, were inadequate for faster and wider cars built in the 1950's. Envisioning Germany's Autobahn as the highways Americans wanted, President Eisenhower signed a bill creating the National System of Interstate and Defense Highways in 1956.<sup>4</sup> The system was planned for U.S. Highways and Interstates to coexist. However, several U.S. Highways, including U.S. 80, were decommissioned with the emergence of Interstate Highways thereby closing a chapter in history. By 1972, Interstate-10 spanned to Tonopah, opening a new option for people to travel from Los Angeles to Phoenix. I-10 ended at Litchfield Park Rd. in the west Phoenix region in 1978<sup>5</sup>, the same year U.S. 80 was decommissioned throughout most of Arizona.

Further south, Interstate 8 progressed from the Colorado River eastward along U.S. 80's alignment to Gila Bend. By the mid-1970's, State Route 85 created a faster and more direct highway for motorists to travel, having bridged across the mighty Gila River.<sup>6</sup> With more efficient choices of roads to travel, U.S. 80 was no longer considered a viable option for many motorists. Ultimately, U.S. 80, between Gila Bend and the new State Route 85, was renamed *Old U.S. 80*, bringing a close to yet another chapter in this roadway's history. Since 1978, Old U.S. 80 has remained a local road for the agricultural regions.

Today, the Old U.S. 80 area is now considered part of the greater Phoenix metropolitan area with development filtering into this region, thereby creating a new evolution in the roadway's historical legacy. Nearby, the Town of Buckeye has seen a rapid surge of growth since the turn of the 21st century. Its General Plan includes nearly 600 square miles of land and expected growth to reach 100,000 people by 2010 and 240,000 anticipated homes are currently being planned inside the boundaries of the General Plan. In its General Plan, Buckeye included portions of the Old U.S. Highway 80 Area Plan, generally from the Hassayampa and Gila Rivers southward to Woods Rd. Currently, most of the Old U.S. Highway 80 planning area remains unincorporated.

For thousands of years, this region's land use and function has been agriculture based. However, urban growth will likely replace the area's agricultural, rural, and

<sup>4</sup> [www.us-highways.com](http://www.us-highways.com)

<sup>5</sup> [www.rockymountainroads.com](http://www.rockymountainroads.com)

<sup>6</sup> [www.arizonaroads.com](http://www.arizonaroads.com)



natural lands. Development and growth offers benefits such as urban services, increased employment opportunities, and greater choices in housing for residents. However, new issues such as longer commutes leading to higher pollution levels, increased traffic volumes, and costs of servicing scattered development are some of the related problems. The Old U.S. Highway 80 Area Plan helps address these issues by enhancing cooperation between government agencies, citizens and other affected interests, and by considering regional implications.

### **Old U.S. Highway 80 Area Plan (2007)**

Maricopa County adopted its first comprehensive plan in October 1997. Titled *Eye to the Future 2020*, the comprehensive plan promotes healthy communities by encouraging growth in suitable areas, development of an efficient transportation system, maintaining a healthy environment, and creating a diverse economy. To effectively implement the Comprehensive Plan, county area plans will continuously be developed and updated so they are consistent with *Eye to the Future 2020*.

Due to public interest and the need to address issues within the communities of Palo Verde, Arlington, Hassayampa, and Cotton Center, Maricopa County initiated a new area plan to remove portions of the State Route 85 Area Plan and the Tonopah/Arlington Area Plan, thus creating the Old U.S. Highway 80 Area Plan. After initial review and discussion with community members, it was decided to focus the new area plan on approximately 215 square miles of unincorporated Maricopa County.

### **Public Participation**

Community participation and involvement was emphasized during the preparation of the Old U.S. Highway 80 Area Plan. In late 2005 in coordination with the Old U.S. 80 community, Maricopa County initiated this new area plan. Residents believed that the existing Tonopah/Arlington and State Route 85 Area Plans did not accurately reflect community needs in regard to future urban development in their area. Consequently, in September 2005 invitation letters were sent to approximately 500 residents and property owners, inviting them to discuss the planning process at a public meeting. Also invited to participate were private and public stakeholders including the Town of Buckeye, Town of Gila Bend, Arizona State Land Department, Bureau of Land Management, Maricopa County Department of Transportation, Maricopa County Farm Bureau, and other potentially interested agencies.

#### *Public Meetings*

Public meetings were critical to identify planning issues and concerns, and allowed residents and stakeholders to provide recommendations, comments, and suggestions about growth and development related issues. The Maricopa County Planning and Development Department held the first public workshop at the Palo Verde Elementary School in October 2005. Once the draft area plan was completed, a second public workshop was held in October 2006 at the Palo Verde Elementary





## INTRODUCTION

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School. Meetings provided an opportunity for staff to present project information and allowed citizens to ask questions and make comments and recommendations on the draft plan. A citizen survey was also provided at both public meetings to allow additional opportunities for input.

### *Community Work Group*

To gain more detailed information related to the planning area, Maricopa County solicited input from a community work group made up of 22 people who represented various interests within the planning area. Participants included residents, school representatives, developers, realtors, and other individuals who expressed interest in attending work group meetings and agreed to help represent the broader community. Representatives from several federal, state, and county agencies were also invited to participate on the community work group. The community work group met periodically to help identify issues, provide recommendations regarding planning-related policies, and review draft documents. The community work group was instrumental in capturing a common vision for the Old U.S. Highway 80 Area Plan and provided important comments and suggestions.

### *Other Input*

Input was also obtained through telephone calls, surveys, and email messages from citizens, potentially affected interests, and public agencies. The issues and concerns identified during the public participation process are presented in the Issue Identification section of this area plan.





## INVENTORY AND ANALYSIS

### Demographics Characteristics and Projections

This portion of the Old U.S. Highway 80 Area Plan analyzes existing demographic and land use conditions.

#### *Planning Area Growth and Change*

The boundary of the Old U.S. Highway 80 planning area was finalized during the first public meeting held on October 25, 2005, and includes areas formally part of the State Route 85 and the Tonopah/Arlington Area Plans. The Old U.S. Highway 80 Area Plan includes unincorporated areas of Maricopa County between the Woolsey Peak Wilderness, Signal Mountain Wilderness, Buckeye Hills Recreation Area, and the Sonoran Desert National Monument. The planning area encompasses approximately 215 square miles of unincorporated land.

#### *Historical Population Analysis*

This section highlights historic and current population trends. In 1990, the Old U.S. Highway 80 planning area's population was approximately 800 people. This figure is based on 1990 census block boundaries that roughly match that of the planning area boundary. By 2000, total population had increased to approximately 1,150 persons which equates to a 43.75% increase. Similarly, Maricopa County's growth rate from 1990 to 2000 was 45%.

Using building permit records, Maricopa County researched how many residential building permits were issued in the planning area since 1993, then added to these records using County Assessor data and aerial photographs to determine the total number of housing units. At the end of 2005, it was estimated that approximately 510 homes existed within the planning area. At an average of 2.67 persons per household, the planning area is estimated to have a population of approximately 1,360. This figure could be lower depending on how many home are unoccupied.

Based on current building permit data in the last five years the planning area has added approximately 200 new homes. This means the planning area has added an average of 40 new homes per year. At an average of 2.67 persons, the planning area will at least add 107 new people each year. However, it is important to note that this is a very modest population projection because of future development in the region.

#### *Historical Housing Unit Analysis*

In 1990, there was an estimated 368 housing units in the Old U.S. Highway 80 planning area (based on 1990 Census population of 800 divided by the average person per household which was 2.23 for Maricopa County). By 2000, the number of housing units increased 17% to an estimated 431 units (based on 2000 Census population of 1,150 divided by the average person per household of 2.67 for



## INVENTORY AND ANALYSIS

Maricopa County). Most of this housing development occurred in the Phoenix Valley West subdivision and surrounding areas.

### *Future Population Projections and Housing Trends*

The Old U.S. Highway 80 Area Plan represents an important and timely opportunity to plan for continued growth in this region. Understanding the characteristics and pace of population and housing growth can lead to more prudent planning for future infrastructure, land uses, and natural resources. Population projections vary widely depending on the method of projection and assumptions about future conditions.

Using current trend like building permit activity the planning area would add approximately 40 homes per year. However, trends in future development indicate that growth will far exceed this number. Also, existing Maricopa Association of Governments (MAG) projections do not correspond to the Old U.S. Highway 80 planning area boundary. Therefore, another population projection is based on build-out of the **Figure 15 - Future Land Use Plan**.

Several assumptions were used in creating the future land use plan population projection. First, the projections only include privately owned land excluding current public ownership and management because no public land is currently for sale, trade, or disposal. Second, the projections assume that development can occur within floodplains but not within delineated floodways. The reason for this assumption is because development within a floodway is more restricted than within a floodplain. Third, these build-out calculations subtract an average of 15% of the land area for easements typically required when creating new lots. Finally, the projection is based on build-out of the future land use plan utilizing the average density of residential land use categories. **Table 1: Old U.S. Highway 80 Planning Area – Future Land Uses** summarizes future land uses by acreage and percentage of the entire planning area.

Residential land use categories within the planning area include Rural Residential (23,500 acres), Large Lot Residential (4,200 acres), Small Lot Residential (10,300 acres), and Mixed Use (8,170 acres). Rural Residential is expected to build-out at an average density of 1 d.u./acre. Large Lot Residential is expected to build-out at an average density of 1.5 d.u./acre. Small Lot Residential is expected to build-out at an average density of 3.5 d.u./acre. Finally, Mixed Use generally consists of higher density residential and is expected to build-out at an average density of 10 d.u./acre, but only half of the land will likely be used for residential purposes. Based on these assumptions, at build-out the planning area could reach approximately 91,200 housing unit, which at 2.67 persons per household equates to a population of approximately 243,000 people.

The Ladera development master plan is not included in the population and housing projections. If approved, Ladera would include 6,200 units on approximately 1,900



**Table 1: Old U.S. Highway 80 Planning Area - Future Land Uses**

Future Land Use	Acres	Percent of Planning Area
Rural Residential (0-1 du/acre)	23,500	17%
Large Lot Residential (1-2 du/acre)	4,200	3%
Small Lot Residential (2-5 du/acre)	10,300	7.5%
Mixed Use	8,170	6%
Neighborhood Retail Commercial	120	0.1%
Community Retail Commercial	160	0.1%
Business Park	550	0.4%
Industrial	5,500	3.9%
Proposed Open Space	16,500	12%
Bureau of Land Management, State Trust Land, Flood Control District properties, and Wildlife Areas	69,000	50%
<b>Total</b>	<b>138,000 (215 sq. mi.)</b>	<b>100%</b>

acres which equates to an approximate population of 16,500. Future development similar to this will dramatically change the population projections.

**Table 2: Historic and Projected Population** shows historic and projected population for the planning area while **Table 3: Residential Housing Units** provides historic and projected housing units for the planning area. While historic estimates are fairly accurate, future population projections can vary widely depending on source information and assumptions. **Table 4: Persons per Household** provides the number of persons per household for Maricopa County.

*Personal Income and Age Characteristics: Old U.S. Highway 80 Planning Area*

MAG provides estimates of median household income for Arizona and Maricopa County. Median household income for the planning area was compiled by Zip Code Tabulation Area (ZCTA) taken from 2000 Census data for the 85326 zip code. It's important to note that ZCTA data generalizes the Old U.S. Highway 80 planning area although it includes population within the Town of Buckeye. **Table 5: Median Household Income** shows median household income levels of \$37,850 within the planning area are lower than Arizona (\$46,700) and Maricopa County (\$51,800) overall. However, future growth and development may change these statistics.

Population distribution by age was compiled from 2000 U.S. Census data that roughly matches the planning area boundary and the median age calculation was compiled from ZCTA data for the 85326 zip code. **Table 6: Population Distribution by Age in Percentages** indicates that nearly 29% of planning area residents are under the age of 15, compared to 23% for Maricopa County. Also, since only 19% of Old U.S. Highway 80 residents are 55 years and older, it is assumed that a large segment of the population is young adults with children.



# INVENTORY AND ANALYSIS

**Table 2: Historic and Projected Population**

Area	Census 1990	Census 2000	Projection at Build-out
Old U.S. Highway 80 Planning Area	820	1,150	243,000 <sup>1</sup>
Maricopa County	2,122,101	3,072,147	N/A

<sup>1</sup> Maricopa County Planning and Development projection based on build-out of future land use plan using average densities of residential land use categories

**Table 3: Residential Housing Units**

Area	Census 1990	Census 2000	Projection at Build-out
Old U.S. Highway 80 Planning Area	368 <sup>1</sup>	431 <sup>1</sup>	91,200 <sup>2</sup>
Maricopa County	952,041	1,260,497	N/A

<sup>1</sup> Estimate derived from 1990 and 2000 U.S. Census figures and average persons per household

<sup>2</sup> Maricopa County Planning and Development projection based on build-out of future land use plan using average densities of residential land use categories divided by 2.67 persons per household for Maricopa County

**Table 4: Persons per Household**

Area	Census 1990	Census 2000	Projection at Build-out
Maricopa County	2.23	2.67	2.67

**Table 5: Median Household Income**

Area	Median Household Income
Old U.S. Highway 80 Planning Area	\$37,850 <sup>1</sup>
Maricopa County	\$51,800 <sup>2</sup>
Arizona	\$46,700 <sup>2</sup>

<sup>1</sup> 2000 U.S. Census data (Zip Code Tabulation Area for zip code 85326)

<sup>2</sup> Maricopa Association of Governments compilations based on Census 2000 data

Note: The median divides the income distribution into two equal parts: one-half of the cases falling below the median income and one-half above the median income.

**Table 6: Population Distribution by Age in Percentages**

Area	<5	5-14	15-24	24-34	35-44	45-54	55-64	65+	Median Age
Old U.S. Highway 80 Planning Area <sup>1</sup>	9.1%	19.8%	13.2%	11.7%	15.1%	12.3%	9.7%	9.2%	33.1 <sup>2</sup>
Maricopa County <sup>1</sup>	7.9%	15%	14.3%	15.9%	15.5%	11.9%	7.8%	11.7%	33

<sup>1</sup> 2000 U.S. Census data

<sup>2</sup> 2000 U.S. Census data (Zip Code Tabulation Area for zip code 85326)

Furthermore, the median age of 33.1 years of age for the planning area also indicates a youthful population since the average age of the principal farm operator in Arizona was 55 years old in 2002. The median age for the planning area is comparable to the County's median age of 33.



## LAND USE

### Existing Land Use

The 215 square mile planning area is asymmetric and generally bounded on the north by Baseline Rd.; the 459th Ave. alignment, Agua Caliente Rd., Enterprise Rd., and the State Route 85 Corridor Area Plan on the west; Fornes Rd. on the south; and portions of State Route 85, the Gila River, and ½ mile east of Old U.S. Highway 80 on the east (**Figure 1-Planning Area**). The uniqueness of the planning area is due to the fact that the Old U.S. Highway 80 Area Plan was once part of the original Tonopah/Arlington Area Plan and State Route 85 Area Plan. Once approved, the Old U.S. Highway 80 Area Plan will be the future land use plan for area.

Adopted in 2000, the Tonopah/Arlington Area Plan was a 403 square mile area bounded on the east by Saddle Mountain, west of the Hassayampa River, south of the Central Arizona Project Canal and north of Centennial Wash. Adopted in 2003, the State Route 85 Area Plan was a 360 square mile area bounded on the north by Interstate-10, on the south by Interstate-8, and the eastern and western boundaries are five miles on each side of State Route 85 (**Figure 2-Original Planning Areas**). To date, most of the planning area of both plans remains within unincorporated Maricopa County.

The following land use topics will be addressed in this section:

- Development Patterns
- Zoning Regulations
- Public Land Ownership
- Public Facilities, Services, and Utilities
- Special Planning Concerns














#### *Development Patterns*

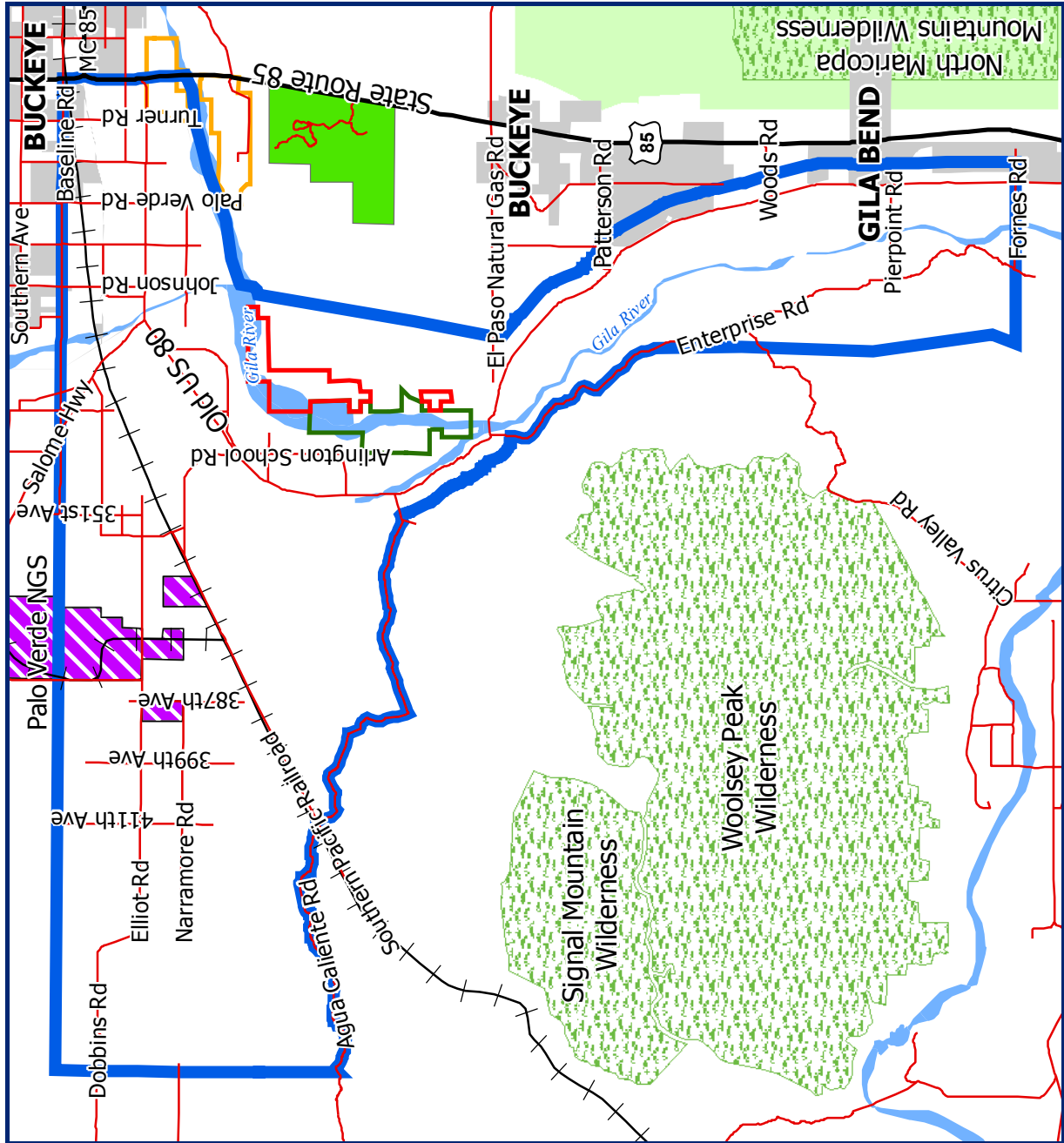
Included in the planning area are the communities of Arlington, Hassayampa, Palo Verde, and Cotton Center. Land use patterns vary from 40-acre ranchettes to homes built on one acre lots to isolated industrial/employment uses. **Figure 3-Existing Land Use** illustrates the variety of land use patterns that exist within this region.

The rural land use shows areas which have been historically used for farming and livestock grazing. Farming was the only activity in this region and is still a major land use. Due to the area's isolation and limited development, large tracts of land have been used for livestock grazing. Consequently, nearly all State Trust and BLM land within the planning area is permitted for livestock grazing. Agribusiness is considered to be region's main source of economic activity. For a detailed look into the area's economic development, see the Economic Development element.

# Planning Area

Figure 1

- Legend**
-  Arterial Roadway
  -  Highway
  -  Railroad
  -  Old U.S. Highway 80 Area Plan
  -  River
  -  Power Plants
  -  Arlington Wildlife Area
  -  Powers Butte Wildlife Area
  -  Robbins Butte Wildlife Area
  -  Buckeye Hills Recreation Area
  -  Wilderness Areas (BLM)
  -  Sonoran Desert Nat'l Monument
  -  Incorporated



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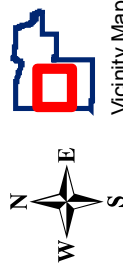


# Original Planning Areas

Figure 2

## Legend

-  Arterial Roadway
-  Highway
-  Interstate
-  Railroad
-  Old U.S. Highway 80 Area Plan
-  State Route 85 Area Plan
-  Tonopah / Arlington Area Plan
-  Palo Verde NGS
-  Wilderness Areas (BLM)
-  County Park
-  River
-  Sonoran Desert Nat'l Monument
-  Tohono O'odham Nation (Gila Bend)
-  Incorporated



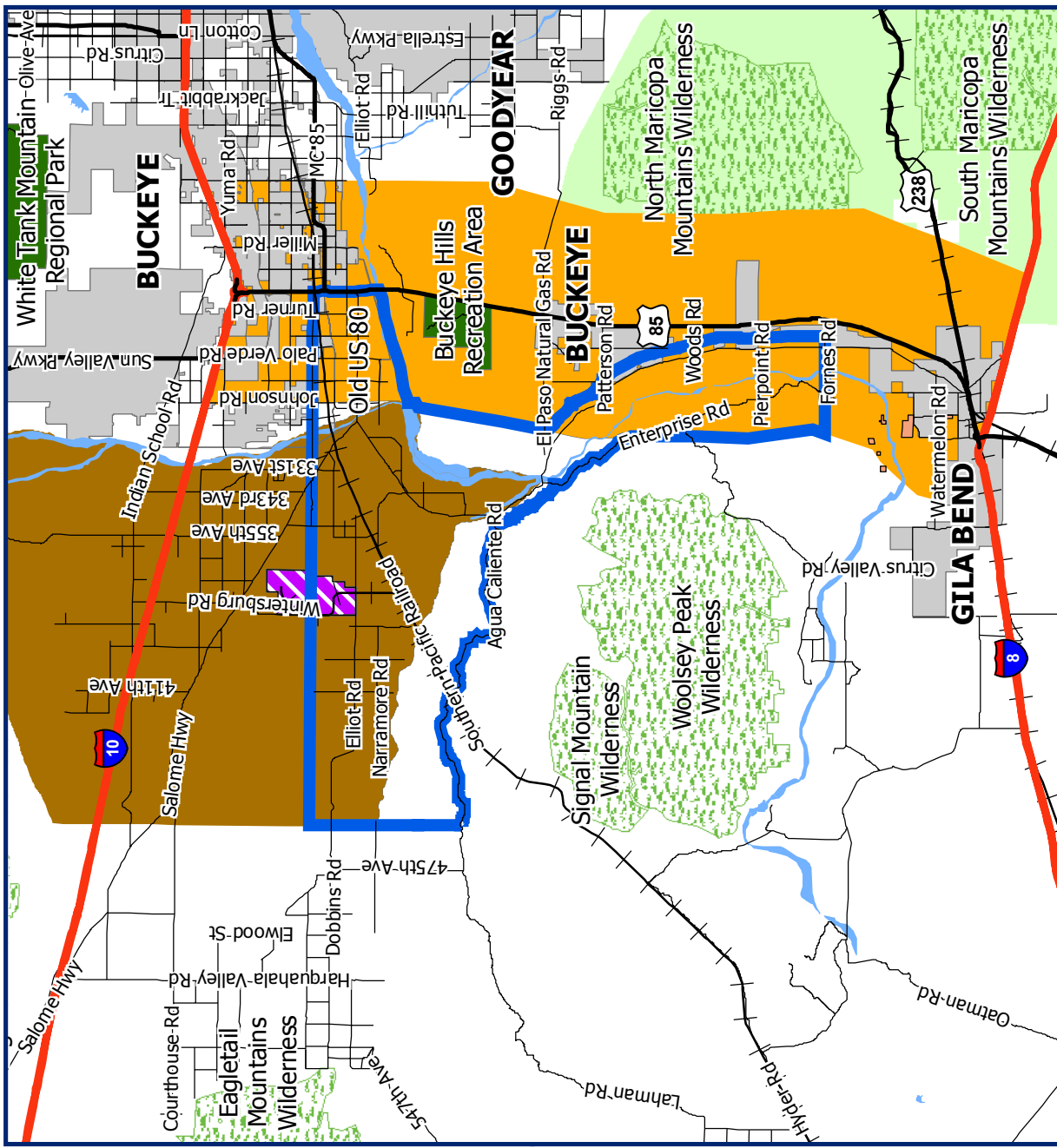
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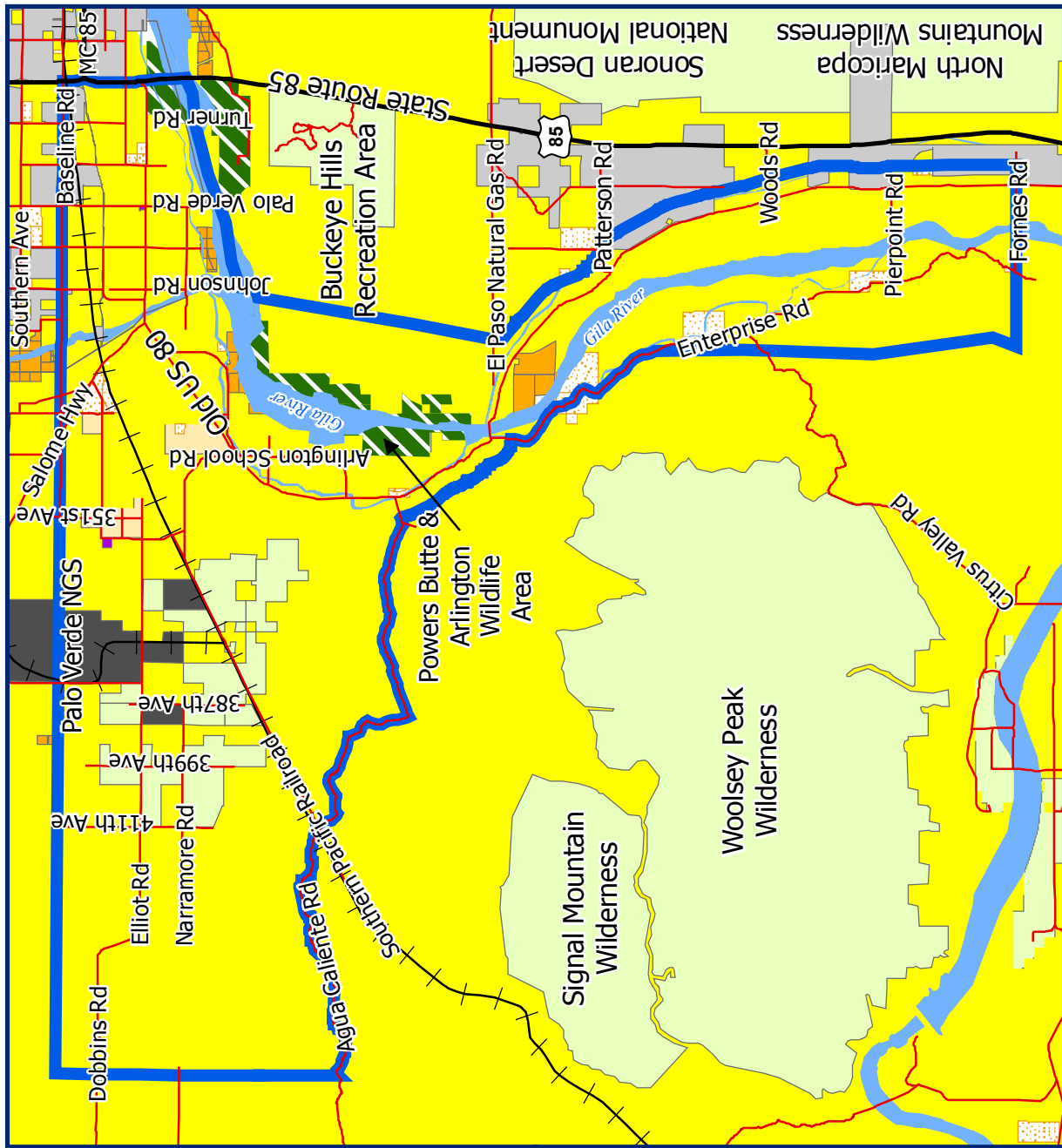
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# Existing Land Use

Figure 3

- Legend**
- Arterial Roadway
  - Highway
  - Railroad
  - Old U.S. Highway 80 Area Plan
  - Wildlife Area
  - Agriculture
  - Rural
  - Large Lot Residential
  - Dedicated/Non-developable Open Space
  - Power Plants
  - Educational
  - Rivers
  - Sand and Gravel Operations
  - Incorporated



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Agricultural exemptions have been issued for livestock grazing, dairy cattle, crops, and an egg ranch. Agricultural exemptions typically include uses accessory to agricultural farmlands which would not be allowed on residential properties. Most agricultural exemptions contain accessory uses for heavy farm equipment, barns, corrals, and fencing. The minimum lot size for an agricultural exemption is five contiguous commercial acres in size (one commercial acre equals 35,000 square feet). Residents have expressed the concern for preserving agricultural uses like Hickman's Egg Ranch. Hickman's has two ranches, one in Arlington and the other in Maricopa, with 3 million hens processing nearly two million eggs each day. Hickman's Egg Ranch is located at the intersection of Salome Highway and the Southern Pacific Railroad. **Table 7: Agricultural Exemptions** identifies the location, acreage, and type of use for agricultural exemptions in the planning area.

Historically, the Old U.S. Highway 80 planning area has experienced little residential development. The original Palo Verde town site was recorded with Maricopa County in 1915, consisting of a small ten acre subdivision located at the southwest corner of Old U.S. Highway 80 and Palo Verde Rd. Not until the 1970's were the subdivisions of Phoenix Valley West 1 and 2 recorded with the county. Finally, in 2000, Spring Mountain Ski Ranch was approved for nearly 50 lots on approximately 177 acres located southeast the Old U.S. 80 Bridge. In all, approximately 650 lots have been approved. Although these developments have brought some residential development, most residential development has occurred through lot splitting. Other residential development has occurred through large-lot subdivisions, discussed under the heading Special Planning Concerns.

Per the Maricopa County Zoning Ordinance, special use permits can be approved by the Board of Supervisors. Special uses are those that are not allowed under existing zoning entitlements. Consequently, under the special use ordinance four power plants have been permitted within the Old U.S. Highway 80 study area: Palo Verde NGS, Arlington Valley Energy Facility, Mesquite, and Redhawk Power Plants. More information on power plants is discussed later, under the heading Energy Service Providers. Other special uses within in the planning area include a fiber optic amplification facility and a water ski community. More recently, an RV Park and equestrian facility were approved near the southwest corner of Hazen Rd. and State Route 85. Currently, the RV Park and equestrian facility has not been built, but the special use permit will expire after 30 years. **Table 8: Special Use Permits** summarizes special use permits issued in the planning area.

Areas near the planning area have the potential to increase in population due to development master plan communities. In particular, the Belmont DMP located north of I-10 and along 355th Ave. could support a resident population of more than 150,000. Although the Belmont DMP is outside the Old U.S. Highway 80 planning area, these future residents will impact the region. Other planned DMPs located north of the planning area may also impact the planning area.



# INVENTORY AND ANALYSIS

**Table 7: Agricultural Exemptions**

<b>Agricultural Use</b>	<b>Acres</b>	<b>Location</b>
Cattle Ranch	25.4	S. of Old U.S. Highway 80 and 319th Ave.
Crops	20.2	Enterprise Rd. and Fornes Rd.
Crops	239.6	Enterprise Rd. and Pierpoint Rd.
Crops	36.3	N. of Old U.S. Highway 80 and Patterson Rd.
Crops	948.0	S. of Old U.S. Highway 80 and Enterprise Rd.
Crops/Farm	480.9	N. of Enterprise Rd. and Citrus Valley Rd.
Dairy	114.8	Old U.S. Highway 80 and Wilson Ave.
Dairy Cattle	56.9	Old U.S. Highway 80 and Agua Caliente Rd.
Egg Ranch	350.5	Salome Highway and Dobbins Rd.
Farm	80.0	SE of Old U.S. Highway 80 and Pierpoint Rd.
Livestock	34.2	Telegram Rd. and 335th Ave.

**Table 8: Special Use Permits**

<b>Name</b>	<b>Special Use</b>	<b>Acres</b>	<b>Location</b>	<b>Date Approved</b>
Buckeye Valley R.V. Resort, Inc.	R.V. Park/Equestrian Facility	59	Hazen Rd. and State Route 85	June 6, 2003
Burch & Cracchiolo (BLM)	Fiber Optic Amplification Facility	.25	N and W of Dobbins Rd. and 411th Ave.	December 7, 2001
Lakeside Ski Village	Water Ski Community	58	Old U.S. Hwy 80 and S of Woods Rd.	February 3, 1989
Arlington Valley Energy Facility (Duke Energy)	Power Plant	320	Elliot Rd. between 387 <sup>th</sup> and 391 <sup>st</sup> Ave.	September 22, 2000
Mesquite (Sempra Energy)	Power Plant	400	Elliot Rd. and Southern Pacific RR	January 5, 2001
Red Hawk (Pinnacle West)	Power Plant	460	Narramore Rd. and Southern Pacific RR	Year 2000
Palo Verde NGS	Nuclear Power Plant	4,000	Wintersburg Rd. and Baseline Rd.	Year 1978

Some privately owned parcels are now being proposed for development. From October 2005 to June 2006, Maricopa County has received notice of one subdivision, two comprehensive plan amendment (CPA) and three development master plan (DMP) requests within the planning area. A subdivision is when 6 or more lots are subdivided. CPA's are projects which are 40 acres or greater and DMP's are typically projects of 640 acres or greater.

### *Zoning Regulations*

The planning area includes two rural residential zoning districts that Maricopa County enforces through its adopted zoning ordinance: Rural-43 and Rural-190. Both of these districts allow residential uses, farms, recreational, and institutional uses. Rural-43 permits one single-family dwelling per minimum lot area of 43,560 square feet (one acre). Rural-190 permits one single-family dwelling per minimum lot area of 190,000 square feet (4.36 acres). Other zoning in the planning area includes C-3, Ind-1, and Ind-3. C-3 zoning allows for retail and wholesale commerce and commercial entertainment. Ind-1 zoning generally includes business and light



manufacturing uses that can be located near existing residential uses. Conversely, Ind-3 zoning is generally considered the most intensive zoning district for heavy industrial uses. Established zoning district categories are found in **Appendix B-Zoning District Categories** along with an existing zoning map shown in **Figure 16-Existing Zoning**.

### *Public Land Ownership*

The northern portion of the planning area consists of privately owned land and public land administered by the Bureau of Land Management (BLM), Arizona State Land Department, and Maricopa County. Public land ownership affects land use because the potential for trade or sale of land, lease agreements, or various recreational uses. Public land like BLM is often leased for livestock grazing or even conserved as recreational open space, while State Trust land is often sold to benefit designated trustees. **Figure 4-Land Ownership & Management** depicts property ownership patterns within the planning area.

### Federal Land

BLM administers approximately 38,000 acres (approximately 28%) of the land within the planning area which is mostly located near or around the Buckeye Hills Recreation Area, Signal Mountain Wilderness Area, and the Woolsey Peak Wilderness Area. Most of the land is undeveloped and in its natural state, however ranchers in the area have acquired livestock grazing permits for nearly all of the BLM land within the planning area. Other uses of BLM lands include open space and wildlife habitat. Such resources make the lands popular for various types of recreation. Transportation and utility corridors on the public lands support the infrastructure of urban communities throughout Maricopa County. The historic and current mining claims speak to the value of the mineral resources. In addition, many areas are rich with prehistoric sites and artifacts from ancient times as well as the history from early explorers.<sup>7</sup>














The Homestead Act, by which citizens could homestead a parcel of land and earn title, was repealed by the Federal Land Policy and Management Act of 1976. Typically, BLM does not offer much land for sale because of the 1976 mandate to retain most of these lands in public ownership. Rather than sell public land, BLM prefers to exchange it for private or state land to further resource management objectives. The resource management plans for the region are the Phoenix Resource Area Resource Management Plan (1989) and the Lower Gila South Resource Management Plan Goldwater Amendment (1990). Currently, BLM is updating the resource management plan to be known as the *Sonoran Desert National Monument Management Plan and Phoenix South Resource Management Plan Revision*. At this point, the preliminary draft of the resource management plan does not show any BLM land listed for sale, trade, or disposal in the planning area.

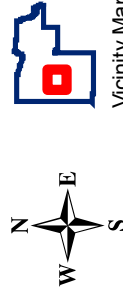
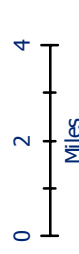
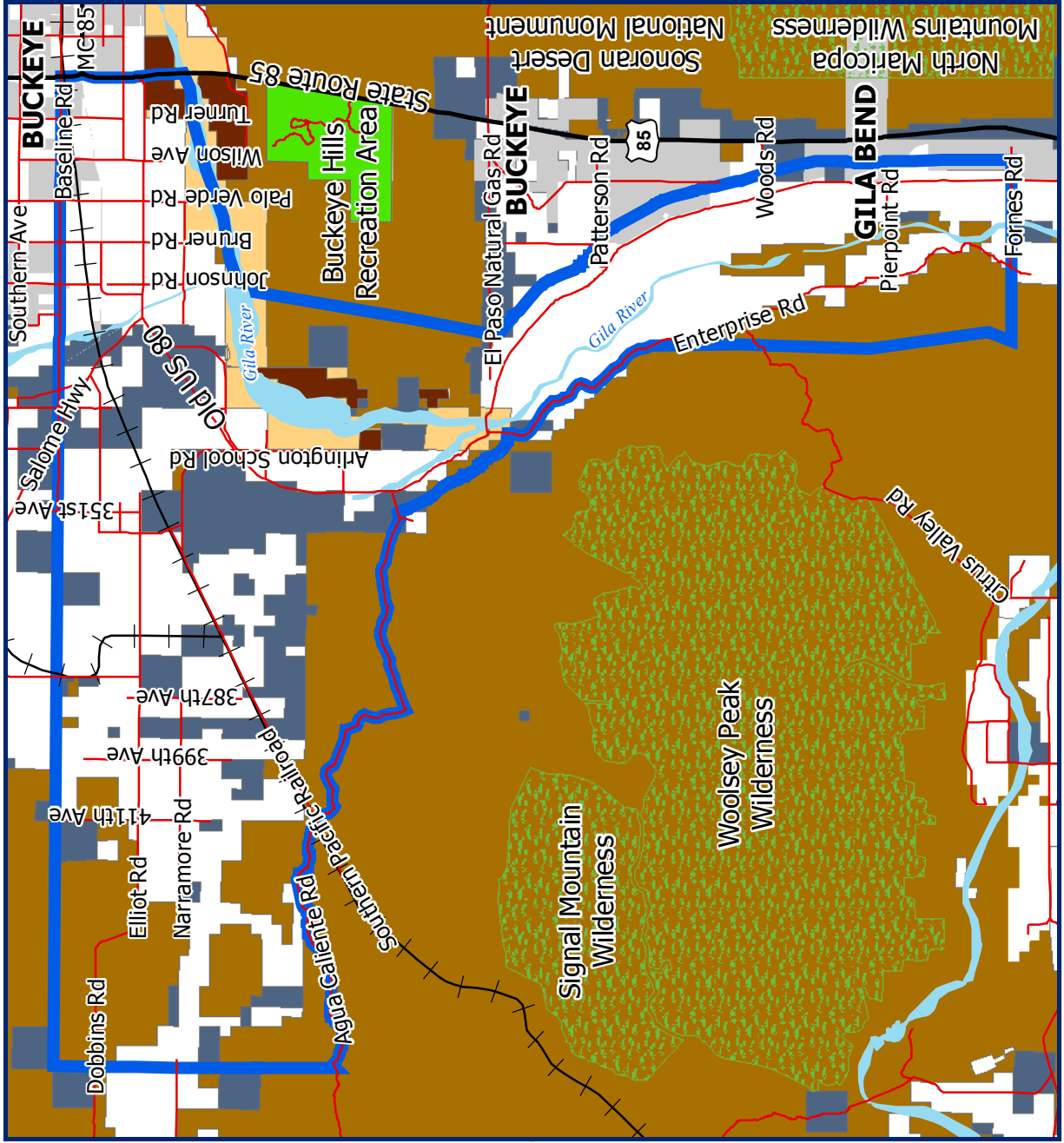
<sup>7</sup> [www.blm.gov](http://www.blm.gov)

# Land Ownership & Management

Figure 4

## Legend

-  Arterial Roadway
-  Highway
-  Railroad
-  Old U.S. Highway 80 Area Plan
-  River
-  County Park
-  Game and Fish Commission Lands
-  Flood Control District
-  BLM
-  State Trust Land
-  Private Land
-  Wilderness Areas (BLM)
-  Incorporated



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## State Land

The State Land Department administers approximately 19,000 acres (approximately 14%) in the planning area. State Trust land is mostly located in the northern portion of the planning area west of Old U.S. Highway 80 and the Hassayampa River. Similar to BLM land, most of the state trust land is leased for livestock grazing or agricultural uses. Under state charter, the ASLD has the responsibility on behalf of beneficiaries to assure the highest and best use of the trust lands. Fair market value must be obtained from all trust land transactions. All revenues derived from the sale of trust lands are placed in a fund, which benefits public education and several other public institutions. Leases and sales must occur at public auction. No state land within the planning area is slated for public auction at this time.

## Maricopa County

The Maricopa County Parks and Recreation Department operates the 4,474 acre Buckeye Hills Recreation Area. This park is located outside the planning area along State Route 85 and south of the Gila River. There are no designated trails but the park is planned for future improvements. The park is open to non-motorized use, including hiking, bicycling, and horseback riding. The park also offers a public shooting range which was once managed by the Buckeye Police Department, but is now managed by the Buckeye Sportsmen Club. According to the State Route 85 Area Plan, the shooting range could be expanded in the future to replace a County Sheriff's range presently located near Sun City West.

## *Public Facilities, Services, and Utilities*

This section describes the various public and private facilities and utilities in the planning area (**Figure 5-Existing Facilities & Utilities**) and provides an overview of existing conditions to help determine how current services can help support increased development.

The review is organized into seven subsections:

- Water Distribution Systems
- Sanitary Sewer System
- Sheriff's Department
- Fire Protection
- Educational Facilities
- Parks and Open Space
- Landfills

## Water Distribution Systems











The only water distribution systems are located in the northern portion of the planning area near Buckeye and Tonopah. The West Maricopa Combine, Inc. (WMC) was incorporated in April 1989 in Arizona and consists of two divisions: water services and water resources. WMC's water services division owns and operates 3 water utility companies serving rural and suburban areas in western Maricopa

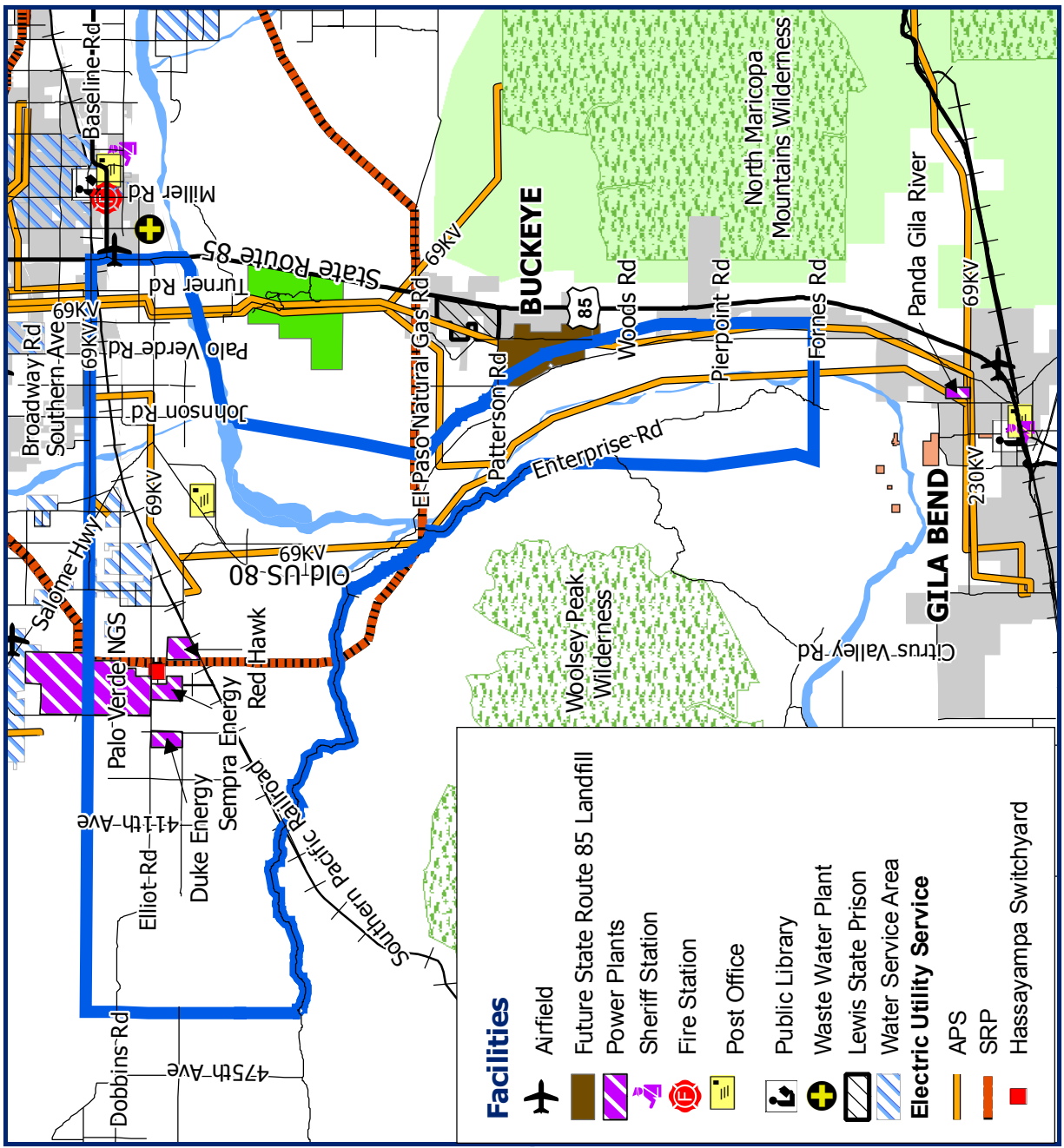


# Existing Facilities & Utilities

Figure 5

## Legend

-  Arterial Roadway
-  Old U.S. Highway 80 Area Plan
-  Highway
-  Railroad
-  River
-  Buckeye Hills Recreation Area
-  Incorporated Area
-  Wilderness Areas (BLM)
-  Sonoran Desert Nat'l Monument
-  Tohono O'odham Nation (Gila Bend)



Vicinity Map



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County. The three water companies servicing the area are Valencia Water Company, Water Utility of Greater Buckeye, and Water Utility of Greater Tonopah. Agricultural water is supplied by the Buckeye Irrigation District, Roosevelt Irrigation District, and the Arlington Canal Company.

## Sanitary Sewer System

Currently, sanitary sewer is limited to on-site septic systems. The nearest sewer line is located one mile east of the planning area along Rooks Rd. The potential for future expansion of the Buckeye's sanitary sewer system does exist, but will most likely remain limited until infrastructure can be installed when future urban development occurs.

## Sheriff's Department

The Maricopa County Sheriff's Office, operating out of one substation in Avondale, provides protective services for the planning area.

## Fire Protection

Fire Protection within the planning area is mainly provided by the Buckeye Valley Rural Fire District (BVRFD) to the Palo Verde and Arlington areas, while the Tonopah Valley Fire District handles emergencies closer to Tonopah. Central operation for the BVRFD is at Miller and MC 85. The BVRFD has a response time of 30 minutes on 98% of all calls.

## Educational Facilities

Currently, there are two elementary schools in the planning area: Arlington Elementary School and Palo Verde Elementary. Arlington School is located about 2 miles east of Palo Verde Nuclear Generating Station at the southeast corner of 355th Ave. and Dobbins Rd. Palo Verde Elementary School is located at the northwest corner of Palo Verde Rd. and Old U.S. Highway 80. Both schools are kindergarten through eighth grade. The nearest high school is Buckeye Union High School and Tonopah Valley High school. Both schools are outside the planning area.

It is unknown how many students attend various school districts in the region, however due to the youthful character of the planning area and anticipated future growth, the provision for schools may become a concern in the Arlington Elementary School District, Palo Verde Elementary School District, Saddle Mountain Unified School District (includes Tonopah Valley High School), Buckeye school districts, and Gila Bend school districts.

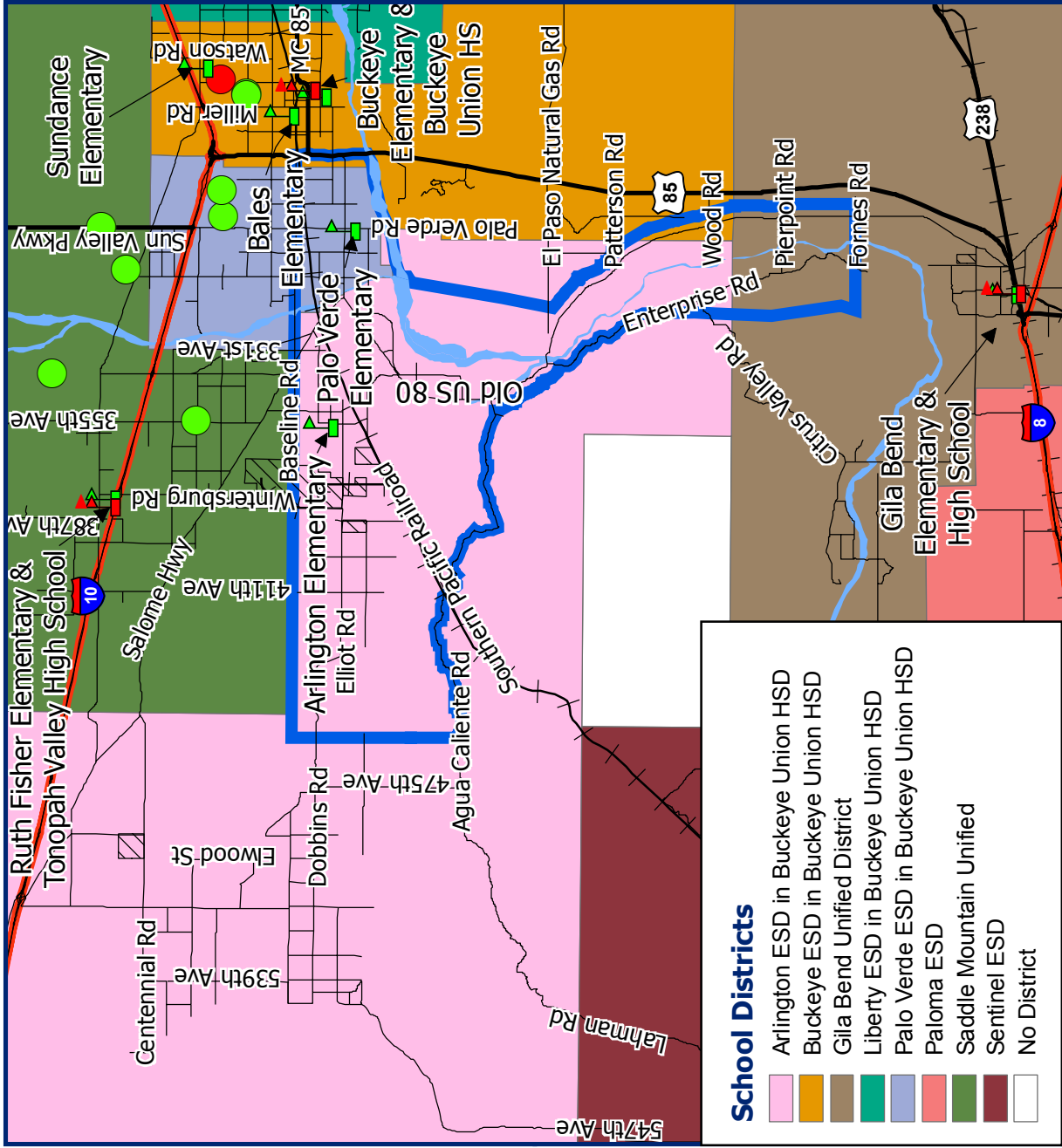
Based on information from the Arizona School Facilities Board and the Palo Verde Elementary School District, proposed school sites are planned for areas outside of the planning area (see **Figure 6-School Locations**).

## Parks and Open Space

Parks and open space is discussed in more detail in the Open Space Element. In short, there are no public parks in the planning area but is surrounded by dedicated

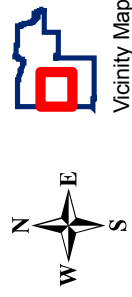
# School Locations

Figure 6



## Legend

- Arterial Roadway
- Highway
- Interstate
- Railroad
- Old U.S. Highway 80 Area Plan
- River
- Power Plants
- Existing High School
- Existing Elementary
- Proposed High School \*
- Proposed Elementary \*



## School Districts

- Arlington ESD in Buckeye Union HSD
- Buckeye ESD in Buckeye Union HSD
- Gila Bend Unified District
- Liberty ESD in Buckeye Union HSD
- Palo Verde ESD in Buckeye Union HSD
- Paloma ESD
- Saddle Mountain Unified
- Sentinel ESD
- No District



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\* Proposed Elementary and High School Locations are based on information provided by Arizona School Facilities Board and local school districts.





open space areas like Buckeye Hills Recreation Area, Woolsey Peak Wilderness, Signal Mountain Wilderness, and wildlife areas like Robbins Butte Wildlife Area, Powers Butte Wildlife Area, and Arlington Wildlife Area.

## Landfills

No landfills are currently operating within the planning area. However, from 1961 to 1997, Maricopa County operated the Hassayampa Landfill located at Baseline Rd. and Salome Highway. During an eighteen month period from April 1979 to October 1980, hazardous wastes were disposed in the northeastern section of the landfill. Under a manifest program operated by the Arizona Department of Health Services (ADHS), a wide range of hazardous wastes were approved for disposal, including up to 3.28 million gallons of liquid wastes and 4,150 tons of solid wastes. At the end of the eighteen month period, the landfill pits were covered with native soil and restored to grade. In 1981, three groundwater monitoring wells indicated contamination of volatile organic compounds (VOCs). VOCs are typically associated with industrial areas, landfills, and often the result of the improper disposal of chemicals. As a result, the site was added to the Superfund National Priorities List (NPL) on July 22, 1987, thereby making it eligible for Superfund cleanup. Municipal waste disposal ceased in June 1997.<sup>8</sup>

Future residential development of the landfill property is unlikely due to deed and access restrictions. To date, contamination has not been detected in off-site wells, but approximately 350 people draw drinking water from private wells within 3 miles of the site and 2,800 acres of farmland are irrigated by wells within 3 miles.

## *Special Planning Concerns*

The consequences of unsubdivided land, in Maricopa County are evident in some of the problems created by minor land divisions known as lot-splits. Legally, a landowner can divide their property up to five times and sell the lots without meeting county subdivision requirements for roads, sidewalks, and other improvements. Arizona law denies county control over the lot-splitting process but the Arizona Department of Real Estate does investigate alleged lot-splitting fraud (e.g. landowners who divide their property into five or less lots through divisions and conveyances between and among themselves, various corporations, limited liability companies or other entities, thereby creating a subdivision by evading compliance with county subdivision regulations). Ad hoc lot-splitting activities create a phenomenon known as “wildcat” subdivisions. Early in the lot splitting process, problems may not be apparent, but as the splits continue and more homes are built, both minor land divisions and wildcat subdivisions can create haphazard conditions, unsafe roads, access problems, and costly services. A balance needs to be achieved between private-property rights of a landowner to divide and sell rural lots and the need for adequate infrastructure. **Table 9: Land Split Considerations** addresses several issues that should be considered when planning to split a parcel of land.

<sup>8</sup> [www.epa.gov](http://www.epa.gov)



# INVENTORY AND ANALYSIS

**Table 9: Land Split Considerations**

Issue	Consideration	Benefit	Problems To Avoid
Current Zoning	Newly created parcels must meet all zoning requirements, including: Minimum lot width Minimum lot area Building setbacks	Land division meets state and county requirements.	An improper land split renders the property involved unsuitable for building and not entitled to a building or use permit.
Existing Structures	Existing structures such as buildings, wells, septic systems, and driveways should be considered when determining land division.	Existing structures will meet minimum setback requirements without requiring a variance.	Structures that do not meet setback requirements will require a variance to remain on site.
Wastewater Disposal  (Septic Systems)	Parcels should reserve adequate space for future on-site septic systems, and a reserve area for future use. Proposed system must meet all setback requirements, including minimum of 100' from any well, and typically 5' to 50' from any property line. Topography is essential to consider.	Newly created parcel has adequate land area to install future septic system and reserve area. Groundwater and drinking water quality is protected.	Improper lot splits can create property lines that overlap existing septic systems. This would typically require both homes to build new septic systems.
Wells	Well spacing requirements: Proposed well locations must be at least 100' from any septic or sewer system, or from another well.	New wells will meet public health codes.	Parcels that are too small may not be able to accommodate both a well and a septic system.
Drainage	Floodplain and drainage guidelines and regulations should be considered when planning land division.	Flood hazards and soil erosion are minimized.	Newly created parcels that do not plan for drainage may cause future flooding and drainage problems on site or for neighbors.
Access: Public Private Fire Emergency	Parcels should demonstrate physical access that is traversable by a two-wheel drive passenger motor vehicle. A turnaround area is preferred for emergency vehicles. New parcel should not block access to neighboring properties.	Parcels have sufficient access for fire and emergency vehicles. Parcel owner has legal access to property.	Parcels that do not have permanent legal access present problems for the landowner. Lack of access for fire and emergency vehicles presents serious safety problems.
Street and utility rights-of-way and easements	Existing and future rights-of-way and easements should be considered during land division process.	Parcels exclude roadways dedicated to the public and meet zoning requirements without a variance.	Parcels that do not meet zoning requirements after excluding public roadways will require a variance prior to building.
Land Division versus Subdivision	Land divisions of five or fewer parcels must comply with state and county requirements. Splitting a parcel into more than five parcels requires compliance with Maricopa Co. Subdivision Regulations.	Determination that proposed land split does not constitute a subdivision.	Splitting land into more than five parcels requires a Subdivision Public Report issued by the Arizona Dept. of Real Estate (DRE). Subdivisions that cannot provide a Public Report could be in violation.
Topography	Topography such as hills, washes, and boulder outcrops should be considered during land division process.	Attractive topographic features may increase land value / marketability.	Significant cuts, fills or disturbance of washes may impact marketability and value of new parcel(s).



Several large-lot subdivisions have been approved within the Old U.S. Highway 80 planning area. These subdivisions consist of lots approximately 40 acres in size, with little or not infrastructure improvements, and cover large portions of undeveloped desert. These subdivisions are not regulated by the county subdivision process due to state regulations. Lot splitting, as discussed earlier, can become an issue within these subdivisions because of the underlying zoning districts for. Since the Desert Wilderness Ranches (zoned Rural-190), Horseshoe Trails (zoned Rural-190), and Arlington Farms (zoned Rural-43) subdivisions consist of lots approximately 40 acres in size, many of the lots within these large-lot subdivisions can be lot-split according to the Rural-43 or Rural-190 zoning district requirements. Similarly, Roosevelt Citrus Acres (zoned Rural-43) consists of lots approximately 5 acres in size, many of the lots can be lot-split according to the Rural-43 zoning district requirements. As discussed earlier, Arizona law denies county control over the lot-splitting process. **Table 10: Large-Lot Subdivisions** summarizes the large-lot subdivisions within the planning area.

### Sand and Gravel Operations

Sand and gravel operations are exempt from Maricopa County's zoning regulation which creates a special land use concern. Sand and gravel operations may alter development patterns in the area and are considered to be an intense use. Despite exemption from zoning regulation, sand and gravel operations are not granted the entitlements of industrial zoning.

Sand and gravel operations require several permits. Flood Control District of Maricopa County requires an approved floodplain use permit to address issues related to excavation, erosion, and possible flooding. Permits are also required from the Maricopa County Environmental Services Division for air quality and from the Arizona Department of Environmental Quality for water quality. Sand and gravel operators must submit a land use application with Maricopa County Planning and Development for tracking purposes and proper disclosure of mining exemption.

Currently, there is one sand and gravel operation permitted within the planning area.

FNF Construction, Inc. operates a sand and gravel operation located south of Gillespie Dam along Old U.S. 80. Two other sand and gravel operation are currently pending, one is located at Bruner Rd. along the Gila River and the other is located near FNF Construction.

### Energy Service Providers

The Palo Verde Nuclear Generating Station (PVNGS) and three other energy service providers are within the Old U.S. Highway 80 planning area. Located at Wintersburg Rd. and Baseline Rd., PVNGS is the largest power producer of any kind in the United States. Its three units are capable of generating nearly 4,000 megawatts (MW) of



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**Table 10: Large-Lot Subdivisions**

<b>Name</b>	<b>Request</b>	<b>Acres</b>	<b>Location</b>	<b>Year Approved</b>
Roosevelt Citrus Acres 1 & 2	Large-Lot Subdivision	1,670	Baseline Rd. and Johnson Rd.	1920's
Arlington Farms	Large-Lot Subdivision	1,235	Old U.S. 80 and Arlington School Rd.	1970's
Desert Wilderness Ranches	Large-Lot Subdivision	1,235	Narramore Rd. east of 475 <sup>th</sup> Ave.	1990's
Horseshoe Trails 1, 2, & 3	Large-Lot Subdivision	4,750	Various locations west of PVNGS and SW of Narramore Rd. and 411 <sup>th</sup> Ave.	1990's

electricity.<sup>9</sup> For cooling purposes, Palo Verde uses nearly 60 million acre-feet of effluent each year.

PVNGS is connected to the U.S. western power grid through a 500-kV switching station via five 500-kV transmission lines. PVNGS is also located close to several existing natural gas pipelines, making it a desirable location for merchant power plants. Consequently, owners of the Palo Verde Switchyard received 11 requests for interconnection to the switching station. The Palo Verde Switchyard had limited room for expansion and could accommodate only three additional interconnections. The solution was to build a new "satellite" switching station in close proximity to the existing switchyard.<sup>10</sup> Together, six energy service providers constructed the Hassayampa Switchyard, a new 500-kV switchyard inter-tied to the Palo Verde Switchyard. The Hassayampa 500 kV Switchyard was developed and funded by Pinnacle West, Pacific Gas & Electric, Sempra Energy, Duke Energy, and Power Development Enterprises in conjunction with SRP as a common bus to the Palo Verde switchyard.

Redhawk Power Station began operating in mid-2002. Two identical natural gas-fueled combined-cycle units produce 1,060 MW of electricity. The plant is owned and operated by Arizona Public Service (APS). Located at Narramore Rd. and the Southern Pacific Railroad, the station purchases treated effluent from PVNGS to meet its cooling needs. Redhawk utilizes a Zero Discharge System meaning that the cooling water is continually reclaimed and reused and no water is released to the environment.<sup>9</sup>

Arlington Valley Energy Facility (AVEFI) began commercial operations in 2002 and is a 570 MW gas-fired combined cycle facility owned by Duke Energy. In the same year, Duke Energy received conditional approval from the Arizona Corporation Commission to construct a 600 MW expansion to the facility but has not been realized. AVEFI is located along Elliot Rd. between 387th Ave and 391st Ave. on approximately 60 acres of land and includes an evaporation pond.<sup>11</sup>

<sup>9</sup> www.aps.com

<sup>10</sup> Transmission & Distribution World, "Generators Partner to Compete". May 1, 2001. Contributing Writer Gene Wolf.

<sup>11</sup> [www.cc.state.az.us](http://www.cc.state.az.us), Arizona Corporation Commission 2<sup>nd</sup> Biennial Transmission Assessment 2002-2011 Workshop



Mesquite Power Generating Station began commercial operations on September 2001. This 1,250 MW natural gas-fueled combined-cycle power plant produces up to 43% more electricity than standard power plants. Owned by Sempra Generation, it includes 3,000 acres set aside for water rights as open space with 42 acres for a conservation area. Prior to construction, cactus and mesquite trees were removed and later transplanted back on the site.<sup>12</sup>

Planning for future development and transportation is essential near and around PVNGS. In 1984, PVNGS established an Emergency Planning Zone (EPZ). Together, PVNGS and the Maricopa County Department of Emergency Management review future projects and provide information to residents within the EPZ. Future developers within the 10-mile EPZ will need to comply with federal, state, local laws, and regulations for emergency planning and notification. Furthermore, new development within 30 miles of PVNGS will need to coordinate plans with the appropriate emergency planning office. Within PVNGS's 50-mile EPZ, measures are taken to protect the public from ingesting any contaminated food or water in the event of an emergency. For instance, the agricultural community receives a pamphlet titled "Radiological Emergency Information for Farmers, Dairy Farmers, Ranchers, Food Processors, and Distributors" which is prepared and distributed by the Arizona Division of Emergency Management.<sup>13</sup>

Several roads within the planning area are designated as emergency evacuation routes: Salome Highway, Elliot Rd., Narramore Rd., Wintersburg Rd., and Old U.S. Highway 80. More information on the environmental effects of power plants is discussed in the Environment/Environmental Effects element.

## **Future Land Use: Definitions and Guidelines**

State law requires rezoning requests to be consistent with the adopted county plan. As such, rezoning requests for specific areas or parcels of land must be evaluated in relation to overall advancement of plan goals, objectives, and policies. The future land use categories in this plan are consistent with the Maricopa County Comprehensive Plan. It is important to note that land use designations do not supersede existing zoning. Land use designations are intended to guide future development, but existing zoning entitlements are not affected.

Definitions are included in this section to give a better understanding of proposed future land uses. In some instances, definitions are followed by guidelines help ensure that the intent and integrity of the Old U.S. Highway 80 Area Plan is retained. Together, the corresponding definitions and guidelines for each future land use category helps assure consistent interpretation of future rezoning requests. Finally, an analysis of existing land use categories in the Old U.S. Highway 80 planning area follow each definition and guidelines. The analysis recognizes existing development activities and other trends in growth and development. This includes

<sup>12</sup> [www.semprageneration.com](http://www.semprageneration.com)

<sup>13</sup> Emergency Planning Zones. Maricopa County Department of Emergency Management.



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consideration for land uses and development or planning activities outside the planning area that affect desired future development patterns. In addition, adopted municipal land use plans were considered during the analysis of land uses.

### *Open Space Land Use: Definitions and Guidelines*

The preservation of open space, regional connections of open space, and public access to open space are important considerations in the Old U.S. Highway 80 Area Plan. In addition, state statutes require that Maricopa County plan for the acquisition and preservation of open space. An inventory and analysis of open space is included in the Open Space chapter. The Maricopa County Comprehensive Plan defines two types of open space: Dedicated Open Space and Proposed Open Space. Dedicated Open Space areas are those under public ownership (except State Trust Land) such as county parks and land administered by the BLM. Proposed Open Spaces are areas that have been identified for potential open space and recreational purposes and are intended to be managed to protect public access and encourage environmental preservation.

The Open Space category denotes areas best suited for open space and recreation. It includes uses such as parks, recreation and scenic areas, and drainage. All private and public lands identified as proposed open space may be developed at residential densities of one (1) residential dwelling unit per acre – subject to applicable planning and zoning regulations – unless it is added to the public domain or protected using other techniques that respect private property rights. Development within certain areas designated as open space is acceptable, provided development in environmentally sensitive areas like steep slopes, floodplains, and significant wildlife and plant habitats is in compliance with all applicable federal, state, and county regulations.

### *Open Space Land Use: Analysis*

Preservation of open space, protection of native wildlife and plants, wildlife habitat, and wildlife movement corridors are key issues identified by planning area stakeholders. As such, retention of open space in floodplains and preservation of Sonoran desert landscape will be a combination of voluntary support by landowners; regulations and drainage guidelines, and open space set aside by developers.

The open space category identifies areas best suited for potential open space and recreation. Open space increases land values, provides natural flood control, supports wildlife habitat connections, and facilitates recreational uses. In this plan, proposed open space corresponds with all areas designated within slopes greater than 15 percent and the power plants water rights properties. Not all FEMA 100-year floodplains/floodways are designated as proposed open because it is recognized that development can occur within floodplains under the proper permits. Floodplains areas are shown in **Figure 12-Floodplains and Topography**.





## *Residential Land Use: Definitions and Guidelines*

The Old U.S. Highway 80 Area Plan contains three residential land use categories: Rural Residential, Large Lot Residential, Small Lot Residential, and Medium Density Residential. In unincorporated Maricopa County, residential density within specific projects is calculated based upon the overall gross acreage of the site. Overall density of any project is expected to conform to the recommended residential land use category. Urban services and infrastructure are required for areas that exceed 1 d.u./acre. As with all types of development, care should be given to ensure appropriate preservation of environmental and cultural features such as hillsides, washes, archaeological sites, and other sensitive areas.

### Rural (0-1 Dwelling Units per Acre)

The rural category identifies areas where single family residential development is desirable because urban services such as sewer, water, schools, parks, roads, and emergency services are limited or nonexistent. Development suitability is determined based on location, access, existing land use patterns, and natural or human constraints. Densities greater than 1 d.u./acre may be permitted in new development, but only if areas of lower densities offset the increase such that an average of no more than 1 d.u./acre is maintained. Primary uses in this category include agriculture and single family residential.

### Large Lot Residential (1-2 Dwelling Units per Acre)

The Large Lot Residential category denotes areas where single family residential development is desirable and urban services such as such sewer, water, schools, parks, and fire and police protection may only be partially available or be required as an improvement district. Suitability is based on location, access, existing land use patterns, and natural and human constraints. Densities greater than 2 d.u./acre may be permitted in new development, but only if areas of lower densities offset the increase such that an average of no more than 2 d.u./acre is maintained. A community sewer and water system will be required for developments above 1 d.u./acre and may be required for those below 1 d.u./acre depending on preexisting conditions.

### Small Lot Residential (2-5 Dwelling Units per Acre)

The Small Lot Residential category identifies areas where increased residential density development is appropriate and urban services such as such sewer, water, schools, parks, and fire and police protection are available. Single family development may be permitted, provided that overall development densities do not exceed 5 d.u./acre. Densities greater than 5 d.u./acre may be permitted in new development, but only if areas of lower density offset the increase such that an average of no more than 5 d.u./acre is maintained. A community sewer and water system will be required for development at these densities.



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### Medium Density Residential (5-15 dwelling units per acre)

The Medium Density Residential category identifies area where intermediate single and multiple family residential density is appropriate, and urban services such as sewer, water, schools, parks, and emergency services are available. Single and multiple family residential development may be permitted, provided that overall development densities do not exceed 15 d.u./acre. Residential densities greater than 15 d.u./acre may be permitted in new development, but only if areas of lower density offset the increase such that an average of no more than 15 d.u./acre is maintained. A community sewer and water system will be required for residential development at these densities.

### *Residential Land Use: Analysis*

Several significant principles guide residential development in the Old U.S. Highway 80 Area Plan. Particular consideration is given to the continuance of the existing rural lifestyle, the preservation of hillsides and floodplains, and compatibility with the natural environment to protect public health, safety, and general welfare. In areas which are designated as Rural residential, many residents choose a rural lifestyle and don't often expect urban services.

### Development Master Plans (DMPs)

Master planned communities have long been a preferred type of development in Maricopa County because they promote quality standards of prudent and sustainable land use. The County advocates using DMPs to allow flexibility in the master planning of large tracts of unincorporated land. DMPs provide opportunities for creative design and development techniques, and generally require a high level of commitment to ensuring they have adequate facilities and infrastructure to serve their residents' needs. Master planned communities have the potential to provide mixed land use opportunities, a range of housing choices, open space and recreational opportunities, and a multi-modal transportation system connected to schools, parks, retail, and employment centers. A more complete discussion of DMPs is found in the Maricopa County Comprehensive Plan and the Maricopa County Development Master Plan Guidelines.

While future DMPs can be developed anywhere in the unincorporated Maricopa County, appropriate development guidelines will vary depending on the individual circumstances and the goals, objectives, and policies set forth in the Comprehensive Plan. In addition, a DMP developer must demonstrate how the project will impact the affected area plan, both positively and negatively, at project build-out. While most land in the planning area is currently rural in nature, a DMP would be urban in scale and use. To urbanize an area, a DMP will be required to establish urban level services. Adequate proximity to employment and commercial support services is an important factor. Water supply is one of the most restricting factors for a DMP. If an adequate water supply cannot be obtained, an urban project cannot be realized. Wastewater management is equally restricting in the Old U.S. Highway 80 area. A new DMP would require the construction of a new wastewater treatment plant or





connection to an existing plant with adequate capacity. New urban development will have to address these and other constraints prior to development.

## Development Agreements and DMPs

Development agreements are voluntary arrangements between local governments and developers concerning the design and construction of specific developments. These agreements protect development from changes in laws and regulations, while allowing governments to obtain specified exactions to ensure infrastructure construction and reinforce local planning efforts. Development agreements offer a way to reduce developers' risk while simultaneously increasing government's ability to guide local development.

## *Commercial Land Use: Definitions and Guidelines*

The Old U.S. Highway 80 Area Plan contains two commercial land use categories: Neighborhood Retail Center and Community Retail Center. Urban service levels and infrastructure such as community water and sewer are required for commercial land use categories identified in the Old U.S. Highway 80 planning area.

## Neighborhood Retail Center — NRC

The Neighborhood Retail Center category identifies convenience commercial areas for the location of small shops and services that benefit local residents. This category permits developments with a total building area of less than 100,000 square feet, and is designated in areas having a more rural character.

## Community Retail Center — CRC

The Community Retail Center category includes areas where general neighborhood/community based commercial uses may take place. This category permits developments with a total building area of 100,000 to 500,000 square feet. CRCs provide convenience goods and personal services that meet the daily needs of an immediate neighborhood trade area. These trade areas should serve a minimum population of 40,000 people, and a limited number of permitted activities should be provided. A community sewer and water system will be required for development, and a market analysis may be required. All CRCs are subject to plan review and approval.

The following guidelines assist land use planning as it relates to the commercial land use designation:

- Commercial land uses assume the presence of adequate infrastructure to support such services. Commercial uses are permitted in the NRC and CRC categories, but any rezoning request shall provide an appropriate sewer solution other than septic.
- Commercial development shall be compatible with adjacent residential development.



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- Landscaping should be compatible with the surrounding environment and/or adjacent development to give a consistent appearance from the roadway.

### *Commercial Land Use: Analysis*

During the planning process, stakeholders expressed an interest in allowing various types of commercial and retail development in the planning area. Two important issues which were to provide commercial uses which tie into Old U.S. Highway 80 and isolated intense land uses like commercial near urban areas. The Old U.S. Highway 80 Area Plan takes into account the two important issues by encouraging community retail uses at the intersection of Old U.S. 80 and Palo Verde Rd. Additionally, neighborhood retail uses are located near areas which are designated for small lot residential which is considered an urban residential land use.

### *Employment Land Use: Definitions and Guidelines*

The following employment center land use categories are identified in the Old U.S. Highway 80 planning area.

#### Industrial

The Industrial category identifies locations for major employment centers. Appropriate uses in this category include general warehousing, storage, distribution activities, and general manufacturing. Compatibility with adjacent current and future land use is an important consideration, and developments within this category are subject to plan review and approval.

#### Business Park

The Business Park category identified locations of employment centers, with an emphasis on enclosed and planned environments. Appropriate uses in this category include industrial, office, and retail. Compatibility with current and future land use is an important consideration, and developments within this category are subject to plan review and approval.

The following guidelines assist land use planning as it relates to the Employment land uses:

- Proposed uses must be appropriate for the type of employment center in which they are located.
- Employment uses require adequate infrastructure to support such services, including a sewer system.
- New employment development should provide appropriate transition and buffering adjacent to residential development.
- The Industrial land use category should utilize lighter industrial uses. Light industrial uses should be rural in type or even garden-type industrial uses. Furthermore, industrial development may also be required to landscape and/or to screen uses from the public view.



## *Employment Land Use: Analysis*

According to the MAG Socioeconomic data, 6,044 jobs exist within the planning area, mostly in the industrial and public sectors. At the moment, environmental and geographical constraints prevent large-scale development south of Gillespie Dam, however with appropriate infrastructure higher intensity uses are possible. Providing nearby employment opportunities is an important part of Maricopa County's Comprehensive Plan. Allowing people to work near their homes will help reduce traffic congestion, reduce commuting time, improve air quality, and create more efficient land use patterns.

## *Mixed Use: Definition and Guidelines*

The Mixed Use category identifies areas where residential, commercial, and employment uses are permitted in a planned environment. Compatibility is an important consideration, but traditional separation of land uses is neither appropriate nor encouraged. Higher density development and compact design is fundamental.

The following guidelines assist land use planning as it relates to the Mixed Use land use designation:

- Careful consideration should be given to circulation within a mixed use development (i.e. multimodal transportation).
- New Mixed Use development should balance the various types of uses. Market studies are encouraged as part of any Mixed Use request to demonstrate viability of differing uses.
- Mixed Use development requires adequate infrastructure to support such services.
- Appropriate transition and buffering between adjacent developments is encouraged.

## *Mixed Use: Analysis*

Current planning research suggests that higher densities in certain locations, such as Mixed Use developments, can have an environmental benefit because of more efficient land development patterns and more potential for open space. Economic benefits include less time commuting to and from work, easy access to retail shopping, and fewer infrastructure costs. If planned properly, higher densities can create a unique place where people live, work, and recreate within a mixed use development.

## *Buffering and Transitional Land Use Guidelines*

When two or more types of land uses are shown on the Old U.S. Highway 80 Land Use Plan or are approved as part of a Development Master Plan, buffering and/or transitional land uses may be necessary. Buffering may consist of open space placed between two incompatible land uses, density transitions, walls, berms, landscaped



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setbacks, or other recognized methods. Buffering is required for intensive uses where a less intensive use already exists, or where the Old U.S. Highway 80 Land Use Plan shows a less intense use adjacent to a more intense use. The use of transitional land uses consists of placing uses of intermediate intensity between incompatible uses. Examples which may require transitional land use include:

- Low density, single-family development adjacent to multi-family development.
- Single or multi-family development adjacent to commercial land uses.
- In cases where buffering is necessary, these and other methods may be considered:
  - Areas of landscaped open space
  - Arterial or collector streets with landscaping
  - Block walls, landscaping, earth berms
  - Any combination of the above

### *Facilities and Services*

The Old U.S. Highway 80 planning area currently contains a combination of scattered rural development mixed with low-density subdivisions. Most of the single family homes rely on wells and septic systems, although residents in some areas must haul water to their homes. Water service is provided by several local water companies, predominantly in the northern portion of the planning area. Any expansion of water facilities would most likely be at the cost of the property owner. Facilities and services currently available to all residents in the area include emergency fire service, electric and phone service, and emergency response. Facilities not currently available to the planning area include community sewer, parks, libraries, and senior high schools.

Maricopa County encourages urban growth (i.e. commercial, employment, and residential density greater than 1 dwelling unit per acre) to occur within the Urban Service Area (USA) where services, infrastructure, and facilities are readily available. The USA is not delineated on the land use map. Rather, it is defined by the ability of a jurisdiction, improvement district, or private entity to provide infrastructure and appropriate urban services to a specific site or project. The USA is considered suitable for higher density development, as well as an area considered efficient to expend public funds. For development outside the Urban Service Area, various facilities, infrastructure, and services may not be required and will be reviewed by Maricopa County on a case-by-case basis.



## TRANSPORTATION

This portion of the Old U.S. Highway 80 Area Plan analyzes existing transportation plans, studies, programs, public transit service issues, and provides an inventory of the area's roadway system.

### Maricopa County Transportation System Plan

The mission of the Maricopa County Department of Transportation is to provide a quality transportation system for the citizens of Maricopa County. The Maricopa County Transportation System Plan (TSP) was adopted in December 1997 as the transportation element of Maricopa County's Comprehensive Plan. Consequently, all planning decisions related to transportation are administered by MCDOT through the TSP. The TSP states that the transportation network should support the safe and efficient movement of goods and people, be environmentally compatible with surrounding conditions, and be supportive of economic development. The TSP helps evaluate regional transportation system impacts; helps identify funding and maintenance priorities; and organizes roadways under MCDOT's jurisdiction.

To accomplish this, three roadway categories have been established: primary, secondary, and local. Primary roads in the system are the most critical to the success of the TSP. They receive the highest priority for funding, maintenance and other activities. The MAG Roads of Regional Significance system and municipal general plans serve as the basic structure for the primary road system. The Roads of Regional Significance (RRS) concept and design guidelines were adopted by the MAG Regional Council in the Spring of 1991, and by the Maricopa County Board of Supervisors in October 1992. Municipal general plans address specific roadway needs within municipal planning areas. Any future updates to the RRS system or the municipal general plans will be considered for inclusion to primary road status.

Primary roads within the planning area include Old US 80, Salome Highway, Elliot Rd., Palo Verde Rd., and 355th Ave. north of Salome Highway. All other roads are considered secondary or local. Secondary roads are lower priority corridors where MCDOT's participation will be more limited, particularly in comparison to the primary system. At the local road level, MCDOT's effort might only be to maintain and not to improve the road, or to provide technical assistance for planning and design.

### Maricopa County Major Streets and Routes Plan

The TSP includes a Planning and Management chapter that calls for the preparation of a Maricopa County Major Streets and Routes Plan (MSRP). This plan was completed and adopted April 18, 2001, and was revised September 2004. The MSRP designates and maps future roadway classifications, roadway design standards, and route overlays for all primary and secondary roads in the Maricopa County roadway system. These future classifications project the ultimate (20 year) functional status



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of roads. The plan includes two components: a street classification atlas and a policy document to support the atlas.

The functional classification system used by Maricopa County to classify county streets includes: expressway/freeway, principal arterial, minor arterial, major collector, minor collector, and local street. Typical design standards are illustrated in cross-section in the MSRP. These future roadway classifications are identified in **Figure 7—Future Street Classifications System**.<sup>14</sup> Current and Future classifications for streets in the Old U.S. Highway 80 area are provided in the Inventory of the Existing Transportation System section of this chapter.

The MSRP defines the components of the functional classification system as follows:

### *Expressway/Freeway*

An expressway/freeway provides for the swift movement of large volumes of through traffic; is a divided roadway and is not intended to provide access to abutting land; will have complete separation of opposing traffic flows; and will have grade separated intersections or at-grade, signalized intersections at a minimum of one-mile spacing. I-10, I-8, and State Route 85 are the only expressways/freeways near the planning area.

### *Principal Arterial Street*

A principal arterial street provides for long distance traffic movement within Maricopa County or between Maricopa County and urban areas. Service to abutting land is limited. Access is controlled through frontage roads and raised medians, as well as the spacing and location of driveways and intersections. Opposing traffic flows are separated often by a raised median. The ultimate cross section is four to six lanes in width and includes bike lanes. Salome Highway, Johnson Rd. and Palo Verde Rd. north of Old U.S. Highway 80 are all classified as principal arterials. Old U.S. Highway 80 between Salome Highway and Oglesby Rd. does have a future functional classification of principal arterial in the planning area and could be widened from its existing two lanes when circumstances warrant expansion. Additionally, just outside the planning area MC 85 is also designated as a principal arterial. This principal arterial classification is designed to handle ultimate future traffic demand.

### *Minor Arterial Street*

A minor arterial street provides for moderately long distance traffic movement within Maricopa County or between Maricopa County and urban areas. Moderate access is provided to abutting land. Access is controlled through frontage roads, raised medians, and the spacing and location of driveways and intersections. A raised median or a continuous left-turn lane separates opposing traffic flows. The ultimate cross section is four lanes in width and includes bike lanes. Many of the

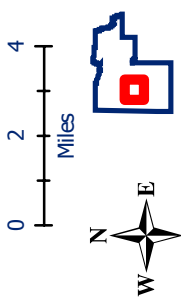
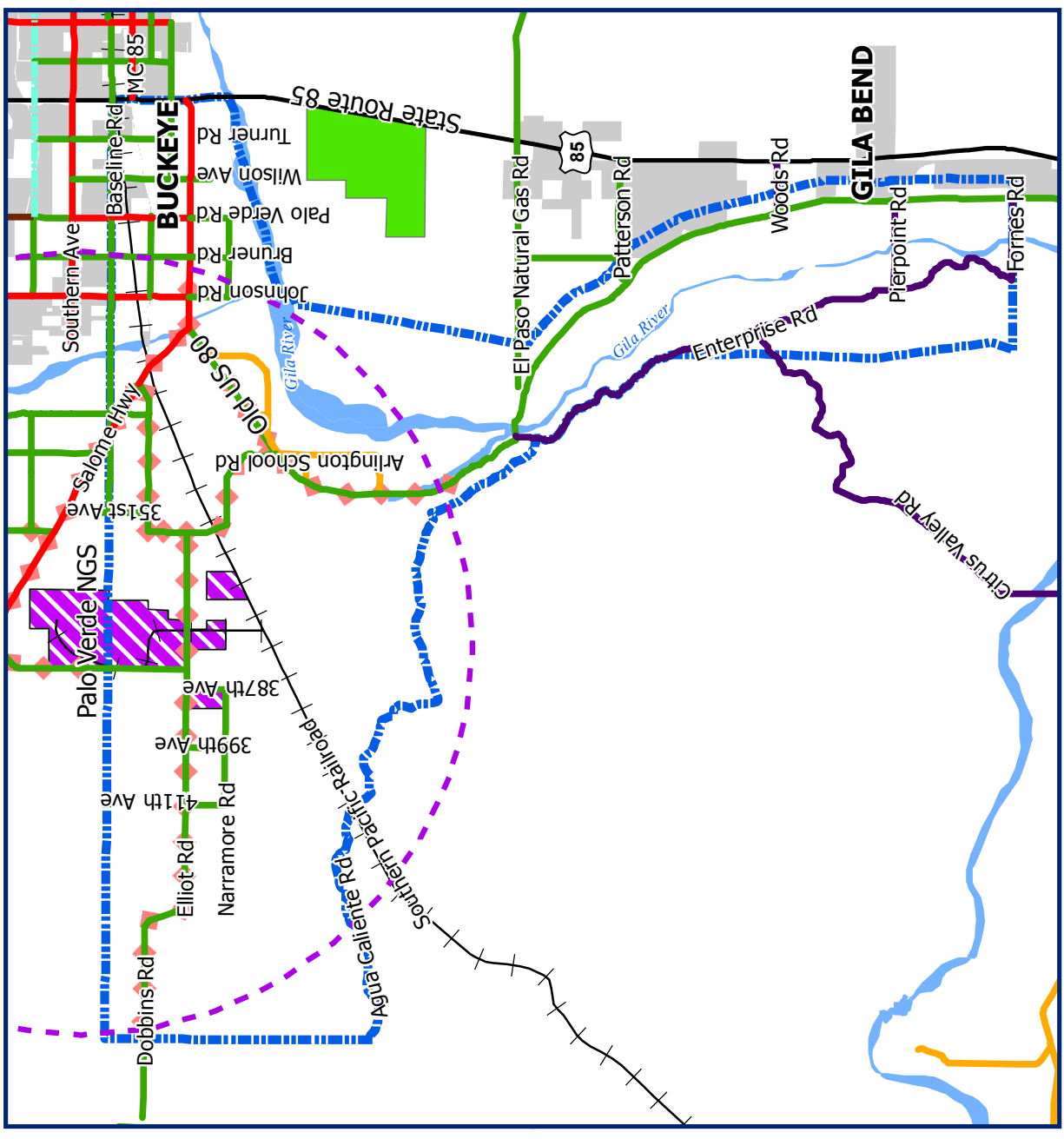
<sup>14</sup> Maricopa County Department of Transportation. Maricopa County Major Streets and Routes Plan, Revised



# Future Street Classification System

## Figure 7

- Legend**
- Highway
  - Future Classification**
    - Principal Arterial
    - Minor Arterial
    - Major Collector
    - Minor Collector
    - Enhanced Arterial
    - TBD (MAG Study Pending)
    - PVNGS 10-mile radius
    - Emergency Management Overlay
    - Old U.S. Highway 80 Area Plan
    - Power Plant
    - Buckeye Hills Recreation Area
    - River



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MARICOPA COUNTY  
 PLANNING & DEVELOPMENT DEPARTMENT





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roads in the planning area are designated as minor arterial: Baseline Rd., Bruner Rd., Wilson Ave., Turner Rd., Hazen Rd., Dobbins Rd., Elliot Rd., Narramore Rd., Wintersburg Rd., 351st Ave., 399th Ave., 411th Ave., Patterson Rd., and Old U.S. 80 south of the Salome Highway junction.

### *Major Collector Street*

A major collector street provides for short distance (less than three miles) traffic movement; primarily functions to collect and distribute traffic between local streets or high volume traffic generators and arterial streets; and provides direct access to abutting land. Raised medians and the spacing and location of intersections and driveways may control some access. A major collector is two to three lanes in width and includes bike lanes. Enterprise Rd., Woods Rd., Pierpoint Rd., Fornes Rd., and Citrus Valley Rd. are the only streets in the planning area that are currently classified as major collector.

### *Minor Collector Street*

A minor collector street provides for short distance (less than three miles) traffic movement; primarily functions to collect and distribute traffic between local streets and arterial streets; and provides direct access to abutting land. The spacing and location of intersections and driveways may control some access. A minor collector is two lanes in width. There are currently four minor collector segments in the planning area: 331st Ave. (south of Old U.S. 80), Arlington Canal Rd., Arlington School Rd., El Paso Natural Gas Rd., and Desert Rose Rd.

### *Local Street*

A local street provides for direct access to residential, commercial, or other abutting land, and for local traffic movements. Local streets connect to collector or arterial streets. A local street is a two-lane roadway. Examples include 309th Ave., Euclid Ave., Siesta Way., Rainbow Trl., Teepee Rd., Telegram Rd., Knox Rd., Paseo Way, McNeil St., La Mirada Dr., Piedmont Rd., Olney Ave., Lodge Ave., Steinway Dr., Sunrise Dr., Western Star Blvd., Agua Caliente Rd., 309th Ave., 333rd Ave., 335th Ave., 341st Ave., 347th Ave., 349th Ave., 355th Ave., 363rd Ave., 391st Ave., and 419th Ave.

## **Transportation Overlays**

The MSRP includes seven transportation overlays that are used to designate roadways for special purposes such as scenic corridors, public transit, use transportation-related technology, access or restriction of oversize vehicles, school safety areas, regionally significant roadways, and emergency evacuation routes.

### *Scenic/Recreational Overlay*

The scenic/recreational overlay acknowledges the need to minimize impacts to or preserve characteristics of a road's environment, or it recognizes a road's importance as access to recreational facilities. Characteristics such as design speeds,



right-of-way, cuts and fills, existing vegetation and viewsheds will be carefully analyzed. The entire length of Old U.S. 80 is designated as a scenic/recreational overlay.

### *Public Transportation Overlay*

The public transportation overlay identifies potential regional rail or bus rapid transit corridors. There are no roads in the planning area with a public transportation overlay.

### *AZTech Overlay*

The AZTech overlay identifies corridors where technology will be incorporated to improve transportation service. The AZTech overlay recognizes the special importance of transportation-related technology to monitor roadways, such as Intelligent Transportation Systems (ITS) used by ADOT. Valley commuters can access information online about existing traffic conditions along major freeways throughout the valley. Video cameras generate snapshots which are then used to identify the exact location and circumstances of anything affecting highway traffic. The snapshots are updated about every eight minutes. No roadways in the planning area are designated with the AZTech overlay.

### *Oversize Load Overlay*

The oversize load overlay identifies routes designed for use by oversize vehicles and restricted routes where oversize vehicle use is discouraged. An oversize load is defined as a vehicle having a gross weight of over 160,000 pounds or having dimensions larger than one of the following:

- 120 feet in length
- 14 feet in width
- 16 feet in height

No roadways in the planning area identified as being restricted by oversize vehicles, but Salome Highway and Baseline Rd. are identified as preferred routes by oversize vehicles.

### *School Safety Overlay*

The school safety overlay identifies sites where special design or operational criteria will be implemented to provide for safety. Palo Verde Rd. and Old U.S. 80, adjacent to Palo Verde Elementary School, are designated with the school safety overlay.

### *Roads of Regional Significance (RRS) Overlay*

The Roads of Regional Significance (RRS) concept and design guidelines were adopted by the MAG Regional Council in the spring of 1991, and by the Maricopa County Board of Supervisors in October 1992. Further analysis of this concept was completed in January 1996. The concept is a system of upgraded streets and roads



## INVENTORY AND ANALYSIS

to improve mobility in the urban areas, as well as into and out of the region. The adopted RRS concept includes Urban and Gateway routes. Urban routes are designed to complement the freeway system and are three to six miles apart. The concept facilitates the development of a system of routes with higher design standards and higher speeds that will help ensure regional mobility. Gateway routes provide access to the region and need protection to maintain free flow access in and out of the region. State Route 85 is the only road in the planning area with an RRS overlay. Outside of the planning area, Baseline Rd. east of State Route 85 is also designated with a RRS overlay.

### *Emergency Management Overlay*

The emergency management overlay is not defined in the MSRP, however is mentioned in the TSP. The emergency management overlay identifies roadways that are of special importance in case of emergencies or catastrophes at the Palo Verde Nuclear Generation Station. The northern portion of the planning area lies within the ten-mile radius surrounding the Palo Verde Nuclear Generation Station.

Old U.S. Highway 80, Interstate-10, Salome Highway, Dobbins Rd., Elliot Rd., Narramore Rd., Wintersburg Rd., and 355th Ave. are identified by the TSP as being emergency evacuation routes.

### **Interstate 10 - Hassayampa Valley Roadway Framework Study**

Meeting the demands for regional transportation has prompted the Maricopa Association of Governments (MAG) to prepare a study of Interstate-10 in western Maricopa County. Among its purposes, this study will identify potential interchanges along I-10 and State Route 85 thereby creating future north/south and east/west connections. The study will also investigate opportunities for alternative modes of transportation. The study is not limited to the possibility of adding more freeways/expressways, but includes other functional classifications as well. Although in the preliminary stages, the study identifies Sun Valley Parkway which turns into Palo Verde Rd. as a major parkway south of I-10. Major east/west connections to State Route 85 include potential bypass options for MC-85 along Southern Ave. and Old U.S. 80 which is designated as possible freeway. Finally, the study also identifies a potential freeway connection to I-10 near 339th Ave. extending south, through the planning area, to Gillespie Dam and turning east with a possible connection to State Route 85 along Riggs Rd. alignment.

### **MCDOT Bicycle Transportation System Plan**

The MCDOT Bicycle Transportation System Plan recognizes bicycling as a viable transportation mode and encourages improving the transportation network to increase access and safety for bicyclists. The standard cross section for all County arterial and collector streets includes bike lanes. Within the Old U.S. Highway 80 planning area, the MCDOT Bicycle Transportation System Plan identifies Old U.S.



Highway 80, Palo Verde Rd., and Baseline Rd. as components of the regional bicycle network.

## **Maricopa Association of Governments Transportation Plans**

The Regional Transportation Plan (RTP) was adopted on November 25, 2003 and represents the first comprehensive review of transportation investment needs for the region since the early 1960s. This plan is a comprehensive, performance based, multi-modal and coordinated regional plan, covering the period through Fiscal Year 2026. The RTP was developed under the direction of the Transportation Policy Committee, a public/private partnership charged with finding solutions to the Region's transportation challenges.

The Long Range Transportation Plan (LRTP) identifies specific transportation facilities and services to be constructed or provided in the next twenty years. The LRTP is updated annually and is fiscally constrained, so only includes projects for which funding is currently available or reasonably expected.

MAG's Transportation Improvement Program (TIP) is a five-year schedule of specific projects to be constructed across the Maricopa County region. In the current TIP (2006-2010) there are no proposed road improvements in the planning area, however nearby State Route 85 is scheduled for improvement by year 2010.

## **MCDOT Transportation Improvement Program**

Roadway investment decisions by MCDOT are based on a fundamental principle: to provide the right transportation system, at the right time, and for the right cost. To achieve this vision, Maricopa County develops an annual Transportation Improvement Program (TIP) to identify project funding priorities for the next five years. Each year new projects are added to the fifth year, while previously programmed projects move up a year in the schedule. As a structured finance plan, the TIP determines future road expansions and improvements. The 2006-2010 Transportation Improvement Plan identifies that the U.S. Highway 80 bridge at the Gila River is scheduled for rehabilitation which was originally constructed in 1929. The estimated completion date is 2008. MC 85 is also being considered for a corridor study, which will look at possible improvements, future right-of-way requirements, and design considerations.

## **Rural Maricopa County Transit Development Program**

In 1997, Maricopa County completed the Rural Maricopa County Transit Development Program. The purpose of this study is to identify transit needs and ways to provide additional transit options in rural Maricopa County. The study also identifies several important recommendations, including:

- Having Maricopa County serve as the lead agency in establishing public transit service from rural to urban areas.



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- Implementing a pilot transit program between Gila Bend, Buckeye, and Phoenix. Once operations prove successful; establish a similar program along the Wickenburg Highway.
- Continuing support for a regional transportation system through service coordination.

At this time there are no existing or proposed transit routes in the planning area.

### Existing Conditions

County-maintained roads in the planning area include Old U.S. 80, Salome Highway, Baseline Rd., Lower River Rd., Hazen Rd., Johnson Rd., Bruner Rd., Palo Verde Rd., Wilson Ave., Turner Rd., Dobbins Rd., Narramore Rd., 319th Ave., 351st Ave. (north of Dobbins Rd.), 355th Ave. (south of Dobbins Rd.), Arlington School Rd., Arlington Canal Rd., Desert Rose Rd., Agua Caliente Rd., Patterson Rd., and Woods Rd. As of July 2004, MCDOT maintained approximately 500 miles of unpaved roads in Maricopa County. There are many more unpaved private roads that are the responsibility of the property owners to maintain. MCDOT helps property owners establish improvement districts to manage and finance paving and maintenance projects.

#### *Average Daily Traffic and Peak Traffic Counts*

MCDOT provides average daily traffic count data for many major streets. **Table 11: Average Daily Traffic (ADT) Counts** summarizes average daily traffic count information for the Old U.S. Highway 80 study area. **Table 12: Peak Traffic Counts** summarizes peak traffic count information for the study area.

#### *Dust Abatement*

MCDOT paves many county maintained roads to help reduce dust. The Environmental Protection Agency (EPA) imposed the 1998 Federal Implementation Plan for PM<sub>10</sub> nonattainment in Maricopa County, requiring dust control measures for publicly maintained roads with more than 250 vehicles per day. The EPA indicated in 1999 that the measures submitted with the Serious Area Plan for PM<sub>10</sub> were inadequate and needed additional measures. Maricopa County proceeded to obtain MAG approval for CMAQ (Congestion Management and Air Quality) funding to assist with paving dirt roads, and has included this as a committed measure in the revised serious area plan submitted in February 2000. Maricopa County's PM<sub>10</sub> traffic volume standard was changed June 10, 2004, to require County-maintained dirt roads to be evaluated for paving if 150 vehicles or more per day use the road.

### Inventory of the Existing Transportation System

In general, the Maricopa County roadway system is based on a grid pattern with arterials spaced at one-mile intervals. Currently, the Old U.S. Highway 80 planning area roadway network mainly consists of minor collectors or local roadways. Future classifications are based upon the Maricopa County MSRP discussed earlier. Using





**Table 11: Average Daily Traffic (ADT) Counts**

Street	Direction	Street	ADT 2000	ADT 2004	% Change
Elliot Rd.	W	355th Ave.	151	275	82%
Elliot Rd.	W	383rd Ave.	79	162	105%
Old U.S. 80	S	Agua Caliente Rd.	379	403	6%
Old U.S. 80	N	Agua Caliente Rd.	389	541	39%
Old U.S. 80	E	Arlington Rd	204	985	383%
Old U.S. 80	N	Desert Rose Rd.	403	346	(14%)
Old U.S. 80	S	Patterson Rd.	255	416	63%
Old U.S. 80	N	Patterson Rd.	185	381	106%
Salome Highway	N	Baseline Rd.	1,421	1,610	13%

Source: Maricopa County Department of Transportation

**Table 12: Peak Traffic Counts**

Street	Direction	Street	Direction of Travel	Peak AM Hour	Peak AM Volume	Peak PM Hour	Peak PM Volume
Elliot Rd.	W	355th Ave.	Both	6:00	36	4:00	19
Elliot Rd.	W	383rd Ave.	Both	8:00	16	4:00	18
Old U.S. 80	S	Agua Caliente Rd.	Both	9:00	34	4:00	29
Old U.S. 80	N	Agua Caliente Rd.	Both	6:00	46	3:00	45
Old U.S. 80	E	Arlington Rd.	Both	11:00	88	2:00	82
Old U.S. 80	N	Desert Rose Rd.	Both	8:00	34	1:00	23
Old U.S. 80	S	Patterson Rd.	Both	7:00	33	1:00	37
Old U.S. 80	N	Patterson Rd.	Both	10:00	33	2:00	40
Salome Highway	N	Baseline Rd.	Both	6:00	120	5:00	141

Source: Maricopa County Department of Transportation



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national classification terminology, these functional classifications are based on the trips served and the operational characteristics of roads. Existing roadways in the planning area and their current functional classification and future classification are included in **Table 13: Roadway Classification**.

### *Bicycle and Pedestrian Facilities*

Bicyclists and pedestrians have access to all public road rights-of-way in the planning area. In most cases, bike lanes or shoulders will be added during construction, reconstruction, or widening of existing roadways. However, there is currently no continuous or integrated bikeway or pedestrian system serving the entire study area. As mentioned earlier, the MCDOT Bicycle Transportation System Plan identifies Old U.S. Highway 80, Palo Verde Rd., and Baseline Rd. as components of the regional bicycle network.

### *Existing Transit and Rail Services*

There are currently no local bus routes serving the area. However, beginning on October 3, 2005 a new regional bus route offering service from Ajo and Gila Bend to Phoenix will be operated by Ajo Transportation. Some buses along the same route will also make stops in Buckeye. The route will also feature a roundtrip “express” in which routes will run north in the afternoon and south in the morning. This express route will only run two times a week.



**Table 13: Roadway Classification**

Road	Current Functional Classification	Future Classification
Old U.S. Highway 80	minor collector	principal arterial
Salome Highway	minor collector	principal arterial
Baseline Rd.	minor collector	minor arterial
Dobbins Rd.	minor collector	minor arterial
Elliot Rd.	minor collector	minor arterial
Narramore Rd.	minor collector	minor arterial
Hazen Rd.	local street	minor arterial
Enterprise Rd.	local street	minor collector
Patterson Rd.	local street	minor arterial
Woods Rd.	local street	minor collector
Fornes Rd.	local street	minor collector
Pierpoint Rd.	local street	minor collector
El Paso Natural Gas Rd.	local street	minor collector
Turner Rd.	minor collector	minor arterial
Wilson Rd.	minor collector	minor arterial
Palo Verde Rd.	minor collector	minor arterial
Bruner Rd.	minor collector	minor arterial
Johnson Rd.	minor collector	principal arterial
Wintersburg Rd.	minor collector	minor arterial
331st Ave.	local street	minor collector
351st Ave.	local street	minor arterial
399th Ave.	local street	minor arterial
411th Ave.	local street	minor arterial

Source: Maricopa County Department of Transportation, Transportation System Plan



## ENVIRONMENT / ENVIRONMENTAL EFFECTS

This section combines an overview of the study area's physical and natural environment with the state-mandated Environmental Effects element. The Environmental Effects element complies with requirements of the Growing Smarter Act, and helps ensure that planning for future development in Maricopa County is consistent with federal, state, and local requirements. This section addresses anticipated effects that development may have on air quality, water quality, noise abatement, visual quality, and sensitive plant and wildlife species. The report is organized into the following sections:

### Physical Environment

- Physical Setting
- Topography
- Climate
- Soils
- Geology
- Vegetation
- Wildlife

### Environment Effects

- Sensitive Species and Habitat
- Visual Character
- Air Quality
- Noise
- Archeology
- Water Quality
- Energy Service Providers





### Physical Environment

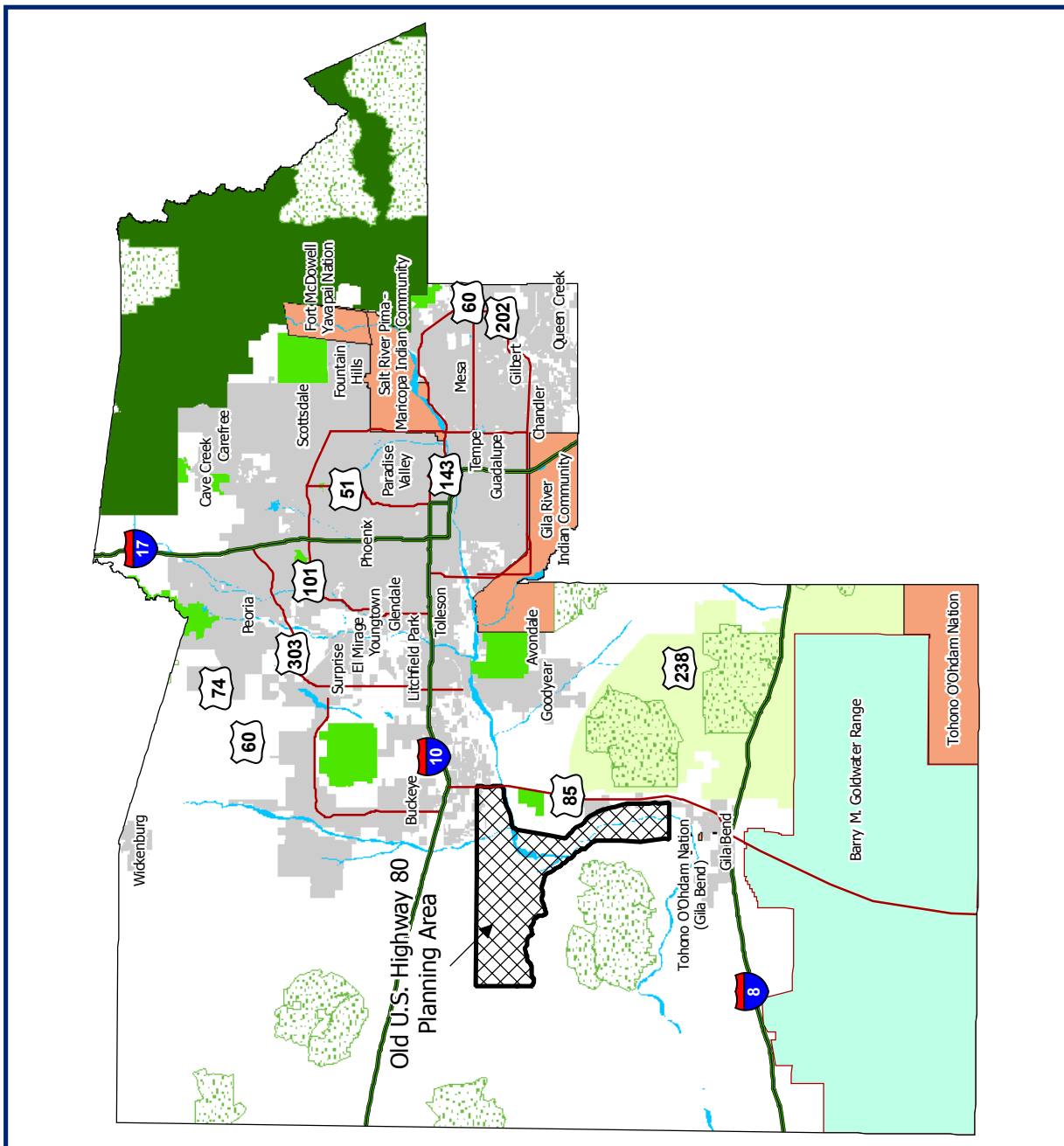
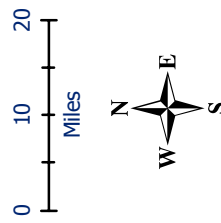
#### *Physical Setting*

The Old U.S. Highway 80 Planning Area is located in the southwest region of Maricopa County (**Figure 8-Physical Setting**). In the western portion of the Old U.S. Highway 80 planning area, power plants are surrounded by undisturbed natural desert and mountainous scenes dominate the western and southern views. Most of the northeastern section of the planning area is comprised of farmland with scattered low-density residential. Along the Gila River, the landscape mainly consists of riparian vegetation like mesquite along waterways. The planning area is gently sloped and drains east towards the Gila River. Striking mountain ranges such as the Buckeye Hills to the east, and Signal Mountain and Woolsey Peak Wilderness Areas to the south and west dominate the landscape of the planning area. Much of the Old U.S. Highway 80 area is covered with small to medium-sized washes.

# Physical Setting

Figure 8

- Legend**
-  Freeway / Highway
  -  Interstate
  -  Old U.S. Highway 80 Area Plan
  -  River / Major Washes
  -  Barry M. Goldwater Range
  -  Indian Community
  -  Wilderness Areas
  -  Sonoran Desert National Monument
  -  County Parks
  -  Tonto National Forest
  -  Incorporated



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 August 2006



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### *Topography*

**Figure 9-Elevation** depicts general elevations within the planning area, which range from less than 800 feet above sea level along the Gila River, to about 1,500 feet above sea level near the Buckeye Hills and eastern portions of the Gila Bend Mountains. The planning area can be characterized as a winding river valley near Buckeye Hills, the Signal Mountain and Woolsey Peak Wilderness Areas, and the North Maricopa Mountains Wilderness. The northern portion of the planning area slopes less than one percent over nearly sixteen miles as measured from east to west, except the Buckeye Hills area which exceeds 15% slopes. Similarly, in the southern portion of the planning area, the river valley slopes less than one percent from north to south, with the exception of the Woolsey Peak Wilderness Areas which also exceed 15% slopes (see **Figure 12-Floodplains and Topography**).

### *Climate*

Generally, climate in the planning area is similar to the Phoenix metropolitan area with mild fall, winter, and spring seasons and hot, dry summer weather. Any differences that do occur are due to its location on the urban fringe. Over the past 30 years, precipitation has averaged 5.91 inches per year compared with 8.29 inches for Phoenix. Precipitation can be three times greater in wet years than in dry years. Most of the precipitation occurs in the winter months and in July, August, and September. From mid to late summer, moist air from the Gulf of Mexico influences weather patterns. From November through March, the region is impacted by storm systems from the Pacific Ocean and the northwest United States. Storms in both seasons can create flooding and drainage problems depending on their intensity and duration.

The average high temperature for the planning area is 86 degrees, compared to 84.3 degrees for Phoenix. **Table 14: Average Monthly Climate** summarizes monthly temperature and precipitation levels in the planning area.

### *Soils*

Soil types and their location have a direct effect on potential land uses. Development type, quality, and character can be significantly influenced by soil properties. Important soil properties include permeability, compaction, shear strength, shrink-swell potential, plasticity, salinity, susceptibility to erosion, corrosiveness, and the amount and type of cementation.







Soil types are categorized by *association*. Soil associations describe a group of soils that occur in a repeating pattern, and usually consist of one or more dominant soil along with at least one minor soil. The association is typically named for the major soil it represents. There are seven major soil associations in the Old U.S. Highway 80 study area (the Cherioni-Hyder-Cipriano and Pahaka-Estrella-Antho soil associations are outside the planning area but are included for the purpose of illustrating on Figure 10) and their characteristics are described later in this section.

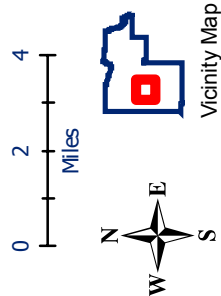
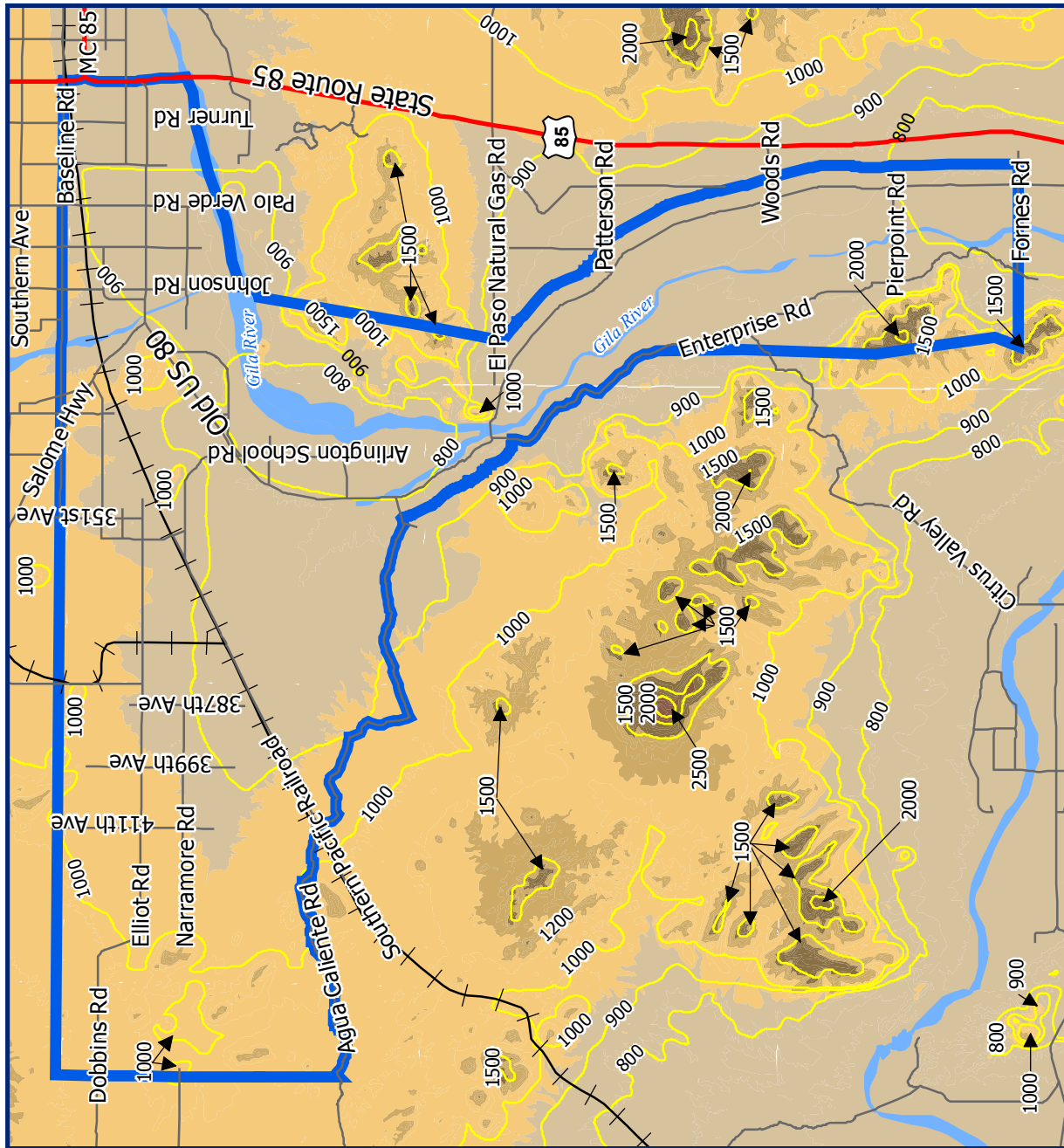


# Elevation

## Figure 9

### Legend

-  Arterial Roadway
-  Highway
-  Railroad
-  Contour Lines (Units in Feet)
-  Old U.S. Highway 80 Area Plan
-  River



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**Table 14: Average Monthly Climate**

Month	Average Maximum Temperature (F)	Average Minimum Temperature (F)	Average Total Precipitation (inches)
January	66	38	1.0
February	70	41	.78
March	76	45	.87
April	85	50	.11
May	94	60	.04
June	104	69	.01
July	107	77	.38
August	105	76	.98
September	99	67	.19
October	89	55	.24
November	75	43	.59
December	66	37	.72
Annual	86	55	5.91

Source: [www.weather.com](http://www.weather.com), information based on 30 year average for zip code 85354.





Soil characteristics vary by soils association, therefore testing should be done prior to development to determine if soils pose problems for septic tanks, water and sewer lines, and/or building and road foundations. In the planning area, alluvial soils prohibit seepage pit type septic systems because of potential contamination of the water table. Therefore, shallow trench systems are required in the planning area. Seepage pits are only allowed if specially engineered and must pre-treat the effluent before disposing to the pit. **Figure 10–Soils Association** illustrates the ten major soil associations in the planning area. These soils and their characteristics are as follows:

1. Carrizo-Brios-Antho Association: High infiltration rates. Soils are deep and excessively drained on floodplains, alluvial fans, stream channels, and low stream terraces.
2. Cherioni-Hyder-Cipriano Association: Shallow and very shallow, somewhat excessively drained, nearly level to very steep, very gravelly and extremely gravelly, loamy soils; on volcanic mountains, hills, and basalt flows.
3. Denure-Mohall-Laveen Association: Deep and moderately deep, well drained, nearly level, on fan terraces and basin floors.
4. Gilman-Lagunita-Indio Association: Deep, well drained, nearly level, loamy soils and areas of river wash; on flood plain.
5. Gunsight-Rillito-Chuckawalla Association: Deep and moderately deep, moderately drained, nearly level to moderately steep, gravelly to extremely gravelly, loamy soils; on fan terraces.

# Soil Association

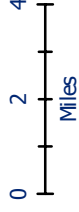
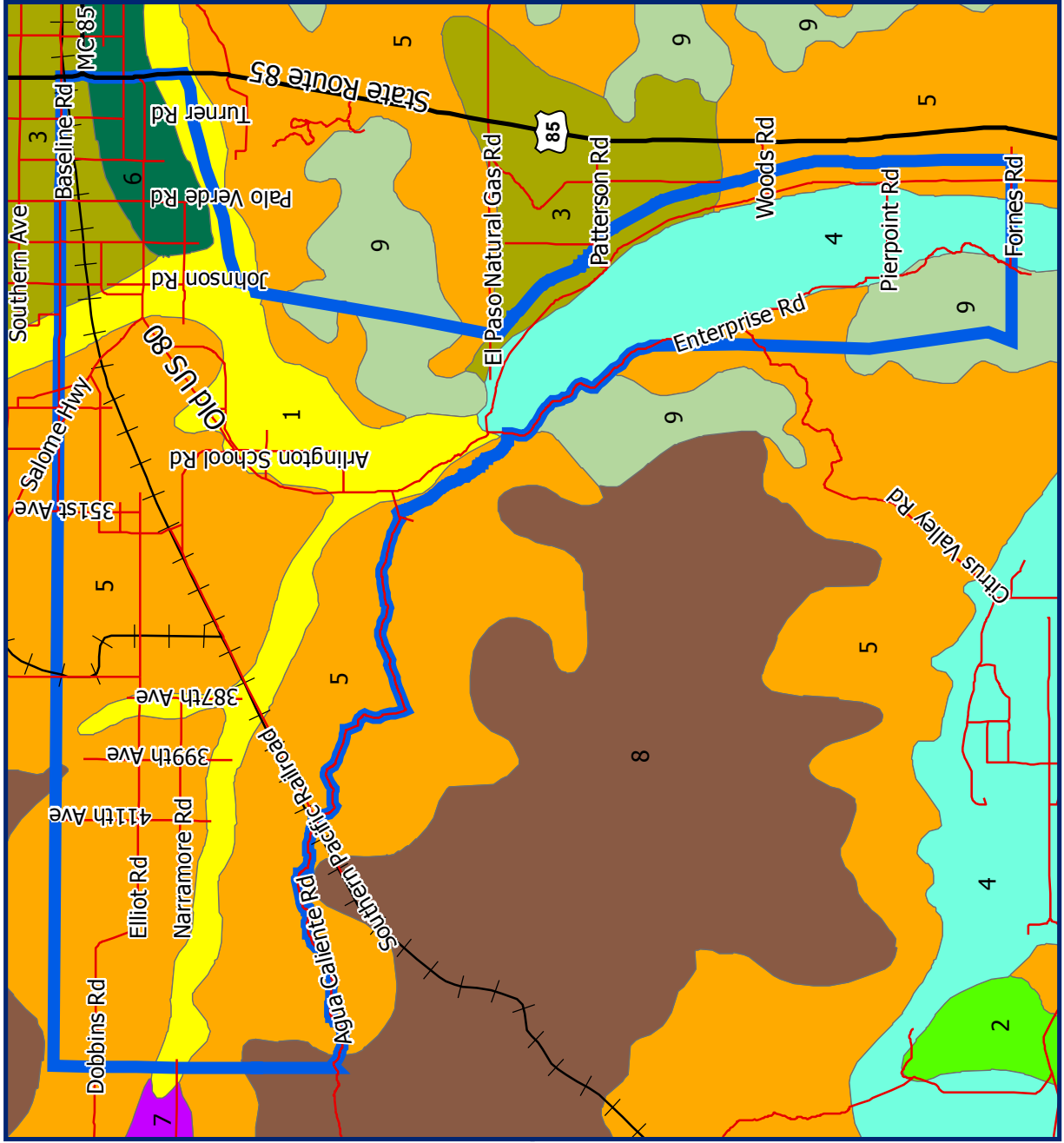
Figure 10

## Legend

-  Arterial Roadway
-  Highway
-  Railroad
-  Old U.S. Highway 80 Area Plan

## Soil Associations

-  1 Carrizo-Brios-Antho
-  2 Cherioni-Hyder-Cipriano
-  3 Denure-Mohall-Laveen
-  4 Gilman-Lagunita-Indio
-  5 Gunsight-Rillito-Chuckawalla
-  6 Marana-Sasco-Denure
-  7 Pahaka-Estrella-Antho
-  8 Quilotosa-Gachado-Hyder
-  9 Quilotosa-Vaiva-Rock outcrop



Vicinity Map

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6. Marana-Sasco-Denure Association: Deep and moderately deep, moderately drained soils consisting of deep, coarse, loamy material formed in mixed recent alluvium on floodplains, low terraces, and alluvial fan.
7. Pahaka-Estrella-Antho Association: Deep and moderately deep, moderately drained, coarse.
8. Quilotosa-Gachado-Hyder Association: Dominant strongly sloping to steep, very gravelly, loamy soils on hills and mountain slopes.
9. Quilotosa-Vaiva-Rock outcrop Association: Shallow to deep, somewhat excessively drained, nearly level to steep, very gravelly and extremely gravelly, loamy soils and areas of rock outcrop; on fan terraces, granitic mountains, and hills.

Soil association data was collected by using the State Soil Geographic (STATSGO) database. STATSGO soil maps are produced by generalizing the detailed soil survey data. The level of mapping is designed to be used for broad planning and management uses covering state, regional, and multi-state areas.

The four primary soil properties that effect development suitability are permeability, available water capacity, shrink-swell potential, and corrosivity. **Table 15: Soil Association Development Constraints** categorizes the degree of constraint associated with the type of development activity for each soil association.

### Permeability

Refers to the rate at which water moves through soil and is usually determined by soil texture. Soils with slow permeability pose severe limitations for septic tank absorption fields. Soils with slow permeability do not allow adequate absorption of effluent from tile or perforated pipe into natural soil.

### Available Water Capacity

Refers to the amount of water a soil can hold which is available for plants. The ability of soil to hold water helps determine the type of plants that can be used for landscaping and lawns. It should be noted that these soil limitations do not prevent the use of imported topsoil for landscaping purposes provided that it has a high available water capacity.

### Shrink-Swell Potential

Identifies the capacity of a soil to expand or shrink as the moisture content is increased or decreased. Soils with a high percentage of clay tend to have a high shrink-swell capacity, which can contribute to structural problems for buildings and roads.



**Table 15: Soil Association Development Constraints**

<b>Soil Association</b>	<b>Dwellings without basements</b>	<b>Dwelling with basements</b>	<b>Small commercial buildings</b>	<b>Local road and streets</b>	<b>Lawns and landscape</b>	<b>Septic tank absorption fields</b>
1. Carrizo-Brios-Antho	Severe	Severe	Severe	Moderate	Severe	Severe
2. Cherioni-Hyder-Cipriano	Severe	Severe	Severe	Severe	Severe	Severe
3. Denure-Mohall-Laveen	Slight	Slight	Slight	Slight	Moderate	Slight
4. Gilman-Lagunita-Indio	Severe	Severe	Severe	Moderate	Slight	Moderate
5. Gunsight-Rillito-Chuckwalla	Moderate	Moderate	Severe	Moderate	Severe	Moderate
6. Marana-Sasco-Denure	Moderate	Moderate	Moderate	Severe	Slight	Severe
7. Pahaka-Estrella-Antho	Slight	Moderate	Slight	Slight	Moderate	Severe
8. Quilotosa-Gachado-Hyder	Severe	Severe	Severe	Severe	Severe	Severe
9. Quilotosa-Vaiva-Rock outcrop	Severe	Severe	Severe	Severe	Severe	Severe

Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey of Maricopa County, Central Part (1977) and Soil Survey of Gila Bend-Ajo Area (1997)

### Corrosivity

Refers to a soil’s capacity to induce chemical reactions that will corrode or weaken metals and concrete. Corrosive soils may create problems for underground utilities if installed unprotected.

### *Geology*

The Old U.S. Highway 80 planning area lies within the Sonoran desert region of the Basin and Range geographic province. The region is characterized by alluvial fan, terrace, and basin floor deposits surrounded by rugged, low to high relief mountain ranges which include a wide variety of granitic rocks and volcanic rocks. The planning area is bordered by the Palo Verde Hills to the northwest and the Signal Mountain and Woolsey Peak Wilderness Areas to the south. These low relief hillsides and mountainous areas are generally composed of lava, tuff, and fine grained intrusive rock which include basalt, andesite, dacite, and rhyolite. Bordered by the Buckeye Hills and North Maricopa County Mountains to the east, these mountains are generally composed of granitic rock. Eastern portions of the Woolsey Peak Wilderness Area are also composed of granitic rock.

Geology in the low lying areas (especially north of Gillespie Dam) which are generally less than 1,000 feet in elevation consist of poorly sorted, moderately bedded gravel and sand, as well as basin floor deposits that are primarily sand, silt, and clay. Unconsolidated deposits of fine-grained well sorted sediment and gravelly channel, terrace, and alluvial-fan deposits on middle and upper piedmonts can be found in this area to a lesser degree. Sand, silt, and clay make up the floodplains of the Gila River, while unconsolidated to weakly consolidated sand and gravel are





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found in the river channels. South of the Gila River as the land slopes upward into the Buckeye Hills, a wide variety of granitic rocks, including granite, granodiorite, tonalite, quartz diorite, diorite, and gabbro, are found. These rocks can also be found in the North Maricopa Mountains and in the Signal Mountain and Woolsey Peak Wilderness Areas located farther south bordering the planning area.

At the southern foot of the Buckeye Hills and extending south along the Gila River, geologic features include coarse, poorly sorted alluvial-fan and terrace deposits on middle and upper piedmonts and along large drainages; sand, silt, and clay on floodplains; and wind-blown sand deposits.

### *Vegetation*

Vegetation within the planning area is composed mainly of Lower Colorado River Sonoran Desert scrub. Three native plant communities can be found in this area: Palo Verde-Saguaro, Creosote, and Riparian.

The Palo Verde-Saguaro Community, the most scenic of the Sonoran Desert communities, is found in the undeveloped mountainous areas within and near the study area. Trees in the Palo Verde-Saguaro Community include palo verde (*Cercidium* spp.), catclaw (*Acacia* spp.), and mesquite (*Prosopis* spp.). Shrubs found in this community are creosote (*Larrea tridentate*), bursage (*Ambrosia deltoidea*), and saltbush (*Atriplex* spp.). Cacti include giant saguaro (*Carnegiea gigantea*), barrel (*Ferocactus acanthodes*), hedgehog (*Echinocereus engelmannii*), prickly pear (*Opuntia* spp.), and cholla (*Opuntia* spp.). This vegetative community supports a number of diverse wildlife species, provides scenic enhancement to the area, and should be protected wherever possible.

The Creosote Community, located in valleys and on the lower, more arid portions of the study area, creates a uniform landscape over large areas. Larger trees, shrubs, and cacti are absent, except along washes where ironwood (*Olneya tesota*), mesquite, palo verde, and catclaw may grow. The ironwood plays an important role in supporting the biodiversity of over 500 Sonoran Desert plant and animal species.

The Riparian Community is found along the Gila River as it runs first west, then south until reaching the Gillespie Dam area. The most notable areas for riparian vegetation and wildlife are in the vicinity of the Gillespie Dam and the Arlington and Powers Butte Wildlife Areas. Riparian habitat provides abundant, lush vegetation that supports local wildlife and fish species, as well as those wildlife species traveling through the area. The Gila River drainage corridor is an environmentally sensitive area and should be considered for protection as development occurs. The Riparian Community is concentrated along drainage channels and is generally composed of tall dense stands of mesquite, catclaw, desert willow (*Chilopsis linearis*), blue palo verde, Goodding willow (*Salix gooddingii*), and cottonwood (*Populus fremontii*). The Riparian Community along the Gila River includes plant species not found elsewhere in the planning area, such as salt cedar (*Tamarix*





chinensis), velvet mesquite (*Prosopis velutina*), saltbush (*Atriplex* spp.), and seepweed (*Suaeda torreyana*). Currently salt cedar dominates much of the riparian and wetland in the study area. Salt cedar was originally imported from Europe in the nineteenth century for use in erosion control. Difficult to eradicate, salt cedar stands have lower wildlife value than native riparian species. However, they provide high-quality nesting sites for white-winged doves (*Zenaida asiatica*). Maricopa County supports the removal of salt cedar trees and the reintroduction of native species to riparian areas such as cottonwood and willow trees along the Gila River. The Riparian Community has high scenic value and is unique within the desert. To help with erosion control, natural flood control, and as wildlife habitat, efforts should be made to protect these areas.

The State of Arizona's Native Plant Law (Arizona Revised Statutes, Title 3, Chapter 7, Article 1 53-901) protects all cacti, the soap-tree yucca, the ocotillo, the Mexican jumping bean, mesquite, palo verde, and ironwood from collection. There may be particular native plant species that by law can only be moved from one location to another after applying for a state permit. Removing or destroying protected species from public and private property requires notification to the Arizona Department of Agriculture. Some protected plants within this area include:

#### Trees and Shrubs

- Agave (Century Plant)
- Crucifixion Thorn/Desert Holly
- Desert Spoon (Sotol)
- Ironwood Tree
- Jerusalem Thorn
- Mesquite
- Ocotillo
- Palo Verde
- Smoke Tree
- Yucca

#### Cacti

- Cacti Barrel
- Cholla
- Hedgehog
- Mammillaria
- Night Blooming Cereus
- Pin Cushion
- Prickly Pear
- Saguaro

#### *Wildlife*

Common wildlife species found in the desert areas, mountainous areas, and agricultural areas of the study area include desert cottontail (*Sylvilagus audubonii*), round-tailed ground squirrel (*Spermophilus tereticaudus*), desert pocket mouse (*Perognathus amplus*), desert kangaroo rat (*Dipodomys deserti*), curved-bill thrasher (*Toxostoma curvirostre*), banded sand snake (*Chilomeniscus cinctus*), Southwestern willow flycatcher (*Empidonax traillii extimus*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum*), Harris' hawk (*Parabuteo unicinctus*), javelina (*Tayassu tajacu*), mule deer (*Odocoileus hemionus*), desert bighorn sheep (*Ovis canadensis*), and coyote (*Canis latrans*).

Riparian habitat provided by water in the Gila River is a major resource that supports a large number of mammals, reptiles, and birds not usually found within



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the Lower Colorado River Sonoran Desertscrub area. The predominance of woody vegetation creates hiding places, roosting perches, and thermal cover, and the readily available water in the stream channel provides a vital ingredient for wildlife survival. **Table 16: Riparian Species** summarizes the riparian wildlife in the planning area.

### Environmental Effects

#### *Sensitive Species and Habitat*

The Arizona Game and Fish Department's (AGFD) Heritage Data Management System lists the following sensitive species that may inhabit in the planning area (**Table 17-Sensitive Species**).

Wildlife corridors connecting important desert bighorn sheep habitat between portions of the Buckeye Hills and the Gila Bend Mountains should be maintained to facilitate wildlife movement between these habitats. Major dry watercourses, as well as the Gila River, should be maintained for their value to wildlife as movement corridors and habitat protection.

As the Arizona Department of Transportation continues with the State Route 85 widening project, some wildlife species may be forced to abandon their habitat and move into areas within the Old U.S. Highway 80 planning area. Desert bighorn sheep and wildlife of special concern species such as the Sonoran desert tortoise, the Western yellow-billed cuckoo, and the Yuma clapper rail may be affected, as might the cave myotis.

#### *Visual Character*

Visual resources in the planning area range from sparsely vegetated areas to open farmland with scattered low-density rural residential to sandy-bottomed washes lined with desert trees and shrubs and an extensive stand of salt cedar along riparian washes and riverbanks. The overall visual character is composed of gently rolling desert with few significant hills, although dramatic mountain vistas can be viewed in nearly every direction. The following visual characteristics are described as viewed primarily from Old U.S. Highway 80, Gillespie Dam, and Pierpoint Rd.

Primary visual elements in foreground areas from Old U.S. Highway 80 between Turner Rd. and Palo Verde Rd. include newly paved sections of road leading to new custom built homes typically on one acre lots or greater. Many of the local and collector roads include wide shoulders giving way to vast stretches of farmland for egg farming, dairy, and growing various crops. On any given day, heavy farm equipment can be seen traveling local roads, especially along Hazen Rd. Middle ground areas still include homes surrounded by open farmland. In the distant background are views of White Tank Mountain to the north, the Signal Mountain and Woolsey Peak Wilderness Areas to the south, the Palo Verde Hills to the west, the Buckeye Hills to the east, and the North Maricopa Mountains to the southeast.



**Table 16: Riparian Species**

Taxonomy	Common Name	Scientific Name
Fish	Sonora Sucker	<i>Catostomus insignis</i>
	Desert Sucker	<i>Catostomus clarki</i>
	Threadfin Shad	<i>Dorosoma petenense</i>
	Carp	<i>Cyprinus carpio</i>
	Eastern Channel Catfish	<i>Ictalurus punctatus</i>
	Gila Topminnow	<i>Poeciliopsis occidentalis</i>
	Razorback sucker	<i>Xyrauchen texanus</i>
	Desert Pupfish	<i>Cyprinodon macularius</i>
Mammals	Black-tailed Jackrabbit	<i>Lepus californicus</i>
	Beaver	<i>Castor canadensis</i>
	Raccoon	<i>Procyon lotor</i>
	Badger	<i>Taxidea taxus</i>
	Bobcat	<i>Lynx rufus</i>
Reptiles and amphibians	Tiger Salamander	<i>Ambystoma tigrinum</i>
	Leopard Frog	<i>Rana pipiens</i>
	Bullfrog	<i>Rana catesbeiana</i>
	Common Kingsnake	<i>Lampropeltis getulus</i>
	Checkered Garter Snake	<i>Thamnophis marcianus</i>
Birds	Double Crested Cormorant	<i>Phalacrocorax auritus</i>
	Green Heron	<i>Butorides virescens</i>
	Great Blue Heron	<i>Ardea herodias</i>
	Snowy Egret	<i>Egretta thula</i>
	Clapper Rail	<i>Rallus longirostris</i>
	Cooper's Hawk	<i>Accipiter cooperii</i>

**Table 17: Sensitive Species**

Common Name	Scientific Name	Federal Status*	State Status*
Sonoran Desert Tortoise	<i>Gopherus agassizii</i>	SC	WSC
Western Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	C; S (USFS)	WSC
Yuma Clapper Rail	<i>Rallus longirostris yumanensis</i>	LE	WSC
Lowland Leopard Frog	<i>Rana yavapaiensis</i>	SC; S (USFS)	WSC
Roundtail Chub	<i>Gila robusta</i>	SC; S (USFS)	WSC
Desert Sucker	<i>Catostomus clarki</i>	SC; S (BLM)	N/A
Sonora Sucker	<i>Catostomus insignis</i>	SC; S (BLM)	N/A
Desert Pupfish	<i>Cyprinodon macularius</i>	LE	WSC
Gila Topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	LE	WSC
Razorback Sucker	<i>Xyrauchen texanus</i>	LE; S (USFS)	WSC
Cave Myotis	<i>Myotis velifer</i>	SC; S (BLM)	N/A

\*Status Explanations:

Federal:     **LE** = listed as endangered under the Federal Endangered Species Act  
                   **SC** = Species of Concern (USFWS)  
                   **C** = Candidate Endangered or Threatened (USFWS)  
                   **S** = Sensitive (USFS or BLM)

State:         **WSC** = wildlife species of concern in Arizona (AGFD)  
                   **HS** = highly Safeguarded; no collection allowed (Arizona Native Plant Law)



## INVENTORY AND ANALYSIS



North of Old U.S. 80 in northeast portion of planning area



Looking north from Old U.S. 80 Bridge to Gillespie Dam

The primary foreground elements from the Old U.S. 80 Bridge are the Gila River and the Gillespie Dam. This area includes the Arlington Wildlife Area which is discussed in more detail in the Open Space section. On one particular day, staff observed someone fishing along the river. The site is dominated by the dam and its outfall components; a pumping station now diverts water from the Gila River into a nearby canal for agricultural uses to the south. Residential uses exist approximately two miles north of the dam, however cannot be seen due to hillside. Similarly, no residential uses exist for nearly five miles south of the dam. Middle ground is dense desert vegetation with trees and occasional Saguaro cactuses. The distant background features similar mountain views, however the Buckeye Hills and Gila Bend Mountains are within one mile.

At Old U.S. Highway 80 and near Pierpoint Rd., the primary foreground element is farmland, in some instances desert trees and shrubs are being grown for residential landscaping. No structures are nearby and relatively sparse desert vegetation covers the area. At this intersection, heavy equipment for bailing hay can be seen. Middle ground is dominated by more farmland, while distant views of mountains can be seen to the north and west from this location, particularly the Gila Bend Mountains. Traffic on State Route 85 can also be seen which is one mile to the east.

### *Air Quality*

The Environmental Protection Agency (EPA) is the federal agency in charge of setting air quality standards to protect public health and welfare. National Ambient Air Quality Standards (NAAQS) have been set for six criteria pollutants: carbon monoxide, nitrogen dioxide, particulate matter, ozone, sulfur dioxide, and lead. States are required to adopt ambient air quality standards, which are at least as stringent as the federal NAAQS for the six criteria pollutants. The Arizona Department of Environmental Quality (ADEQ) is the state agency responsible for compliance and enforcement for all portable sources of air pollution within the state and all stationary sources outside Maricopa, Pinal, and Pima counties. The Maricopa Association of Governments is responsible for maintaining plans and addressing



problems with carbon monoxide (CO), ozone (O<sub>3</sub>), and particulate matter (PM<sub>10</sub>) within Maricopa County. The Maricopa County Environmental Services Department issues air quality permits to regulated businesses, monitors ambient air for pollutants, writes the Maricopa County Air Pollution Control Rules & Regulations, and determines facility compliance. The Department sets the long-range direction for clean air within Maricopa County.

The EPA normally designates nonattainment areas only after air quality standards are exceeded for several consecutive years. Maricopa County has been designated as a nonattainment area for CO, O<sub>3</sub>, and PM<sub>10</sub>. The Old U.S. Highway 80 planning area lies within the nonattainment boundary.

Carbon monoxide is an odorless, colorless, toxic gas formed when carbon-containing compounds or fuels are burned incompletely. Potential primary sources of CO in the planning area are on-road mobile sources (e.g. automobiles and trucks), non-road mobile sources (e.g. lawn and garden equipment, construction, farm, and recreational equipment), and area sources (e.g. fuel combustion, open burning, fire places, and woodstoves). The EPA classified all of Maricopa County as a serious CO nonattainment area in June 1996. CO pollution can reach unhealthy levels in Maricopa County during the winter months.

At ground level, ozone (O<sub>3</sub>) is a primary component of photochemical smog. It presents a serious health threat to people suffering from respiratory disease. The primary emission sources include volatile organic carbons and nitrogen oxides from nonroad, area, motor vehicle and biogenic sources (certain types of vegetation including citrus and eucalyptus). O<sub>3</sub> can reach unhealthy levels in Maricopa County during the summer months.

PM<sub>10</sub> refers to fine particulate matter suspended in the atmosphere. These particles have a diameter equal to or less than 10 micrometers. When inhaled, the fine particles can be deposited in the lungs, resulting in difficult breathing, bronchitis, aggravation of existing respiratory diseases, and permanent lung damage. Earthmoving and windblown emissions from unpaved roads and parking lots, agricultural areas, construction sites, and disturbed open areas are the predominate causes of exceedences of air quality standards. Maricopa County's PM<sub>10</sub> traffic volume standard was recently changed to require dirt road paving of County-maintained roads if 150 vehicles or more per day use the roadway. In 1996, the EPA classified Maricopa County as a serious PM<sub>10</sub> nonattainment area. The closest PM<sub>10</sub> air monitoring site to the planning area is at the intersection of State Route 85 and MC 85 in Buckeye. To date, no roads in the planning area have required paving due to PM<sub>10</sub> pollutants; however roads like Carver Rd. in the Buckeye area have been studied due to the need to reduce dust in neighborhoods.

In the Old U.S. Highway 80 planning area, the main sources of dust include unpaved roads; trucks, ATVs and other traffic; corrals and arenas; and construction





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sites. Maricopa County has implemented several air pollution control programs including a Clean-Burning Fireplace Ordinance, Clean Burning Gasoline, Fugitive Dust, and Vehicle Emissions Inspection programs.

### *Noise*

Prolonged exposure to loud noise can cause general community annoyance and reductions in property values. Based on site visits, the area is mostly quiet with the exception of vehicular traffic in the planning area and along the nearby State Route 85. Other sources of noise may include all-terrain vehicle (ATV) use, construction sites, and possible noise from special uses permitting loud gatherings. Several airports within the vicinity of the planning area such as Buckeye Municipal Airport and Gila Bend Municipal Airport, and Luke Air Force Base have major flight paths over the planning area enroute to the Barry M. Goldwater Range.

### *Archaeology*

Arizona, and especially Maricopa County, has one of the highest concentrations of archaeological sites in the United States and possibly the world. There have been over 800 Hohokam sites recorded just within the Salt River Valley. The State Historic Preservation Office (SHPO) has detailed information on file for site locations and surveys that have been conducted in the planning area. The SHPO, in cooperation with federal, state and other agencies is developing a statewide electronic database to provide comprehensive survey information of all historic sites in Arizona. For resource protection, only members of federal, state, or local government agencies can examine the files. If a federal or state agency is involved in a project that will affect an undisturbed area, that agency is required to consult with the SHPO to determine if any historic or archeological properties exist in the project area and/or if a survey is necessary.

Given the high potential for sensitive sites, prior to development, excavation, or grading an archaeological/historical review should be performed to determine an area's full archaeological potential, and preservation precautions should be taken where necessary. On private property, Arizona state law requires the landowner to notify the Arizona State Museum of the discovery of human remains at least 50 years old or of the intent to disturb a known burial site.

Although no field survey of the entire county has been conducted, in general, the Gila River and Salt River valley supported a large variety of encampments, including Hohokam villages, ballcourts, and several irrigation canals built near the river. A cultural resources survey was performed in 1995 by the Arizona Department of Transportation along the State Route 85 right-of-way. Sixty-six new cultural sites were located and recorded. Of these new sites, 48 contained trails or trail segments with associated artifacts and features. The remaining sites consisted of prehistoric artifact scatters and historic features or structures.





## *Water Quality*

The entire Old U.S. Highway 80 planning area lies within the Hassayampa Subbasin, West Salt River Valley Subbasin, and Gila Bend Basin which are located in the southwestern part of Maricopa County and covers an area of approximately 3,800 square miles. Groundwater quality data indicate that most of the groundwater is suitable for most uses, but use of untreated groundwater for potable water uses is limited.

Surface water pollutants can originate from both single point sources such as a pipe or ditch, and non-point sources such as runoff from agricultural fields, construction sites and urban development. In Maricopa County, agriculture, industry, construction, wastewater treatment plants, motorized recreation, landfills, and resource extraction are the primary contributors to surface water pollution. Sources of elevated levels of nutrients may include fertilizers, livestock-feeding operations, sewer and septic systems. Best management practices and regulation of point-source pollution are methods to reduce the quantity of nutrients entering streams. Regulatory agencies and environmental legislation have resulted in greater attention to the mitigation of existing pollution problems and the prevention and mitigation of future problems.

In the planning area, there are dairies and other livestock in corrals. All of these animals contribute to the potential for effluent contamination of surface waters. Dairy operations, in particular, have a responsibility to clean up manure on a daily basis and store it in enclosed containers for proper weekly disposal, as indicated in the Maricopa County Environmental Health Code.

Additional information on water quality in Maricopa County is available in the Water Resource element of *Eye to the Future 2020*, the Maricopa County Comprehensive Plan. A discussion of water quality issues in the Old U.S. Highway 80 planning area is also presented in the Water Resources section of this area plan.

## *Energy Service Providers*

The effects of energy deregulation have been seen in the Tonopah/Arlington area. This area offers many opportunities for energy service providers seeking to sell power on the wholesale market due to relatively easy access to natural gas, lower cost of land, labor and operations, and less restrictive regulatory statutes.<sup>15</sup> As a result, the following are issues related to energy deregulation:

## Water Use

A typical 2,000 megawatt power plant would require on average about 10,000 acre feet of water per year for normal operations. This water can come from wells, treated effluent, irrigation districts, CAP allotments, or municipal water supplies. For instance, Palo Verde NGS has contract with the 91st Ave. Waste Water Treatment

<sup>15</sup> Arizona Water Resources, Power Plants in Arizona — an Emerging Industry, a New Water User, Jan. - Feb. 2001, Vol. 9, No. 4.



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Plant to receive up to 60,000 acre feet per year of effluent, through the year 2027. In 1995, a total of 48,899 acre feet were delivered to the plant. In the same year, according to the Arizona Department of Water Resource, all electrical power plants in Maricopa County used a total of approximately 3,832 acre feet of groundwater.

### Evaporation Ponds

Evaporation ponds are required after water is cycled through the power plant for cooling and steam generation. At the end of the cycle, the level of dissolved solids in the water rises above usable range. The water is then removed from the system and placed in evaporation ponds to remove the solids. A typical pond could be hundreds of acres. These ponds have increased alkalinity, which may present a problem for migrating waterfowl, and may affect the underlying hydrology. The Redhawk Power Station utilizes a Zero Discharge System meaning that the cooling water is continually reclaimed and reused and no water is released to the environment.

### Open Space

As a result of energy deregulation, most of the power plants opted to retire farmland and the appurtenant Irrigation Grandfather Rights to obtain their converted Type 1 groundwater rights. As an environmental offset to the possible water supply and air quality impacts, the power plants designated their water properties as open space. The combined amount of open space within the planning area is nearly 8,000 acres. The effect of converted groundwater rights on open space is also discussed in the Open Space element.



## ECONOMIC DEVELOPMENT

### Social and Economic Characteristics

The social and economic characteristics of the Old U.S. Highway 80 planning area are described in the following five sections:

- Area Economy/Economic Base
- Housing
- Economic Base Potential
- Residential, Commercial, and Industrial Demand
- Policy Implication

### Area Economy/Economic Base

One of the major goals of economic development is to create jobs. Many established rural areas include some employment opportunities such as manufacturing operations, distribution centers, agricultural activities, local government offices, or public schools. Major employers in the area include the Palo Verde and Arlington School Districts, Palo Verde Nuclear Generating Station, and the Town of Buckeye (located just outside the planning area). Agricultural-related activities make up the primary economic activity in the planning area. In 2005, the University of Arizona created an annual report of Arizona's Agricultural Activities on behalf of the Arizona Department of Agriculture which confirmed that agriculture is worth \$6.6 billion each year to our state.

Agriculture also creates non-economic benefits which cannot be statistically measured. Non-economic benefits include the preservation of open space, maintaining rural character and making communities more attractive to tourists and to employers. Farming activities benefit the environment by conserving valuable soil resources, protecting watersheds, and improving wildlife habitat.

#### *Old U.S. Highway 80 Planning Area - Employment Trends*

Maricopa Association of Governments (MAG) provides a classification of total employment in the planning area. These numbers are based on types of employment reported by residents in the planning area for the U.S. Census 2000. Most of the employment sites are outside the planning area because the figures are based on a Traffic Analysis Zone (TAZ) that corresponds to the Old U.S. Highway 80 planning area which includes some areas of the Town of Buckeye and Tonopah. In this table, 'Industrial' and 'Public' are the top two employment categories. There were 6,044 total jobs reported in the area in 2000.

The planning area is largely devoted to agriculture; however, industries ranging from education, government, construction, and utility services exist within the planning area. The largest employer, Palo Verde Nuclear Generating Station employs 3,320 people. Sempra Energy employs 320 people, while other



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employment includes the Palo Verde and Arlington School Districts which employ 50 to 60 people, Zachry Construction Corporation employs 250 people, and various agricultural facilities like dairy and egg farming provide other employment opportunities. Other employment opportunities are located east of the planning area near downtown Buckeye. Most of the employment in this area is related to warehousing, storage, distribution, manufacturing, development industries, education, and government services. All together downtown Buckeye employs approximately 1,800 people.

**Table 18: MAG Socioeconomic Data – Base 2000 Employment** summarizes employment opportunities by sector and **Table 19: Old U.S. Highway 80 and Buckeye Employment** summarizes the number of jobs by employer.

### *Future Employment Trends*

Employment growth is expected in all sectors except for agriculture. Maricopa County experienced a 9% decrease in total cropland from 1992 to 1997. Although data specific to the planning area are not available, it is likely that it has also undergone a decrease as well.

Employment projections are difficult to analyze because the Old U.S. Highway 80 planning area does not match census boundaries or MAG data boundaries. However, the planning area is partially within the MAG's Regional Analysis Zone (RAZ) 346. RAZ 346 covers all of the Tonopah area and roughly characterizes similar conditions within the planning area. Based on MAG projections between 2000 and 2020, overall employment growth will translate into approximately 1,300 additional jobs to the area.

### *Agricultural Activities*

Two types of markets provide income and employment within any economy. The local market, or non-basic sector, sells products to consumers within a city or area, and the export market, or basic sector, which sells products to consumers outside a city or area. Economic theory asserts that a region must produce and export goods and/or services to an outside market in order to increase local income.

As noted, agricultural-related activities make up the primary economic activity in the planning area. Arizona is second in the nation in production of angora goats, honeydew melons, lettuce, cauliflower, broccoli, cantaloupes, and lemons. Arizona is also third in the nation in production of Pima cotton, Durum wheat, principal vegetables, and tangerines, and is one of the top ten states in the production of oranges, onions, Upland cotton, cottonseed, grapefruit, watermelons, grapes, and carrots.

In 2004, Arizona's top five agricultural commodities by valuation were cattle and calves, lettuce, dairy products, cotton, and hay. In the same year, Arizona's top five exports were cotton and lint, vegetables and preparations, wheat and products,



**Table 18: MAG Socioeconomic Data - Base 2000 Employment**

Area	Retail	Office	Industrial	Public	Other	Total Employment
TAZ Areas*	130	15	1,077	4,706	116	6,044
Total % in Employment Category	2.15%	0.25%	17.82%	77.86%	1.92%	100%

\* TAZ Areas included 101, 103, 121, 124, 1860, 1883, 1894, 1895, 1896, 1902, 1906, 1907, 1924, and 1956.

Source: Maricopa Assoc. of Governments POPTAC data, Accepted June 25, 2003 (consistent with 2000 census data).

Note: 'Other' employment includes work-at-home and construction employment.

**Table 19: Old U.S. Highway 80 and Buckeye Employment**

Area	Employer	# of Employees	Description
Old U.S. Highway 80	Arlington School District	26	Educational
	Palo Verde School District	30	Educational
	Pinnacle West Corporation	3,320	Utilities
	Sempra Energy	320	Utilities
	Zachry Construction Corp.	250	Construction
Buckeye	Alleco Stone LLC	35	Wholesale Trade
	Bales Elementary School	61	Educational
	Buckeye Elementary School District	160	Educational
	City-Waste of Arizona, Inc.	35	Waste Management
	Lewis State Prison	1,059	General Government – State
	Metco Southwest	35	Wholesale Trade
	National Council of La Raza	35	Civic and Social Organizations
	Quincy Joist Co., Inc.	115	Structural Metal Manufacturing
	Roosevelt Irrigation District	41	Utilities
	Saddle Mountain Ranch	40	Agriculture/Forestry/Hunting
	Schult Homes	225	Production/Manufacturing
	Tom Jones Ford, Inc.	40	Motor Vehicle/Parts Dealer
	Town of Buckeye	185	General Government
	Wal-Mart Stores, Inc.	800	Warehouse/Storage
Wingfield Livestock Transport	45	Truck Transportation	

Source: MAG employment data

seeds, and dairy products. Many of the farms located in the Old U.S. Highway 80 planning area produce many of the commodities listed above.

The principal farm product in the Buckeye area is cotton. Agribusiness in the Old U.S. Highway 80 planning area consists of egg farming, dairies, alfalfa, and other crops like wheat, barley, and perhaps melons and onions. Crops are planted and harvested throughout the year. Alfalfa, for instance, is harvested at least 7 times a year. At harvest time, residents can expect large trucks and farm equipment to use the local roadways. Some equipment can be as wide as 21 feet and only travel between 12 and 20 miles per hour. Most farm equipment requires a wide turning radius, especially at intersections. It should be noted that the canal companies also



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use large equipment to maintain the irrigation canals. Consequently, access to the roadways for these types of equipment is important throughout the year.

In the planning area, there are currently eleven agricultural exemptions designated by Maricopa County. Exempted uses are usually for uses accessory to agricultural farmlands which would not be allowed on residential properties. The minimum lot size for an agricultural exemption is five contiguous commercial acres in size (one commercial acre equals 35,000 square feet). Agricultural exemptions include uses such as heavy farm equipment, barns, corrals, fencing, etc.

### *Housing*

Development trends indicate that housing is moving further away from urbanizing areas. Despite being approximately 50 miles away from downtown Phoenix, areas near the Old U.S. Highway 80 planning area and Buckeye are beginning to see significant growth. Development trends indicate Buckeye one day could be home to more than one million people.

A steady increase in residential building permits within the planning area reflects a similar trend. **Figure 11A-Residential Completions** indicate those parcels that contain residential structures. Most of the housing stock in the planning area is characterized as conventional single-family homes, and most homes along Old U.S. Highway 80 are greater than 10 years old. From 2000 to 2005, 200 single-family homes were permitted in the planning area with an additional 25 permits pending; at least 100 of these were requests for manufactured dwellings. According to the Maricopa County Zoning Ordinance, manufactured homes are an allowed use.

Another indicator of housing demand is approved final subdivision plats in the planning area. Between 2000 and 2005, Maricopa County approved only one final plat containing 50 single-family lots for Spring Mountain Ski Ranch (average lot size 3.5 acres). The lack of services and infrastructure has limited the development of subdivisions. Most of the new homes built in the planning area have been the result of lot-splitting and not recorded subdivisions. This type of development has been isolated to the northern portion of the planning area. However, future DMP's can drastically change development patterns. For example, the Ladera DMP located near Old U.S. Highway 80 and Patterson Rd. proposes 6,208 units on approximately 1,918 acres which equates to an approximate population of 16,700. The developer will be required to work with appropriate agencies to provide urban services: police, fire, schools (except in retirement communities), water, sewer, parks, and libraries if needed and not available within a reasonable distance. DMP's will change historical land use and growth patterns in the Old U.S. Highway 80 planning area to more urban character.

### *Construction and Real Estate*

Over the past several years, Maricopa County has been one of the nation's leaders in residential construction. The planning area reflects a similar trend in that



# Residential Completions

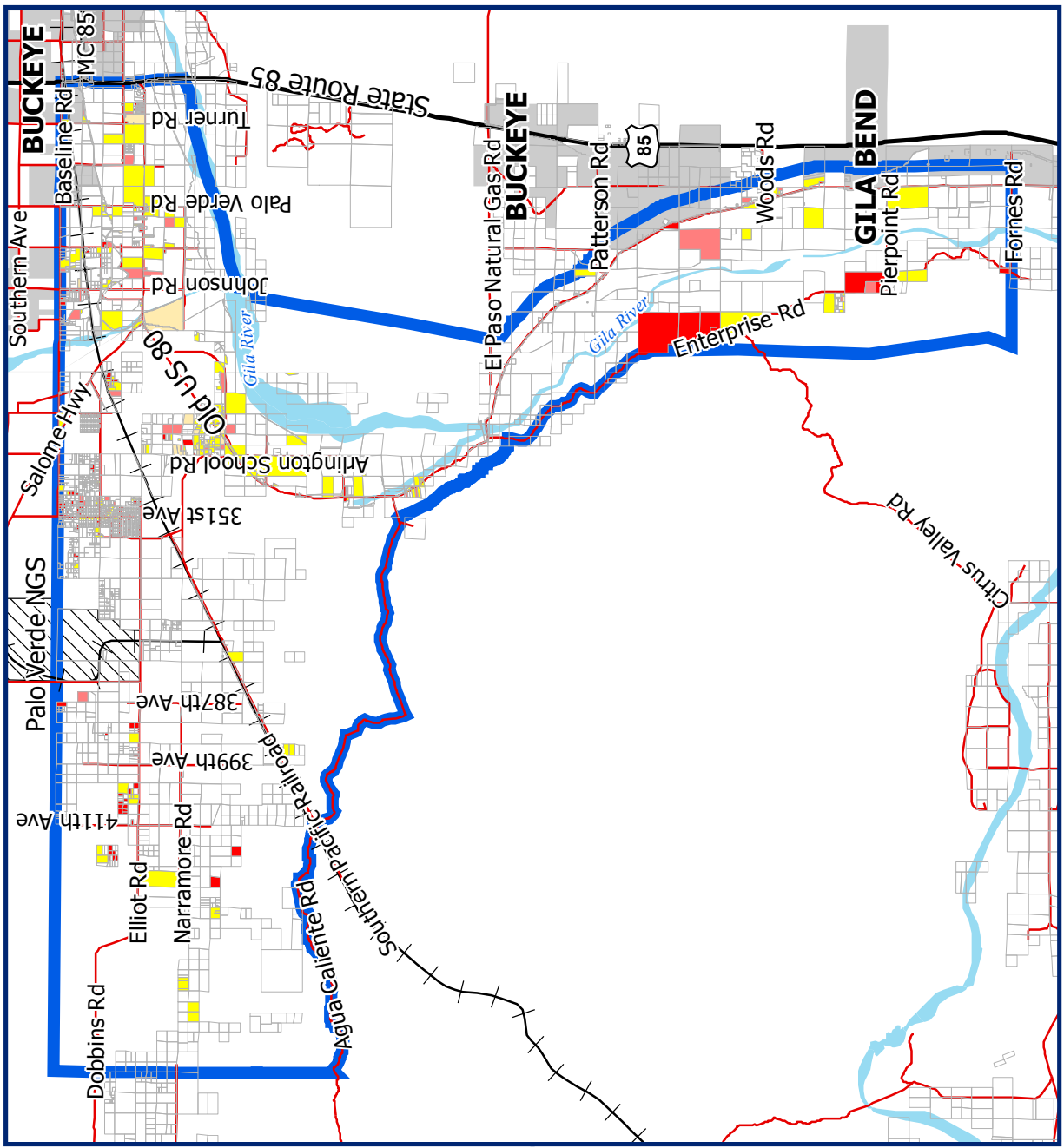
Figure 11A

**Legend**

- Highway
- Arterial Roadway
- Railroad
- Old U.S. Highway 80 Area Plan
- River
- Incorporated
- Palo Verde NGS

**Residential Completion Dates**

- 2001-2005
- 1997-2000
- 1993-1996
- Prior to 1993



0 2 4  
Miles

N  
W E S  
Vicinity Map

**ONE STOP SHOP**

Maricopa County  
Planning and Development  
501 N. 44th St., Ste. 100  
Phoenix, Arizona 85008  
February 2007





## INVENTORY AND ANALYSIS

residential permits have been steadily increasing since the late 1990s. From 1995 to 2000, the planning area averaged twelve new homes per year. By contrast, approximately 72 homes were completed in 2005 (**Figure 11B – Residential Housing Completions** graph). From 2000 to 2005, 55% of these new dwelling units have been manufactured homes, including those used temporarily (under a temporary use permit) during construction of a permanent home. It should be noted that multi-sectional manufactured homes are allowed in the rural zoning districts as a use by right. However, single wide trailers permanently remaining on property require a special use permit.

According to the Greater Phoenix Economic Council, between 1990 and 2000 the greater Phoenix area was the fastest-growing large metropolitan area (population above 2 million) in the United States, adding 1,013,396 new residents, which was a 45.3% increase. By 2010, the population is expected to grow by another 24% to 3,709,566, an increase of 718,316 new residents. The population growth trend, along with other factors, is predicted to be a key driver of growth and development in the greater Phoenix area. The Old U.S. Highway 80 area will likely remain attractive to people who want to escape the city and reside in a quiet, rural setting.

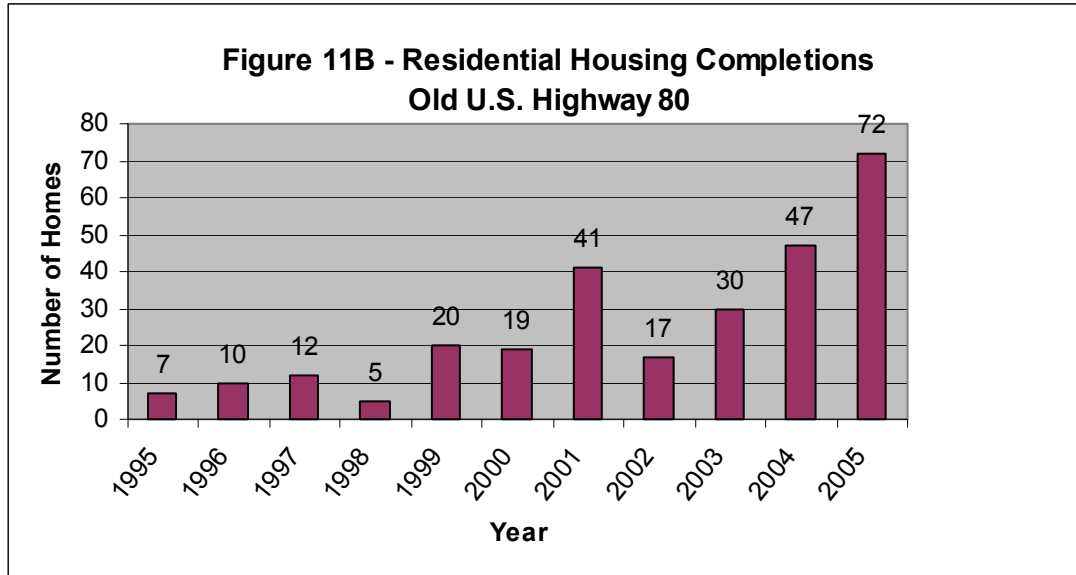
### *Economic Base Potential*

The economic base of the planning area is modest. The area is characterized by scattered, low-density residential development; a few large commercial (with special use permit or agricultural exemption) and industrial facilities; power plant facilities; and large areas of undeveloped desert.

Economic development activities that are expected to continue include public employment, education, power plants, real estate, construction, and other residential-related service businesses. Agricultural activities are expected to continue including the production of cotton, dairy products, alfalfa, and wheat. Residents of the area have expressed an interest in preserving and expanding small manufacturing businesses and certain industrial uses in a planned environment, especially business park uses.

According to the Maricopa County Zoning Ordinance (MCZO), residents are permitted to conduct certain businesses from their home, subject to certain requirements. In general, the business must be conducted within an enclosed dwelling; no signs or advertising is allowed on the premises; the business must not generate any noise, odors, dust, etc., or use toxic or dangerous material; and only residents of the dwelling may be employed in the business.

Commercial growth during the next 10 to 15 years is expected to be limited to the activities described above due to the distant geographic location, the unknown status of water availability, lack of infrastructure, distance from existing services, and the desire of the community to maintain the rural residential character. By



Source: Maricopa County Planning and Development data; Maricopa County Assessor data

2020, there may be some potential for limited small-scale to large-scale neighborhood retail or service development on Old U.S. Highway 80.

### *Economic Development Corridors*

As seen in the Buckeye General Plan Map identifies future land uses within the northeast portion of the planning area. The general plan calls for Employment Corridor uses along the railroad extending southward to Hazen Rd. and Heavy Industrial type uses along the railroad extending to the northward to Baseline Rd. All of the areas south of Old U.S. Highway 80 are designated as Agriculture or Rural Residential uses. Currently, the Town of Buckeye is in the process of updating the general plan for the entire Town of Buckeye planning area.

### *Residential, Commercial, and Employment Demand*

Residential, commercial, and industrial demand calculations can be found in the Growth Areas element of this area plan. Estimates for the amount of land needed to accommodate future land uses are also provided in the Growth Areas element.

### *Employment Corridors*

State Route 85 provides residents in outlying areas with more convenient access to employment opportunities in Buckeye and Gila Bend. However, should this area become more urban, policies may need to be developed for the long term that will help create employment opportunities closer to the planning area, create a better jobs/housing balance, reduce traffic volumes, and increase transportation alternatives.



## INVENTORY AND ANALYSIS

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### *Commercial Development*

Currently there is little commercial development in the planning area, with the exception of facilities developed under special use permits or agricultural exemptions. Any future development should be sited and designed such that the activities will not negatively affect adjacent residential neighborhoods. The community should provide input so that any approved facility would be compatible with the area.

### *Residential Development*

Residential development will continue to impact the region's environment and character. Current limitations with respect to do not deter development in washes, in areas with high quality Sonoran desert, or in areas that lack proper services and infrastructure. Policies and guidelines should be developed to encourage suitable locations for new subdivisions and to help ensure that appropriate access and services are provided. For new subdivisions, incentives such as flexible development standards and voluntary agreements can be explored to protect sensitive areas, open space areas, and trails.



## GROWTH AREAS

In 1998, the State of Arizona passed the Growing Smarter Act to ensure the wise management of growth and protect our state's natural heritage. Among other elements, Maricopa County is required to include a plan for growth areas. Specifically, Maricopa County must identify those areas, if any, that are particularly suitable for planned multi-modal transportation and infrastructure expansion and improvements designed to support a planned concentration of a variety of land uses. This includes residential, office/employment, commercial, tourism, and industrial uses. This mixed use planning must include policies and strategies designed to:

- Make automobile, transit, and other multi-modal circulation more efficient
- Make infrastructure expansion more economical
- Provide for rational land development patterns
- Conserve significant natural resources and open space areas within growth areas, and coordinate their location to similar areas outside of growth areas
- Promote timely and financially sound infrastructure expansion

The Growth Areas element is important because it allows Maricopa County to accommodate growth in an orderly and fiscally responsible manner that is sensitive to the natural environment and residents' quality of life. This type of growth will keep Maricopa County economically, socially, and environmentally successful. Although there are fewer opportunities to plan for urban growth areas in rural county areas, it is still important to plan for and anticipate growth in these areas.

### Present Development

Historically, the Old U.S. Highway 80 planning area has experienced very little growth. Currently, building permit activity indicates that 42 new homes will be built every year. Agriculture has been the predominant land use in the planning area, except lands near Palo Verde Nuclear Generating Station. Some large parcels have the potential to be converted to master planned communities.

### Future Development

Development over the next 20 years will continue to shift from southeast Maricopa County to areas in the southwest, west, and northwest portions of the metropolitan area. Growth is also expected along existing and new transportation facilities. This includes major Interstate highways like I-10 and I-17. Additionally, with the completion of the State Route 85 expansion project in the next ten years, State Route 85 will experience more growth and development along the highway. It is important to note that population increases in surrounding areas like Tonopah, Buckeye and Gila Bend will significantly affect the Old U.S. Highway 80 study area.



# INVENTORY AND ANALYSIS

## Growth Areas Issues and Considerations

Many growth area considerations are incorporated into the creation of the future land use plan such as topography, water supply, availability of services and infrastructure, land ownership, consistency with municipal general plans, and resident issues, concerns, and recommendations.

### *Growth Area Issues*

Resident issues, concerns, and recommendations are an important part of this plan. Growth-related issues were identified during the public participation process from various public and private stakeholders. These issues, concerns, and recommendations ultimately affected the outcome of the future land use plan which is **Figure 15–Future Land Use Plan**.

## Growth Area Considerations

Opinions about future growth vary, but there are many growth area considerations which affect land use planning such as topography, water resources, vegetation and wildlife, availability of services and infrastructure, public land ownership, and coordination with municipal general plans. While not necessarily a complete list, this section presents a brief overview of growth-related considerations.

### *Topography*

Topography affects where development can occur especially for higher intensity uses like commercial and industrial development. Important topographic considerations include floodplains, slope areas (generally considered to be 15% or more), and subsidence and earth fissures. For a detail explanation of topography in the Old U.S. Highway 80 planning area, see the Environment and Environmental Effects section.

### Floodplains

The U.S. Army Corps of Engineers regulates activities in the nation's waterways. In 1972, Section 404 of the Clean Water Act was passed. It prohibits discharging dredged or fill material into U.S. waters without a permit from the Corps. The Corps' first priority in its enforcement program is to protect the aquatic environment and other public interest resources. The Section 404 program's geographic jurisdiction extends to all waters of the U.S., including all tidal waters, all interstate waters, virtually all wetlands, lakes, rivers, perennial and intermittent streams, and dry washes in the arid west.




**Figure 12-Floodplains and Topography** identifies floodplain areas in the Old U.S. Highway 80 study area. The Flood Control District of Maricopa County (FCDMC) conducted floodplain studies for the Gila River, Hassayampa River, and portions of Centennial Wash already approved by FEMA. Floodplains are areas that are susceptible to flooding during significant rain events. The most common delineation is the Federal Emergency Management Agency (FEMA) 100-year floodplain. The



# Floodplains and Topography

Figure 12



## Legend

- Highway
- Arterial Roadway
- Railroad
-  Old U.S. Highway 80 Area Plan
-  Slope > 15%
-  Incorporated

### \* Preliminary Floodplains

-  100-year Floodplain

### \*\* Floodplains Approved by FEMA

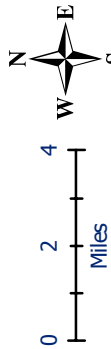
-  Floodway
-  100-year Floodplain

\* Subject to change

\*\* Contact the Flood Control District of Maricopa County for the latest floodplain information



Vicinity Map

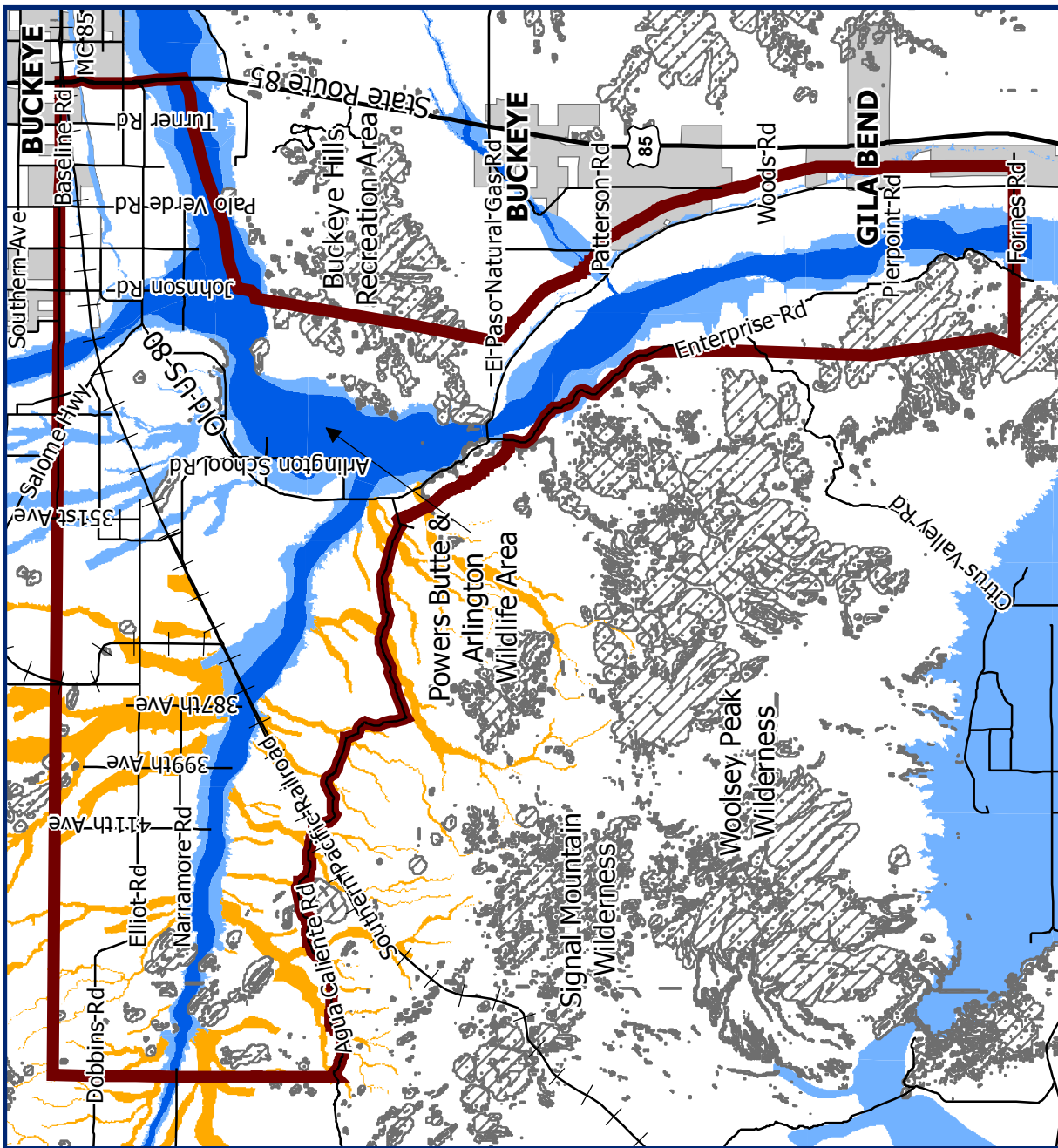


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 PLANNING & DEVELOPMENT DEPARTMENT





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100-year flood is defined as the flood level having a 1% chance of occurring within a year. It is important to note that the 100-year flood may occur more often than once every 100 years, and that it is not the maximum flood that can occur along a waterway. Within the planning area, approximately 15,500 acres of the planning area are in the 100-year FEMA floodplain. Such areas are adjacent to the floodways where encroachment may be permitted and subject to review by FCDMC. The Maricopa County Comprehensive Plan contains policies that discourage development within the 100-year floodplain.

Along rivers and washes, there are approximately 21,500 acres within the planning area contained in delineated floodways. Floodways are considered more hazardous areas of the floodplain with restrictions on the type of development that can occur. Only limited private and recreational uses are allowed within a floodway. Some examples of allowed uses within a floodway (subject to obtaining a floodplain use permit) include sand and gravel operations, corrals and shade structures, golf courses, picnic grounds, wildlife preserves, farming, parking and loading areas, and hiking trails. Buildings are not permitted within the floodway.<sup>16</sup>

The FCDMC recently identified preliminary floodplain areas north and south of Centennial Wash. According to FCDMC, approximately 10,000 additional acres are within the 100-year floodplain, which need final approval by FEMA. This area is equal to roughly 7.3 percent of the planning area. Area Drainage Master Plans and Water Course Master Plans being currently developed for the Palo Verde Area Floodplain Study, Buckeye/Sun Valley Area Drainage Master Plan, and the Lower Hassayampa Water Course Master Plan are discussed in the Open Space element.

In 2005, the Maricopa County Planning and Development Department assumed responsibility for drainage permitting, drainage inspection, development plan review, and enforcement. The FCDMC reviews plans for residential, single family, commercial, subdivisions, and industrial building for compliance with floodplain regulations. The MCP&D Department checks for compliance with design drainage guidelines and issues a drainage clearance.

### Slope Areas

Maricopa County encourages preservation of significant slope areas, especially those above 15%. **Figure 12-Floodplains and Topography** depicts areas over 15% slopes. The Maricopa County Zoning Ordinance provides guidelines for development to protect public health, safety, and welfare, and to minimize the impacts to the existing character of such areas. The planning area is generally less than one percent slope in the desert valley, but outlying hills and mountains exceed 15% slopes. Buckeye Hills and the Gila Bend Mountains exceed 15% slopes.

<sup>16</sup> Floodplain Regulations for Maricopa County. Flood Control District of Maricopa County, 2000



## Subsidence and Earth Fissures

Subsidence and earth fissures are often the result of long-term extraction of groundwater. When groundwater is pumped this causes the land settle and in some cases subside. Under extreme circumstances large cracks or fissures may develop.

In areas where extensive pumping has significantly lowered groundwater levels, subsidence and cracking of the land surface can occur. Groundwater depletion can make it economically infeasible to pump water in some cases. Land subsidence and earth fissuring have been documented in certain portions of Maricopa County and have caused water quality problems, flooding, damage to well casings and building foundations. According to studies by ADWR, from the mid 1950's to 1998, water levels near Tonopah and the Centennial Wash have declined by as much as 70 feet and 90 feet respectively. Subsidence could be an issue due to groundwater overdraft in these areas.

## *Water Supply*

Water in the planning area comes from groundwater sources. The planning area is located in the Hassayampa Subbasin, West Salt River Valley Subbasin, and the Gila Bend Basin. Groundwater supply and depth varies widely throughout the planning area. Test wells must be drilled to establish the depth and quantity of groundwater. According to Arizona Depart of Water Resources (ADWR), groundwater depletion is an issue because of potential for subsidence and earth fissures. In general, water in the Hassayampa Subbasin is considered to be of better quality than the West Salt River Valley Subbasin. A more in-depth discussion of water supply is found in the *Water Resources* element.

## *Vegetation and Wildlife Habitat*

Citizens have expressed a desire to protect the native vegetation and wildlife habitat found within the planning area while allowing higher density residential development in certain areas of the planning area. This can be achieved by using sensitive development practices: protecting floodways/floodplains which contains most of the area's wildlife habitat, protecting hillside or slope areas, and allowing density transfers in order to further protect open space.

The Old U.S. Highway 80 planning area currently contains abundant open space, which supports a large variety of animals and plants. Located in the Sonoran Desert, three general types of native plant communities exist: Palo Verde-Saguaro, Creosote, and Riparian communities are found throughout the planning area. The Riparian habitat is found along rivers and washes which supports much of the wildlife in the area. Wildlife Areas like the Robbins Butte Wildlife Area, Arlington Wildlife Area, and the Powers Butte Wildlife Area are all contained in the riparian areas along the Gila River. A variety of federal and state laws that protect biological resources help govern development. This includes the Endangered Species Act, the Clean Water Act, the National Environmental Policy Act (NEPA), and the Arizona



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Native Plant law. A more complete discussion of vegetation and wildlife is found in the *Environmental Effects* section of this area plan.

### *Availability of Services and Infrastructure*

One of the principles of the Maricopa County Comprehensive Plan is ensuring that growth occurs in an orderly and fiscally responsible manner. This includes ensuring that necessary infrastructure and services such as roads, utilities, schools, police, fire, and medical facilities are available to meet the needs of future residents. Within the Old U.S. Highway 80 planning area, infrastructure and services are lacking with the exception of adequate streets, flood control, law enforcement, and fire protection services. However, to ensure adequate urban services and facilities are available, community sewer and water system, sheriff and fire facilities, libraries and schools will be required to accommodate a growing population.

### *Public Land Ownership*

Besides potential physical and built constraints, land ownership can also impact growth and development. Approximately half of the Old U.S. Highway 80 study area is held in public ownership. Most of this land is managed by either BLM or Arizona State Land Department (ASLD), and some lands along the Gila River and near Gillespie Dam are managed by the FCDMC for flood control purposes. Lands administered by BLM and the State Land Department are scattered throughout the study area. All of the BLM land and most of the state trust land is permitted for livestock grazing. Development of public land is limited for reasons listed below.

### Federal

As mentioned in the Land Use element, BLM is updating the Sonoran Desert National Monument Management Plan and Phoenix South Resource Management Plan Revision which contains all of the Old U.S. Highway 80 planning area. Currently, the preliminary draft of the resource management plan does not show any BLM land listed for sale or disposal. Therefore, in the near future most of the BLM within the planning area will likely remain undeveloped.

### State Land

The ASLD has the responsibility on behalf of beneficiaries to assure the highest and best use of the trust lands. Typical beneficiaries include public schools and public institutions with the largest beneficiary being the common schools (K-12). Fair market value must be obtained from all trust land transactions and all revenues derived from the sale of trust lands are placed in a fund. Leases and sales must occur at public auction. No state land within the planning area is slated for public auction at this time, but this may change in the future.

### Flood Control District of Maricopa County

The location of existing and future flood control structures can impact the location and type of future development. While flood control structures minimize the impacts of floods on human safety, health, and welfare, they can also influence where



specific development is appropriate. The FCDMC conducts comprehensive watershed studies throughout the County. Plans are then prepared based on hydraulic analyses, future land use development, and environmental considerations. The plans incorporate information provided by watershed studies and recommend specific, project-oriented solutions for flooding problems. FCDMC planning studies specific to the planning area are discussed in the *Open Space* element.

### *Coordination with Municipal General Plans*

Municipal general plans often provide specific recommendations for proposed land uses for the next 10 to 15 years. Future growth within unincorporated areas of Maricopa County is encouraged within General Plan Development Areas (GPDA). The GPDA is unincorporated area that is likely to be annexed by a city or town in the future, and is therefore included in an adopted municipal general plan. Maricopa County makes use of municipal general plans by identifying areas which are suitable for higher intensity uses (i.e. commercial, industrial, mixed use, and residential density greater than 1 dwelling unit per acre). These areas are typically selected because of available services, infrastructure, and residents' input during the planning process. The Town of Buckeye and Town of Gila Bend both border the planning area.

Buckeye's current General Plan designates land along the Southern Pacific Railroad as Heavy Industrial and Employment Center. Heavy Industrial is defined as business involved in research, warehousing, wholesaling and manufacturing. Industrial uses will range from light to heavy. Light industry can be incorporated into industrial business parks that will work well with high density residential and commercial uses. Heavy industrial uses will be concentrated along the rail line and generally be kept away from major residential uses.

Buckeye's existing General Plan notes the advantages of aviation and rail to attract various types of industry or employment. The Employment Corridor land use is intended to be centrally-located in order to provide a more accessible workplace for future residents. Furthermore, the Southern Pacific Railroad offers excellent freight service for a wide range of agricultural and manufacturing/distribution activities. Employment corridors are the key to Buckeye's balanced residential and employment needs.

Buckeye's current General Plan Map designates land south of Old U.S. Highway 80 as Agriculture/Rural Residential. Rural residential is generally considered to be residential development of less than 1 d.u./acre. Throughout Maricopa County, agricultural land is frequently converted to urban development. However, Buckeye also recognizes the need to maintain agribusiness for various purposes. The Old U.S. Highway 80 future land use plan reflects Buckeye's existing General Plan in this area.





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Gila Bend's General Plan designates areas in the southern portion of the Old U.S. Highway 80 planning area as Rural Residential (0-1 d.u./acre) and Low Density Residential (1-5 d.u./acre) which is consistent with future land use plan for the Old U.S. Highway 80 planning area. The Rural Residential designation is generally located west of the Gila River which is the same as Maricopa County's designation of Rural Residential. Areas west of the Gila River are generally designated as Low Density Residential. It is important to note that Gila Bend General Plan designation of Low Density Residential is equivalent to Maricopa County's designation of Small Lot Residential (2-5 d.u./acre). The Old U.S. Highway 80 future land use plan reflects Gila Bend's General Plan in this area.

### Growth Area Opportunities and Analysis

Future population projections for the Old U.S. Highway 80 planning area are established by estimating the population based on build-out of the future land use plan. To determine projected population and land use for the planning area, several assumptions were made:

#### Residential Assumptions

- Calculations for land absorption only consider current private land ownership; does not include public land ownership such as State Land, BLM, or FCDMC land.
- Development can occur within floodplains (under proper permitting), but not floodways.
- At build-out, the Old U.S. Highway 80 population will increase to 243,000 people.
- 2.67 persons per occupied household (per Census 2000).
- One household equates to a single dwelling unit.
- Average residential density per gross acre is approximately 2 d.u./acre (average of future residential land use categories).

#### Commercial Assumptions

- 1-5 acres per 5,000 population and market area of 1.5 miles for neighborhood commercial land use (per recommended land use guidelines for DMP)
- 10-30 acres per 40,000 or greater population and market area of 3-5 miles for community commercial land use (per recommended land use guidelines for DMP)
- 50+ acres per 150,000 or greater population and market area of 8+ miles for regional commercial land use (per recommended land use guidelines for DMP)

#### Large Scale Employment Assumptions

- Jobs / Population ratio of 1:2 for large scale employment





## Residential Demand

In the near future, scattered rural residential development will likely continue at a modest rate of 42 homes per year. Based on the amount of land currently under private ownership zoned Rural-43 (22,900 acres) and Rural-190 (31,900 acres), the planning area could accommodate approximately 51,400 dwelling units. In the near future, the planning area has enough land to accommodate significant growth. However, based on the projected build-out of the future land use plan, the planning area could reach 91,200 dwelling units. The difference between the two projections is due to the fact that the future land use plan accounts for higher residential densities like Large Lot Residential, Small Lot Residential, and Mixed Use development which means the planning area can accommodate 91,200 dwelling units.

### *Development Master Plans*

As noted, the Maricopa County Comprehensive Plan recognizes that DMPs are the preferred type of development because of the opportunity to provide mixed and balanced land uses. Currently, there is only one proposed DMP near the study boundary which is the Ladera DMP. Ladera DMP proposes 6,200 units on approximately 1,900 acres near Old U.S. 80 and Patterson Rd.

## Commercial Demand

At present, there are 199 acres of commercially zoned property (zoned C-3) existing within the planning area. Most of the C-3 zoning is undevelopable due to being in the right-of-way along Old U.S. Highway 80 and Oglesby Rd. In the future, approximately 12 acres of C-3 zoned property located near the southwest corner of Hazen Rd. and Oglesby Rd. could be developed as commercial once infrastructure like community sewer and water is available.

Research indicates that a majority of residents and landowners in the planning area are in favor of commercial development in this area. In order to address the Growth Areas element, commercial demand will be calculated for hypothetical purposes. Also, typical land absorption calculations do not always apply in rural areas.

### *Neighborhood Retail*

Historically, there has been very little demand for commercial uses in the Old U.S. Highway 80 planning area. Estimated neighborhood retail land use demand is based on projected resident population increase and if a market within 1.5 miles exists. For the next 5 years, commercial uses may not be viable until water services are available. However, at build-out, there will be a need for limited types of commercial such as convenience store, small retail, and small specialty stores. Neighborhood retail land uses are generally building areas of less than 100,000 square feet. Based on a projected 243,000 planning area residents, up to 240 acres of neighborhood retail land uses would be appropriate. The future land use plan designates approximately 120 acres of land for neighborhood retail. Due to potential population



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increases outside the study area, up to 240 acres of neighborhood retail within the study area is only an estimate.

### *Community Retail*

Community Retail land uses are generally building areas between 100,000 and 500,000 square feet approximately equals 10 to 30 acres in land area needed for community commercial uses. Based on anticipated population in the planning area, community commercial uses will be limited until populations exceed 40,000 people in a market area of 3-5 miles. Based on a projected 243,000 planning area residents, up to 180 acres of community retail uses will be needed to service the population. The future land use plan designates approximately 160 acres for community retail. Community retail uses would mostly be developed in areas closer to Tonopah, Buckeye, or Gila Bend. Any proposed DMPs, would also need to consider the need for community retail uses, under the DMP guidelines.

### *Regional Retail*

Regional Retail land uses are generally building areas greater than 500,000 square feet which approximately equals 50+ acres in land area needed for regional commercial uses. Based on current population growth, in the planning area, regional commercial uses will not be needed until populations are greater than 150,000 people and market area of 8+ miles. Although the planning area proposes a population of 243,000 people, no regional retail uses are proposed in this plan because regional retail uses will likely be developed near I-10 in Buckeye.

### **Large Scale Employment Demand**

The added effect of increased population will be the need for additional employment opportunities. Public comments indicate that employment type uses such as Business Park and Industrial uses are strongly supported and would be appropriate in the planning area, especially along the Southern Pacific Railroad and adjacent to principal arterial roadways. Rural areas do not necessarily have the same demand for urban industrial uses, but once water is available and proper sewer systems are in place, industrial uses will be appropriate. Large scale employment is calculated based on the best case scenario of a job to population ratio of 1:2. Based on this ratio and a potential build-out population of 243,000 people, approximately 115,500 new jobs will be needed to support the population increase.

### **Growth Area: Conclusion**

When commercial and industrial land use needs are combined with residential land use needs, the Old U.S. Highway 80 planning area has enough land to support future growth and development. It is important to note that these numbers should be used as a guide rather than definitive criteria. Various factors, such as changing annexation patterns, economic conditions, demographic conditions, and land use patterns can alter population growth and demands in the planning area.

## INVENTORY AND ANALYSIS



The major goal of the Growth Areas element is to provide rational development decisions in a timely and fiscally responsible manner. Toward this end, rational development also makes planning for automobile, transit, and other multi-modal circulation much less problematic. Growth area opportunities and analysis for residential, commercial, and employment has been provided for the purpose of planning for such uses within the Old U.S. Highway 80 study area in a timely and fiscally responsible manner. In order to develop higher intensity uses like commercial and industrial uses, infrastructure must be installed. Many of the growth area considerations like topography, water supply, availability of services and infrastructure, land ownership, consistency with municipal general plans, as well as resident issues, concerns, and recommendations have also been considered.



## OPEN SPACE ELEMENT

The Open Space element complies with the requirements of the Growing Smarter Act by providing an inventory of open space areas; an analysis of future needs; policies and strategies for managing, protecting, and acquiring additional open space; and promoting a regional system of integrated open space and recreational resources. In the Old U.S. Highway 80 area, unique opportunities exist to connect open space corridors to protect sensitive lands while allowing for future community growth and development. This section addresses open space issues in and around the Old U.S. Highway 80 planning area. For a countywide perspective on open space issues, refer to the *Eye to the Future 2020 – Maricopa County Comprehensive Plan*.

### Background Plans

It is important to consider a number of local and regional open space planning efforts that are relevant to Old U.S. Highway 80 open space and recreation planning.

#### *General Plans and Ordinances*

The Old U.S. Highway 80 planning area is near the Town of Buckeye and the Town of Gila Bend. Although Buckeye and Gila Bend have not actively acquired additional open space resources like the Phoenix Sonoran Preserve and Scottsdale McDowell Sonoran Preserve, both towns are surrounded by multiple open space resources which also influence the Old U.S. Highway 80 planning area such as, Buckeye Hills, Signal Mountain and Woolsey Peak Wilderness Areas, and the North Maricopa Mountains. Only areas affecting the Old U.S. Highway 80 planning area will be discussed in the Open Space Inventory section. For a detailed listing of open space resources within the Buckeye planning area, see the Buckeye General Plan and the Gila Bend General Plan.

According to the town's general plan, Buckeye's goal is to provide six acres of accessible, active recreation areas per 1,000 people in population, meaning a proposed population of 500,000 will equate to 3,000 acres of dedicated open space. According to Gila Bend's General Plan, a common level of service for park space endorsed by the National Parks and Recreation Association is three acres of community parks for every 1,000 people. Therefore, Gila Bend's park inventory of 28 acres is more than enough to support the population of 2,050 people.<sup>17</sup>

Buckeye's commitment to open space preservation is evident in the support of the El Rio project, which extends from the confluence of the Gila River and Salt River near 115th Ave. to State Route 85 and is designated as a multi-purpose riparian preserve. The Flood Control District of Maricopa County (FCDMC) began work on the El Rio Watercourse Master Plan (WCMP) in August, 2002. The El Rio project is a joint effort between Maricopa County, Buckeye, Goodyear, and Avondale. Although

<sup>17</sup> Arizona Department of Economic Security (2006).



the El Rio project is outside the Old U.S. Highway 80 planning area, the project is a vital connection between the Estrella Mountain Regional Park and the Buckeye Hills Recreation Area. As such, the El Rio project is also an important segment of the Maricopa County Regional Trail System, discussed later. Old U.S. Highway 80 residents expressed interest in the possibility of extending the El Rio project further west from State Route 85 along the Gila River.

Buckeye's development code does contain hillside development standards which are similar to Maricopa County's hillside ordinance. The main objectives of the city's hillside standards are to reduce the impacts to hillside areas which are greater than 15% slope.

### *Desert Spaces - An Open Space Plan for the Maricopa Association of Governments*

The Maricopa Association of Government's Regional Council adopted the *Desert Spaces* plan on October 25, 1995. The plan provides a non-regulatory framework for decision making and coordinating local and regional efforts toward establishing a viable open space system. The *Desert Spaces* plan identifies and recommends conservation and management strategies for natural resources and open spaces critical to the quality of life in Maricopa County. The foundation of the plan is existing parks and preserves.

The *Desert Spaces* plan seeks to preserve, protect and enhance the mountains and foothills; rivers and washes; canals and cultural sites; upland desert vegetation; wildlife habitat; and existing parks and preserves. Mountain areas identified in the plan include the Usery, White Tank, New River, McDowell, Estrella, Heiroglyphic, Deem, Hedgepeth, and Union Hills Mountains. The primary rivers and washes in the plan are the Salt, Gila, Verde, Agua Fria, and New Rivers, and parts of the Cave and Skunk Creeks and Hassayampa River. Also identified are trails, which primarily follow rivers, washes, and canals and allow the public to enjoy a diversity of open spaces. Proposed trails are seen as linking and integrating existing parks and preserves throughout the region. The plan encourages infill development in urbanized areas to reduce the need to develop undisturbed open space.

Two basic management approaches, based on public comments, are identified in the *Desert Spaces* plan for protecting priority areas and resources. The two basic approaches are Conservation Areas and Retention Areas, which account for approximately one-third of Maricopa County. The remaining two-thirds of Maricopa County lands are not categorized (i.e., urbanized areas or areas with lower resource values).

*Conservation Areas* are public and private lands with outstanding open space value. Lands in this category are recommended for protection from development and its effects through policy amendment, easements, restrictions, and/or acquisition. According to a map of "Management Approaches," the Gila River and Centennial



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Washes are identified for protection from development because of its outstanding open space value.

*Retention Areas* are public and private lands with high open space value and are recommended for sensitive development regulation. The Desert Spaces plan identifies some of the remaining land in the Old U.S. Highway 80 planning area as Retention Areas, which are located near the Buckeye Hills Recreation Area and west of the planning area near the Gila Bend Mountains.

The *Desert Spaces* plan contains policies to protect upland Sonoran desert vegetation at the higher elevations of Maricopa County. For example:

*Encourage development that does not require mass grading of the remaining areas of upper Sonoran desert vegetation to protect the region's "sense of place," wildlife habitat, drainages, and scenic quality.*

The plan identifies several specific Sonoran desert areas that serve as major links between regionally significant open space resources and should be protected. For the region in and around the Old U.S. Highway 80 area, this includes "lands that connect the Woolsey Peak Wilderness area and Eagle Tail Mountain Wilderness." Maricopa County area plans recognize the recommendations provided by the Desert Spaces plan and will integrate them into open space policies where feasible and practical.

### *Area Drainage Master Plans and Watercourse Master Plans, Maricopa County*

The Flood Control District of Maricopa County (FCDMC) conducts a proactive program of regional flood control studies which identify existing flood-prone areas and project future conditions. Area Drainage Master Plans (ADMPs) are being prepared for all developable portions of the county. ADMPs help mitigate flood hazards in the respective study area. Water Course Master Plans (WCMPs) are similar to ADMPs, except that a WCMP has more of a focus on the management of a particular river or wash and its banks and flood zones, while an ADMP focuses on flooding issues over a wider drainage area. The FCDMC has made a commitment that new flood control projects not only protect people and property, but also provide opportunities for multiple uses such as natural habitat protection, recreational facilities, and aesthetically pleasing designs.

Currently, the FCDMC is studying much of the northern portion of the Old U.S. Highway 80 planning area. The FCDMC is preparing the *Palo Verde Area Floodplain Study*, *Buckeye/Sun Valley Area Drainage Master Plan*, and the *Lower Hassayampa Water Course Master Plan*. The Palo Verde Area Floodplain Study is currently underway to delineate floodplains along Centennial Wash and areas northwest of the planning area. While most of the study is outside the Old U.S. Highway 80 planning area, this project delineates 400 miles of floodplains for the major watercourses within the Palo Verde watershed.





The Buckeye/Sun Valley ADMP is generally bounded by the Hassayampa River on the north and west, on the south by the Gila River, and on the east by the White Tank Mountains. The Buckeye/Sun Valley area covers approximately 280 square miles of watershed and will estimate flood potential for a watershed, map watercourses, identify existing and potential drainage problems, and develop preliminary solutions and standards for sound floodplain and stormwater management.

The Lower Hassayampa WCMP generally includes the floodplain and erosion hazard areas of the lower Hassayampa River extending from the confluence with the Gila River to the Central Arizona Project (CAP) Canal crossing, and Jackrabbit Wash from the Hassayampa River confluence to the CAP Canal crossing. Currently, master planned communities being developed within the lower Hassayampa River Valley and along the lower Hassayampa River have proposed encroachments into the watercourse.

### *Maricopa County Regional Trail System Plan*

Maricopa County Regional Trail System Plan, adopted by Board of Supervisors in 2004, is a collection of trail corridors under the jurisdiction and control of many different agencies. The plan's goals are to connect the County park system, link recreational corridors around the Valley, and help preserve open space. The plan encourages the integration of trails, pedestrian corridors, and bicycling as alternative modes of transportation. The project will capitalize on existing right-of-ways such as canals, parks, utility corridors, and flood control projects.

The entire trail alignment was completed and adopted in August 2004. The Old U.S. Highway 80 Area Plan contains several segments of the Maricopa County Regional Trail System Plan which include segments 57, 58, 85, 97, 100, 102, and 113. Most notable is Segment 57 which connects the Buckeye Hills Recreation Area to the Estrella Mountain Regional Park along the Gila River. Segment 57 is considered a Priority One trail connection meaning the highest level of acquisition. **Table 20: Maricopa County Regional Trail System** summarizes each segment by location and priority level.

Existing and planned trails identified for the system cross through many jurisdictions, communities, and properties, so partnerships and agreements are important to creating the regional trail. Maricopa County will serve as the facilitator to bring the different links together. Many types of recreational opportunities are anticipated for the trail system, including biking, walking, jogging, and horseback riding.

### *Regional Off-Street System (ROSS) Plan*

The ROSS Plan, initiated by MAG, identifies a region-wide system of off-street paths and trails for non-motorized transportation. Easements for canal banks, utility lines, and flood control channels intersect numerous arterial streets where local



# INVENTORY AND ANALYSIS

**Table 20: Maricopa County Regional Trail System**

Segment	Location	Priority Level
57	Gila River between State Route 85 and the Hassayampa River	1
58	Hassayampa River between I-10 and Gila River	2
85	A power line starting at the Gila River near Estrella Mtn. Regional Park and running to the Gila River near the Arlington Wildlife Area	4
97	Gila River from the Hassayampa River to just southwest of Woolsey Peak Wilderness Area	4
100	Centennial Wash	4
102	Old Camp Wash	4
113	A FCD Regional Conveyance Channel just ½ mile west of State Route 85	4

Source: Maricopa County Regional Trail System Plan

destinations are typically located. The goal of the ROSS Plan is to help make bicycling and walking viable options for daily travel using off-street opportunities. Major corridors in the ROSS Plan have been included in the Maricopa County Regional Trail System. Consequently, Maricopa County will implement the goals and policies contained in the ROSS Plan by implementing the Maricopa County Regional Trail System Plan.

### Open Space Issues

Research of Maricopa County open space documents, as well as input from local stakeholders, have identified the following regional and Old U.S. Highway 80 open space issues:

- Trail connectivity, corridors, and linkages are important for both recreation and wildlife.
- Protection of environmentally sensitive areas including mountains and slopes; rivers and washes; historic, cultural, and archeological resources; view corridors; Sonoran Desert; and wildlife habitat and ecosystems.
- Planning for future open space is important; Maricopa County will consider BLM resource management plan and Desert Spaces plan.
- A coordinated trail system is needed to link Old U.S. Highway 80 community to Buckeye Hills Recreation Area and the Gila River, especially wildlife areas for viewing natural environment; also consider Maricopa County Regional Trail System when planning trails
- Maintain floodways as open space while allowing floodplain areas to be developed through appropriate floodplain permits and design considerations.
- Work with the Town of Buckeye and Gila Bend to coordinate regional trails and open space efforts.



## Open Space Inventory

### *Dedicated Open Space*

Dedicated open spaces are areas under public ownership, excluding State Trust and non-dedicated BLM lands, which have unique environmental and physical qualities. In Maricopa County, dedicated open space exists as regional parks, wilderness areas, wildlife areas, national monuments, and the Tonto National Forest. Proposed open space is discussed later in this section.

For this inventory, open space is separated into seven categories, which are derived from the National Recreation and Park Association (NRPA):

**Neighborhood Parks:** A neighborhood park is defined as an area of 15 or more acres, which is suitable for intense recreational activities. No dedicated neighborhood parks are located in the Old U.S. Highway 80 planning area.

**Community parks:** A community park is defined as an area 25 acres or larger that has a diverse environmental quality and may include areas suitable for intense recreational activities. No dedicated community parks are located in the planning area.

**Regional Parks and Recreation Areas:** A regional park is defined as an area 1,000 acres or larger that is suitable for nature-oriented recreation. Buckeye Hills Recreation Area is approximately two miles outside the planning area. At 4,474 acres, the Buckeye Hills Recreation Area offers over 56 picnic areas, target shooting with a range that accommodates 15 shooters at a time, a staging area for horseback riding, and two restroom facilities. The main entrance is off State Route 85, on the east side of the park. The Maricopa County Planning and Development Department will continue its long standing policy of coordinating and assisting the Maricopa County Parks and Recreation Department to determine when and where park expansion and/or acquisition would best serve county residents.

**Special Use Parks:** Special use parks may include plazas, civic malls, town squares, historical sites, small parks, botanical gardens, zoos, fairgrounds, outdoor museums, or outdoor amphitheaters. Gillespie Dam is a considered a special use park. There are no designated trails or parking areas, but the public is able to access the site by walking along the dam and canal embankment.

**Conservancy Areas:** The NRPA defines conservancy area to mean the protection and management of natural or cultural environments with recreational use as a secondary objective. Conservancy areas within Maricopa County include areas dedicated as municipal preserves, wildlife areas, wilderness areas, national monuments, and national forests. In most cases, the conservancy areas are managed for conservation purposes by the Arizona Game & Fish Department, BLM, or the USFS. Several conservancy areas are located near the planning area including the Woolsey Peak Wilderness Area (64,000 acres), Signal Mountain Wilderness Area



## INVENTORY AND ANALYSIS

(13,350 acres), North Maricopa Mountains Wilderness Area (63,200 acres), and the Sonoran Desert National Monument (496,000 acres) (see **Figure 13-Open Space, Trails, and Access Areas**).

Other conservancy areas in the planning area include the Robbins Butte Wildlife Area (1,636 acres), Powers Butte Wildlife Area (1,200 acres), and the Arlington Wildlife Area (938 acres). Managed by the Arizona Game and Fish Department, each wildlife area is an important consideration for open space planning. These wildlife areas provide wildlife viewing opportunities and possible trail connections. Furthermore, each wildlife area is located along the Gila River which is designated as a portion of the Maricopa County Regional Trail.

**Linear Parks:** A linear park (which can include trails) is defined as an area developed for one or more varying modes of recreational travel, such as hiking, biking, horseback riding, cross-country skiing, canoeing, and pleasure driving. The Maricopa County Parks and Recreation Department maintains over 150 miles of trails within the existing regional parks. The Buckeye Hills Recreation Area provides the best opportunity to increase the amount of linear parks in the area, especially due to the Gila River riparian areas. Furthermore, the Maricopa County Regional Trail System identifies the Buckeye Hills Recreation Area as an important connection for future or proposed open space areas or trails.

**Other Types of Regional Open Space:** Several other open spaces in Maricopa County may be considered important, but are not necessarily dedicated or publicly accessible. These areas include golf courses; agriculture; and designated open space in master-planned developments, subdivisions, and other types of development. While most land in this category is not accessible to the public, it is nonetheless important for visual and aesthetic purposes.

No golf courses have been approved in the planning area, but agricultural areas make up a large portion of the planning area. The current Buckeye General Plan notes that new master planned communities are encouraged to provide pathway/trail connections, playing fields, and recreation centers open to the public. Providing new open space resources as development occurs is considered important to Buckeye's open space plan.















### Power Plants

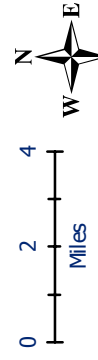
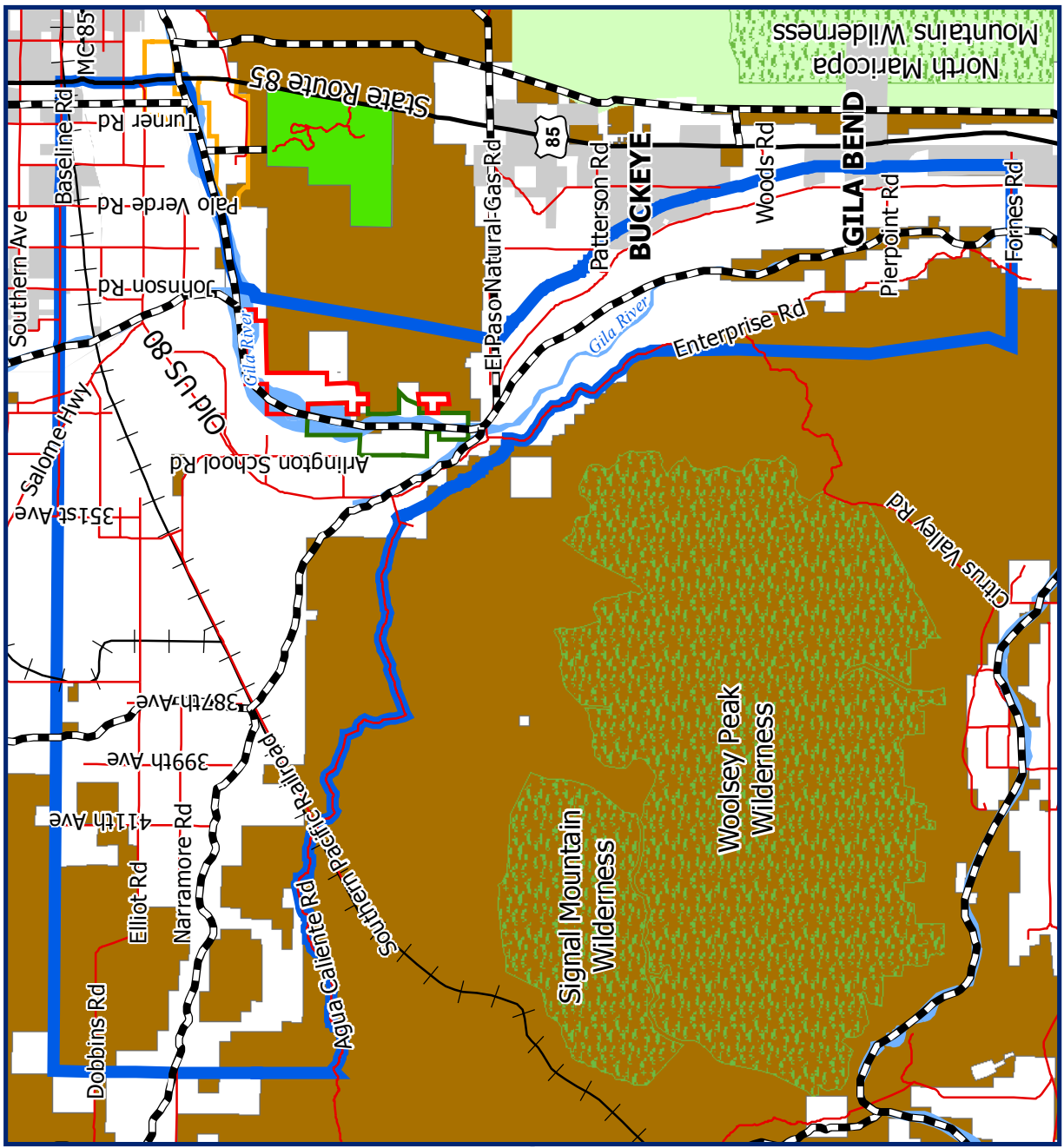
In December, 1996, the Arizona Corporation Commission (ACC) passed the Retail Electric Competition Rule which essentially created energy deregulation in Arizona. Since that time, three merchant power plants have been entitled within the planning area. The types of merchant power plants permitted are combined cycle natural gas-fired facilities, which require large amounts of water for steam generation and cooling. Most of the plants opted to retire farmland and the appurtenant Irrigation Grandfather Rights to obtain their converted Type 1 groundwater rights. As an environmental offset to the possible water supply and air quality impacts, the power

# Open Space, Trails, and Access Areas

Figure 13

## Legend

-  Arterial Roadway
-  Highway
-  Railroad
-  Maricopa Co. Regional Trail System\*
-  Old U.S. Highway 80 Area Plan
-  River
-  Arlington Wildlife Area
-  Powers Butte Wildlife Area
-  Robbins Butte Wildlife Area
-  Buckeye Hills Recreation Area
-  BLM (Passive Open Space)
-  Wilderness Areas (BLM)
-  Sonoran Desert Nat'l Monument
-  Incorporated



Vicinity Map



Maricopa County  
Planning and Development  
501 N. 44th St., Ste. 100  
Phoenix, Arizona 85008

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**ONE STOP SHOP**



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\* Segments of Maricopa Co. Regional Trail System: 57, 58, 85, 97, 100, 102, and 113.





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plants designated their water properties as open space. The combined amount of open space within the planning area is nearly 8,000 acres, most of which will be revegetated and/or used as wildlife habitat.

### *Proposed Open Space*

The Maricopa County Comprehensive Plan separates proposed open space into publicly-owned and privately-owned proposed open space. In order for proposed open space to become dedicated open space, land must be dedicated using preservation techniques that respect the property rights of the landowner. It is important to note that Arizona law allows proposed open space to be developed at a maximum of 1 d.u./acre.

### Publicly Owned Proposed Open Space

Publicly owned proposed open space may include State Trust and BLM lands which are not dedicated as wildlife areas, wilderness areas, or national monuments. FCDMC also owns land within the planning area to help prevent flooding. These publicly owned proposed open spaces are intended to be planned and managed to protect, maintain, and enhance their intrinsic value for recreational, aesthetic, and biological purposes. If and when appropriate, it is intended that publicly-owned proposed open space should be protected through policy, easements, and/or acquisition. As mentioned earlier, half of all land within the planning area is publicly owned by the State Land Department, BLM, and FCDMC. General land ownership is illustrated in **Figure 4 – Land Ownership and Management**.

BLM land will be integral part of the open space plan for the Old U.S. Highway 80 area. No BLM land within the planning area is currently listed for trade or disposal. BLM land has many uses like recreation, wildlife viewing, livestock grazing, biking, hiking, motorized and non-motorized access, as well as utility corridors to meet the needs of the growing population. All of the BLM land within the planning area is currently permitted for livestock grazing due to limited access to the public. However, as population near and around BLM begins to increase, so will the need to diversify the types of uses allowed. BLM recognizes the need to meet the needs of various public interests, and is therefore updating its resource management plan.

State trust land is scattered throughout much of the northern portion of the planning area. In 1996, Arizona enacted the Arizona Preserve Initiative (API) to give the Land Department authority to reclassify, lease, and sell state trust lands in and around urban areas to local governments and nonprofit organizations as open space for conservation purposes. In 1997, amendments to the API created a public-private matching grant program under the State Parks Board for acquisition or lease of trust lands for conservation. The McDowell Sonoran Preserve, adopted by the City of Scottsdale, is an example of API implementation.

The FCDMC provides flood and storm water management services for the benefit of the residents of Maricopa County, and is responsible for administration of the





Maricopa County Floodplain Regulations. The FCDMC has authority, provided by the state, to acquire property through eminent domain, purchase, donation, dedication, or exchange. However, this is done only for flood control projects such as constructing a basin or channel; not for recreational or active open space purposes. The FCDMC manages portions of the Gila River north of the Gillespie Dam. Although FCDMC properties are not technically considered dedicated open space, FCDMC properties will be designated as proposed open space for land use purposes and because land is unlikely to be developed.

### Privately Owned Proposed Open Space

In the planning area, privately owned proposed open space exists either in floodways or on slopes over 15 percent. The dedication of private land as open space typically only occurs in subdivisions and DMPs as public or private easements and tracts. Developments may also establish natural open space tracts that provide trail linkages and preserve natural drainage ways. As noted earlier, proposed open space can be developed at residential densities up to 1 d.u./acre. Pragmatically, however, development in floodways and steep slope areas is very costly and difficult. Therefore, Maricopa County Planning and Development will support the use of density transfers in order to allow land owners to make the best use of their property while preserving sensitive areas.

### Proposed Open Space Considerations

As noted, regional planning for open space is based on plans like the Buckeye General Plan, the MAG Desert Spaces plan, Area Drainage Master Plans and Water Course Master Plans, the Maricopa County Regional Trail System Plan, and ROSS plan, and on the physical constraints of the land. In all, each plan provides important recommendations for possible trail connections, areas of conservation or retention, biking and hiking opportunities, and possible protection of hillside, washes, rivers, and mountains. Buckeye's General Plan recommends at least six acres of accessible public open space for every 1,000 in population. The *Desert Spaces* concept plan considers the Gila River, Hassayampa River, and Centennial Wash as the spine of the open space system and other regionally significant rivers and washes as arms that connect major open space destinations. Area Drainage Master Plans provide critical information related to flood potential of major rivers and washes, which can also serve as open space areas. The Maricopa County Regional Trail System Plan is a regional plan for open space involving many agencies. The trail system crosses many jurisdictional boundaries and Maricopa County is committed to implementing the plan which will benefit all county residents. Furthermore, the ROSS plan is an important part of the Maricopa County Regional Trail System Plan.

### **Open Space Needs Assessment**

The Old U.S. Highway 80 planning area currently does not have any public community parks. On the other hand, some dedicated open space areas exist in the form of conservancy areas. The planning area is bordered by numerous wilderness



## INVENTORY AND ANALYSIS

areas and wildlife areas and spectacular views of the surrounding mountains. In addition, areas along the Gila River provide activities such as fishing, water activities, camping, picnicking, and wildlife observation.

Some communities find that schools and their recreational facilities are an important source of open space. When the future school-age population in the planning area becomes great enough to warrant a new school, there may be opportunities to plan for associated recreational areas. Some school districts are willing to share facilities such as baseball, softball, soccer fields, and gymnasiums with public groups for recreational purposes under agreements.

### Designation of Access Points to Open Space Areas and Resources

BLM is currently updating its resource management plan which accounts for the diverse range of uses on public land including livestock grazing, non-motorized and motorized access, hiking, biking, wildlife habitats, and utility corridors. In the planning area, as new development occurs it will be critical to preserve access to BLM wilderness areas, access to portions of the Gila River, and the Buckeye Hills Recreation Area. To this end, Maricopa County will encourage communication between developers, public land managers, and the community by encouraging BLM participation during the planning and development process.

Numerous planning documents provide recommendations on how to provide access open space areas in Maricopa County. One of which is the *Desert Spaces: Environmentally Sensitive Development Areas - Policies and Design Guidelines*<sup>18</sup>, which recommends developing safe public access to passive recreational activities and trails linking open spaces, and between existing park facilities and new development areas. Another is the ROSS plan which recommends providing sufficient, convenient access that is highly visible. Finally, the *City of Phoenix's Sonoran Preserve Master Plan*<sup>19</sup> provides a baseline for how to implement open space connections along the edges of dedicated open space areas. Treatment of open space edges requires careful attention due to the potential impact of adjacent development. Access and wildlife corridors are two important issues relating to the open space edges. Open space access should be convenient, identifiable, unobstructed. Private residential development often backs up to open space edges with no accommodation for public access. Possible solutions include developing streets that form the edge of the preserve or designing cul-de-sacs ending at the preserve edge to allow physical and visual access. For wildlife, the edge should not be abrupt. The open space edge is a critical point of interaction between the built and natural environments and requires sensitive consideration.

<sup>18</sup> Desert Spaces: Environmentally Sensitive Development Areas - Policies and Design Guidelines (Maricopa Association of Governments, 2000).

<sup>19</sup> Sonoran Preserve Master Plan: An Open Space Plan for the Phoenix Sonoran Desert (City of Phoenix Parks, Recreation

## WATER RESOURCES

Water supply and quality are important considerations in planning for future growth. State law requires that Maricopa County address water resources by including an inventory of county water supplies in its comprehensive plan, and calculations of historic and projected water demand. This section describes the physical aspects of rivers, streams, groundwater basins and subbasins in and around the Old U.S. Highway 80 planning area, as well as historic and projected water demand, future water supply and policy implications.

### Water Supply Inventory

The following describes water supplies in the Old U.S. Highway 80 planning area:

#### *Surface Water*

The planning area is drained by numerous washes that flow towards the Gila River. Dry washes in the planning area flow only in response to rainfall events and may overtop during heavy rainfall events. Flooding is more likely to occur during the monsoon season lasting from July through September, but may also occur during the winter storms from December through February.

The **Gila River**, which drains most of southern and central Arizona, originates in western New Mexico and enters Maricopa County directly east of the Estrella Mountains. The Gila River flows northwest between the Estrella Mountains and South Mountain before continuing west, south, and southwest until it exits Maricopa County near Agua Caliente in the Hyder Valley. The river is regulated by Ashurst-Hayden Dam, which diverts water for the San Carlos Irrigation Project. Between the dam and the confluence with the Salt River south of Avondale, the Gila River is ephemeral, flowing mainly in response to flooding or reservoir releases upstream. West of the confluence with the Salt River, the Gila flows perennially due to effluent discharges in the Salt River from the City of Phoenix 23rd and 91st Ave. wastewater treatment plants, which are discussed later. The Buckeye Irrigation Company and the Arlington Canal Company divert much of this water for agricultural irrigation, while some is diverted for use by the Palo Verde Nuclear Generating Station near Wintersburg. The average annual flow of the Gila River at Gillespie Dam is approximately 96,100 acre-feet.

The **Hassayampa River** is noteworthy more for groundwater replenishment than as a surface water supply. The river originates in the Bradshaw Mountains south of Prescott and drains an area of approximately 1,470 square miles in west-central Arizona. The Hassayampa enters Maricopa County north of the Town of Wickenburg and flows south across the Hassayampa Subbasin, joining the Gila River east of Arlington. Approximately seven miles south of Wickenburg, almost the entire runoff of the river sinks into the bed of the river and recharges the aquifer system. This occurs because of a major fault that crosses the Hassayampa at a place known as



## INVENTORY AND ANALYSIS

the Narrows. Upstream of this site, at Box Dam, the average annual flow of the river is approximately 17,400 acre-feet.

**Waterman Wash**, which drains the Rainbow Valley Subbasin, originates ten miles west of the unincorporated community of Mobile in the southwestern part of the county. The unregulated ephemeral stream joins the Gila River east of Buckeye. The average annual flow of the wash is quite small. **Centennial Wash**, a large ephemeral stream, begins a few miles north of Aguila, flows southwest through McMullen Valley and then southeast across the Harquahala Plain. A small portion of the wash enters and exits in the far northwestern corner of Maricopa County, then reenters the county south of Interstate 10, traveling southeast until it joins the Gila River near Arlington. The average annual flow of Centennial Wash near Arlington is approximately 2,700 acre-feet.

### Central Arizona Project

Since 1985, Colorado River water has been transported to the Phoenix area via the Central Arizona Project (CAP) canal. The CAP was constructed to help Arizona conserve groundwater supplies by importing surface water. The relatively high cost of CAP water and lack of infrastructure needed to convey this water to distant users prevents widespread use. However, it is projected that full utilization of CAP water supplies in Arizona will be reached by the year 2040. Currently, no CAP water is being used in the planning area.

The quality of CAP water, although naturally high in dissolved solids, is acceptable for most uses with appropriate treatment. Imported from the Colorado River, CAP water has become a major source of water in the Valley. CAP water is not currently used in the planning area but is used as a primary water source by local municipalities.

Several jurisdictions bordering or near the planning area have CAP allocations. As of 2005, the Town of Buckeye has an annual CAP allocation of 25 acre-feet of water for municipal and industrial (M&I) purposes.<sup>20</sup> Despite the 25 acre-feet of CAP allotment, Buckeye gets all of its drinking water from ten city wells. The Water Utility of Greater Buckeye, Inc. has an annual CAP allocation of 43 acre-feet for M&I purposes and the Water Utility of Greater Tonopah, Inc. has an annual CAP allocation of 64 acre-feet for M&I purposes.

### *Groundwater*

The primary source of water in the planning area is groundwater, whose withdrawal and use is governed by the 1980 Arizona Groundwater Management Act. The northern portion of the study area is within the Phoenix Active Management Area (AMA). Areas south of Gillespie Dam are located outside of the Phoenix AMA. Within the AMA, The ADWR oversees the groundwater rights system; prohibits the

<sup>20</sup> An acre-foot of water contains approximately 326,000 gallons and is roughly the amount of water needed to serve a family of five for one year.



development of new farmland; requires new subdivisions to have long-term, dependable supplies; and requires measuring and reporting of groundwater withdrawals. These provisions were put into place to help the Phoenix area achieve safe-yield by 2025. To achieve safe yield, the amount of groundwater pumped from AMA aquifers on an average annual basis must not exceed the amount that is naturally or artificially recharged.

**Figure 14-Groundwater Depth** shows the depth to groundwater, based on ADWR well information, and shows basins and subbasins within the planning area. The northern and northeastern portion of the planning area has a depth to groundwater ranging from 0 to 100 feet and generally lies within the **West Salt River Valley Subbasin**. The western portion of the planning area has a depth to groundwater ranging from 0 to 300 feet and generally lies within the **Hassayampa Subbasin**. Shallower depth to groundwater has been recorded near the Gila River (in some cases less than ten feet). ADWR has recorded this phenomenon due to waterlogged areas near downtown Buckeye. The southern portion of the planning area has a depth to groundwater of 100 to 200 feet and is within the **Gila Bend Basin**. Only the West Salt River Valley Subbasin and Hassayampa Subbasin are within the Phoenix AMA.

The West Salt River Valley Subbasin covers most of the western part the Phoenix metropolitan area. Groundwater availability in the West Salt River Valley Subbasin is approximately 59 million acre-feet (MAF) to 1,200 feet below land surface. The Hassayampa Subbasin, covering approximately 1,200 square miles, is located primarily in northwest Maricopa County, although it does extend into the southwest portion of the county. It is estimated that approximately 4.8 MAF of groundwater are available to a depth of 1,200 feet below land surface. The Gila Bend Basin is located in southwestern Arizona and contains 1,280 square miles. The Arizona Department of Water Resources (1988) estimates that there are approximately 27.6 MAF of recoverable groundwater to 1,200 feet below land surface.

In the West Salt River Valley Subbasin, groundwater enters as underflow from the Lake Pleasant Subbasin, near the Vulture Mountains, and the Maricopa-Stanfield Subbasin in Pinal County, although groundwater pumping in the Maricopa-Stanfield Subbasin in Pinal County has diverted some of this underflow. Most of the groundwater in the West Salt River Valley Subbasin flows toward two large cones of depression located in the Luke Air Force Base area and in the Deer Valley area near the Hedgpeth Hills. However, some groundwater still leaves the subbasin and flows into the southern part of the Hassayampa Subbasin, between the White Tank Mountains and Buckeye Hills.

In the Hassayampa Subbasin, groundwater enters from the northeast and travels south into the Tonopah and Arlington areas. After passing through a bedrock constriction between the Belmont Mountains and the White Tank Mountains, most groundwater flows southwest toward two cones of depression created by



# Groundwater Depth

## Figure 14

**Legend**

- Arterial Roadway
- Highway
- Railroad
- Old U.S. Highway 80 Area Plan
- ▭ Basin and Subbasin Boundary

**Groundwater Depth**

- 0 - 50 Feet
- 50 - 100 Feet
- 100 - 200 Feet
- 200 - 300 Feet
- 300 - 400 Feet
- 400 - 500 Feet

0 2 4 Miles

N  
W E S

Vicinity Map

**ONE STOP SHOP**

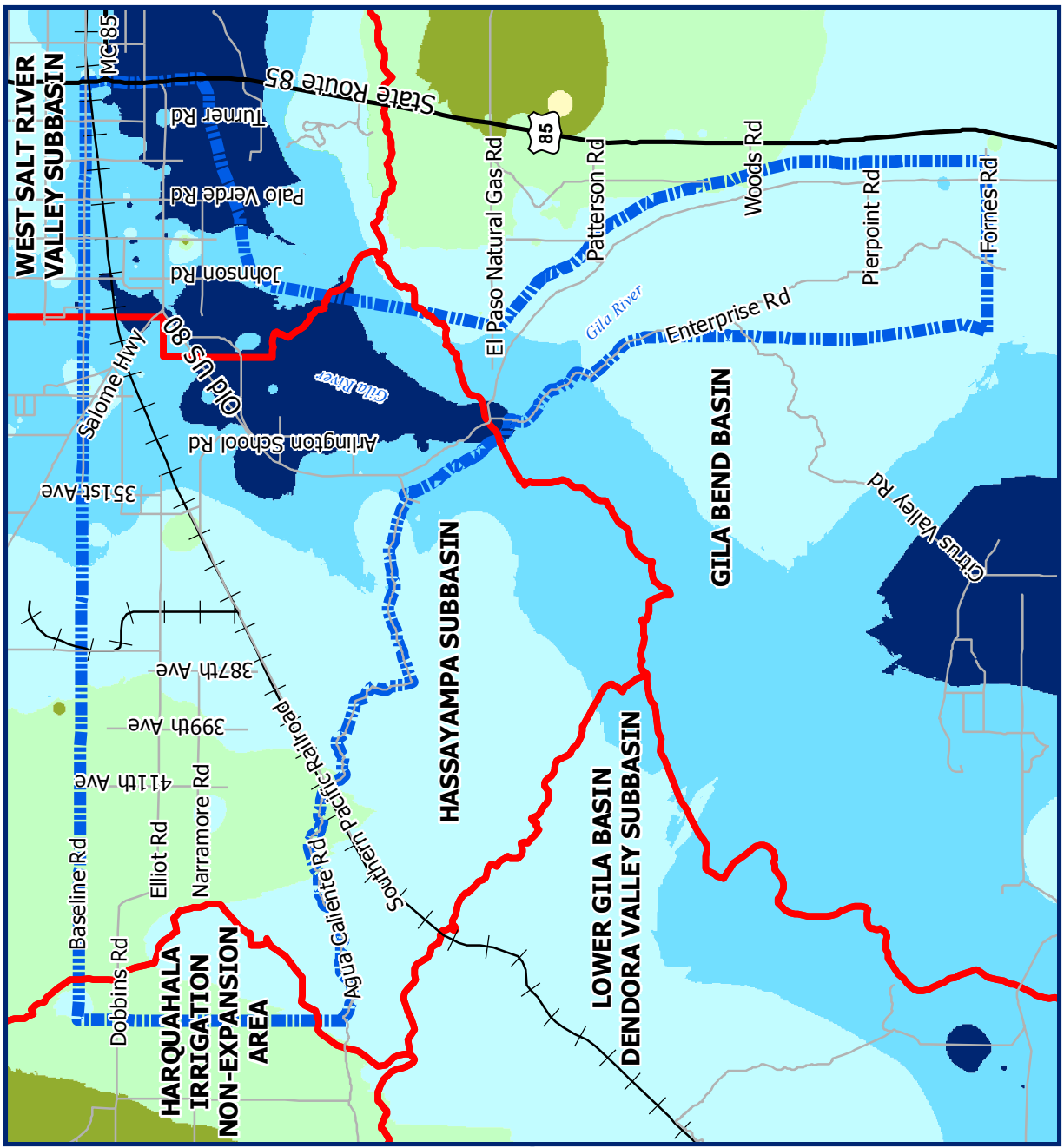
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groundwater pumping for agricultural uses. These cones of depression are located in the Tonopah and Centennial Wash areas. Some groundwater leaves the basin into the northern part of the West Salt River Valley Subbasin. Groundwater flow into and out of the subbasin has been calculated at an average of approximately 29,000 acre-feet annually.

In the Gila Bend Basin, groundwater generally follows the flow of the Gila River, especially since the largest source of recharge in the basin are flood events. The Gila River enters the Gila Bend Basin at its northern end near Gillespie Dam, flows south to the Town of Gila Bend, turns west and exits the basin at Painted Rock Dam. Pumping for irrigation has created several cones of depression in the area around Gila Bend, Cotton Center, and Paloma (Theba). Historically, most of the groundwater pumped in both subbasins and the Gila Bend Basin have been used for irrigation. Groundwater pumping in the West Salt River Valley subbasin began in the late 1800's, consequently groundwater quality within the West Salt River Valley has been somewhat tainted due to point and non-point contamination.

In general, groundwater in the northern part of the planning area is of better quality than groundwater in the southern portion of the planning area. As mentioned earlier, the West Salt River Valley Subbasin is generally considered to be lower-quality than the Hassayampa Subbasin. However, this does not discourage pumping groundwater from the West Salt River Valley Subbasin because municipalities like Goodyear, Buckeye, Litchfield Park, and El Mirage are dependent upon its availability. Various test wells throughout the Tonopah area indicate that the Hassayampa Subbasin is a good source of groundwater. Testing of arsenic, barium, chromium, fluoride, selenium, sodium, and nitrates are all below maximum containment levels established by the Environmental Protection Agency (EPA) and/or the state of Arizona. Testing at one well indicate high nitrate levels of 7.6 parts per million (ppm) which is still below the maximum containment level of 10 ppm. Groundwater in the Gila Bend Basin is generally considered to be poor. Testing indicates high levels of Total Dissolved Solids (TDS) ranging from 900 milligrams per liter (mg/l) to 5,000 mg/l. The EPA has established a secondary maximum contaminant level (SMCL) of 500 mg/l for TDS, primarily for aesthetic reasons. Groundwater recharge occurs as streambed recharge from the Gila and Hassayampa rivers, through natural flood flows in ephemeral streams, from mountain front recharge, from incidental recharge of agricultural and urban irrigation, and leakage from canals and artificial lakes.

### *Effluent (Treated Wastewater)*

In the Phoenix AMA, effluent is used for landscape irrigation (mainly golf courses), cooling purposes at power plants, irrigation of crops, and riparian areas downstream from the 91st Ave. wastewater treatment plant. Accounting for most of the effluent production in the Phoenix-metropolitan area, the 91st Ave. wastewater treatment plant (WWTP) which has a capacity of day 200,000 acre-feet annually (179 million gallons per). Within the planning area, PVNGS has contract with the 91st Ave.



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WWTP to receive up to 60,000 acre feet per year of effluent, through the year 2027. Effluent production in urbanized areas of Maricopa County is increasing, and by 2010 it is projected that 374,000 acre-feet of effluent will be generated annually. Effluent production in rural areas is virtually nonexistent due to the higher occurrence of septic systems.

Due to the need for water conservation and to reduce reliance on groundwater, the Buckeye Irrigation District, Arlington Canal Company, and the Roosevelt Irrigation District have been commissioned to deliver effluent water to cropland throughout the planning area.

### Issues

#### *Water Availability*

The Town of Buckeye's main water source is supplied by groundwater pumped from the West Salt River Valley Subbasin and The Hassayampa Subbasin. The fresh water is stored in the service reservoirs located at various places and elevations throughout the Town's three water service areas, goes through treatment, and is then distributed. Buckeye states that the Hassayampa subbasin water resource is being tapped for blending with lower-quality West Salt River Subbasin water. In order to meet future demand, the Town of Buckeye will most likely explore options like the Hassayampa Subbasin and CAP allocations.

The Town of Buckeye works closely with private water companies to serve homes in the area. One water company, the Water Utility of Greater Tonopah provides water to approximately 300 customers in the Tonopah/Arlington area. Most water delivery is outside the planning area, but some deliveries are made to properties within the Phoenix Valley West subdivision and the Hickman's Egg Farm. In order to extend water services to other areas in the Tonopah/Arlington area, CC&N extensions would have to be filed with the Arizona Corporation Commission which oversees the approval of water services in unincorporated areas of Maricopa County in conjunction with ADWR and Arizona Department of Environmental Quality requirements. The Water Utility of Greater Buckeye also provides water to areas east of the planning area, but closer downtown Buckeye.

#### *Historical Water Demand*

Historical Water Demand can be estimated from well records and pumpage information maintained by the Arizona Department of Water Resources (ADWR). ADWR divides wells into two categories: non-exempt and exempt. Non-exempt wells are those that have a pump capacity of 35 gallons per minute or greater and exempt wells are those that have a pump capacity of 35 gallons per minute or less. If within an Active Management Area (AMA), non-exempt wells are required to report annual pumpage since these wells are typically used for irrigation or belong to a city, town, or private water company. Exempt wells are not required to report



annual pumpage because these smaller wells are generally for home use or stock watering purposes.

Based on ADWR well data in 2002, approximately 120 non-exempt wells in the planning area reported pumping a total of 35,433 acre-feet of groundwater. ADWR well data indicates that from 1984 to 2002, non-exempt wells pumped an average of 34,000 acre-feet per year. Many of these wells are operated by local farmers but some are operated by users like the Buckeye Irrigation District, Arlington Canal Company, Duke Energy, Sempra Energy, and Pinnacle West Corporation. In 2002, approximately 400 exempt wells were either approved or installed within the planning area. Because they are exempt from ADWR reporting requirements, it is assumed that each well pumped one acre-foot of water per year. Of the reported 400 exempt wells, 85 wells were approved or installed from year 2000 to 2003, meaning the planning area added on average 21 new exempt wells per year.

### *Assured Water Supply*

To ensure protection of future water supplies, the 1980 Groundwater Management Act established Active Management Areas (AMAs) and provisions for an Assured Water Supply (AWS) Program. Under the AWS Program, new subdivisions within an AMA must demonstrate that sufficient water of adequate quantity and quality are available to meet the proposed development uses for 100 years. This includes subdivisions for residential, commercial, or industrial uses. In 1995, the AWS Program was updated by requiring new subdivisions within AMAs to base their development on renewable water sources. Renewable water sources include surface water, Central Arizona Project water, and effluent. The 1995 rules also raised the physical availability depth-to-water standard from 1,200 to 1,000 feet below land surface. The intent of the AWS Program is to minimize groundwater use, the impact of groundwater overdraft, and maximize the use of renewable water supplies.

In places outside of water utility service areas, groundwater is the primary source of water and making use renewable supplies is difficult. However, a developer has two options for meeting AWS requirements: (1) purchase a 100-year supply of "extinguishment credits" by retiring agricultural land using groundwater or (2) authorize the use of groundwater if the developer subscribes new homes to the Central Arizona Groundwater Replenishment District (CAGRDR). Over the 100-year period, the CAGRDR agrees to artificially recharge groundwater with CAP supplies. However, the recharge of groundwater does not necessarily take place within the same subbasin from which groundwater was withdrawn which may cause land subsidence or earth fissuring. Subdivisions and water providers pay an annual assessment to the CAGRDR based on the amount of groundwater used. No recharge sites are located in the Old U.S. Highway 80 planning area.

### *Recharge Facility*

In an attempt to utilize CAP allotments and reduce reliance on groundwater, a coalition of Western Valley Central Arizona Project Subcontractors (WESTCAPS) has



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conducted a study to identify a regional solution for the treatment, storage, and delivery of CAP water. As part of the study, WESTCAPS has elected to install a recharge and recovery project to economically store and deliver CAP water. The proposed recharge facility will be located outside the planning area but will artificially recharge the Hassayampa Subbasin, thereby storing CAP water within the subbasin. The CAP water would then be recovered downstream and delivered to various water treatment facilities which can then be delivered to western Maricopa County residents. The WESTCAPS proposal has several advantages which include improved water quality, reduced dependence upon groundwater supplies, less potential for land subsidence, utilizes CAP allocations, and meets AWS provisions for making use of renewable supplies.

### *Water Quality*

Most groundwater in the metropolitan-Phoenix area contains TDS concentrations between 500-1,000 mg/l, and much of the planning area is no exception. As note, the secondary maximum contaminant level (SMCL) TDS is 500 mg/l. From the perspective of human health, dissolved solids are less of a concern than pesticides or nitrates. Dissolved solids are considered secondary contaminants that affect taste, smell, and appearance of drinking water. TDS is an indicator of salinity or hardness of the water. In the West Salt River Valley Subbasin, TDS concentrations south of I-10 had a higher concentrations (median = 790 mg/L) than areas north of I-10 (median = 316 mg/L).<sup>21</sup> In the Gila Bend Basin, total dissolved solids concentrations generally exceed the SMCL 500 mg/l for TDS with the highest concentrations in the northeastern part of the basin between Gillespie Dam and Cotton Center. In the Hassayampa Subbasin, TDS concentrations are generally considered better than the West Salt River Valley Subbasin.

Water quality testing of various wells throughout the Tonopah area was conducted by the Water Utility of Greater Tonopah, Inc. Test results showed fluoride concentrations in areas north of the planning area ranged from 1.1 to 3.35 mg/l. The EPA's primary MCL for fluoride is 4.0 mg/l and the recommended SMCL (secondary MCL), an aesthetic standard, is 2.0 in order to prevent mottling of teeth. Water quality testing indicated some arsenic, ranging from 7.3 to 24 parts per billion (ppb). In January 2001, the EPA lowered the arsenic standard from 50 ppb to 10 ppb, with an effective date of January 23, 2006. Consequently, it is noted that the water company will install treatment measures to lower the arsenic levels. A nitrate concentration ranging from 1.1 mg/l to 7.6 mg/l was observed, however drinking water supplies are required to have less than 10 mg/l of nitrate.

### *Subsidence and Earth Fissures*

Land subsidence and earth fissuring have been documented in certain portions of Maricopa County and have caused water quality problems, flooding, damage to well casings and building foundations. In areas where extensive pumping has

<sup>21</sup> Ground-Water Quality in the West Salt River Valley, Arizona 1996–98—Relations to Hydrogeology, Water Use, and Land Use, U.S. Dept. of the Interior, 2002.



significantly lowered groundwater levels, subsidence and cracking of the land surface can occur. Groundwater depletion can make it economically infeasible to pump water in some cases. According to studies by ADWR, from the mid 1950’s to 1998 water levels near Tonopah have declined by as much as 70 feet and water levels in the Centennial Wash area have declined by as much as 90 feet. Future subsidence and fissuring could be an issue due to groundwater overdraft in these areas.

## Supplying Future Population

On a regional scale, effluent treatment will continue to be enhanced, making it an increasingly valuable source of water in place of groundwater. In June 2001, the Arizona Department of Environmental Quality adopted new standards that allow private residential reuse of gray water if certain standards are met.<sup>22</sup>

Groundwater will likely be the primary source of water used in the Old U.S. Highway 80 area. Treated effluent and poor quality groundwater will be supplied by irrigation districts to the nearby cropland. CAP water, while not currently used in the planning area, could be recharged into the Hassayampa Subbasin near the Tonopah Recharge Facility then withdrawn from the subbasin in order to serve customers in the west valley. Future water resource planning in the Old U.S. Highway 80 area will need to be coordinated with regional planning efforts to consider water quantity, quality, conservation methods, and flood control issues. **Table 21: Water Supply** summarizes available water supplies within the planning area and **Table 22: Water Demand** summarizes annual water demand by various users within the planning area.

**Table 21: Water Supply**

Water Source	Amount Available
Hassayampa Subbasin	0.57 MAF (12% of 4.8 MAF total in subbasin)
West Salt River Valley Subbasin	1.2 MAF (2% of 59 MAF total in subbasin)
Gila Bend Basin	1.1 MAF (4% of 27.6 MAF total in basin)
City of Phoenix 91 <sup>st</sup> Ave. WWTP	200,000 acre-feet annually
CAP allocations	132 acre-feet annually

Source: Arizona Department of Water Resources and Central Arizona Project data

**Table 22: Water Demand**

User	Annual Amount
PVNGS (also delivers water to Redhawk Power Station)	60,000 acre-feet
Non-exempt well pumpage	34,000 acre-feet
(includes pumping by local farmers, Buckeye Irrigation District, Arlington Canal Company, Duke Energy, Sempra Energy, APS, and Pinnacle West Corporation)	
Exempt well pumpage	400 acre-feet
<b>Total</b>	<b>94,400 acre-feet</b>

Source: Arizona Department of Water Resources

<sup>22</sup> Arizona Administrative Code R18-9-711, Reclaimed Water General Permit for Residential Use.





## COST OF DEVELOPMENT

This section provides an overview of fiscal considerations relating to future growth in the Old U.S. Highway 80 planning area. The Cost of Development element is one of several elements added to the Maricopa County Comprehensive Plan to comply with the Growing Smarter and Growing Smarter Plus laws. Policies and strategies are identified that Maricopa County will use to require development to pay its fair share toward the cost of additional public facility needs generated by new development. In addition, existing techniques are identified that can be used to fund additional public services associated with new development, and policies to ensure that any funding mechanism(s) bear a reasonable relationship to the financial burden imposed on the County.

Cost of Development goals and policies will be integrated with other plan elements, particularly the Growth Areas element. The Cost of Development element as presented in this plan will provide the preliminary basis for more detailed future studies of funding techniques and public costs.

### Existing and Future Conditions: Demographics

The Old U.S. Highway 80 planning area's population grew from 800 in 1990 to 1,150 in 2000. This represents an increase of over 44% in ten years. This growth rate is consistent with Maricopa County's growth rate from 1990 to 2000 which was 45%, and was the fastest growing county in the United States adding over 950,000 people.

Besides population growth, demographic characteristics are also an important consideration because it can affect public revenues from sales taxes, residential property taxes, vehicle taxes, and user fees, as well as public expenditures for services like health care, education, social services, and infrastructure. Based on demographic analysis in the Demographic Characteristics and Projections section, it is assumed a majority of the population consists of young adults with children.

**Table 6: Population Distribution by Age in Percentages** indicates that nearly 29% of planning area residents are under the age of 15, compared to 23% for Maricopa County. Also, the median age of Old U.S. Highway 80 residents, 33.1 years, is on par with Maricopa County's median age of 33.

As expected within Maricopa County and the planning area, the population will also become more diverse. U.S Census data in 1990 indicated that 86% of planning area residents considered themselves to be "White". U.S. Census data in 2000 indicated the "White" population decreased from 86% to 59% within the planning area, while the "Hispanic" population increased from 22% to 37% within the planning area. All other ethnic groups only made up four percent of the population.





## Existing and Future Conditions: Economics

Some highlights from the Maricopa County Comprehensive Plan - Cost of Development element are included in the following discussions; some which may pertain to the Old U.S. Highway 80 planning area.

### *Issues and Considerations*

- As growth occurs in Maricopa County—primarily at the urban fringe—the cost to service development in rural areas such as the Old U.S. Highway 80 region generally increases.
- Maricopa County’s diversifying and aging population might affect County revenues and expenditures with respect to providing County services in unincorporated rural areas. New programs may be needed to serve the diversifying and aging population.
- Certain development costs are higher in rural areas like Old U.S. Highway 80 than in urban areas. For example, road maintenance, schools, busing, and emergency services are generally more expensive to develop and maintain in rural areas. Costs associated with growth are higher for development that is far from existing services and infrastructure.

### *Available Funding Techniques*

It is important to identify all financial mechanisms available to local governments (including Maricopa County) to help fund the additional public service and infrastructure costs of new development. A listing of these techniques is provided in this section. An in depth discussion of these funding techniques is included in the Maricopa County Comprehensive Plan.

- Property tax
- Specialty/industry tax
- User fees
- Bonds
- Lease purchase finance
- Dedication
- Development agreement
- Intergovernmental agreement
- Development fee/exaction
- Special districts

### Improvement District

An Improvement District is a program offered to residents of unincorporated Maricopa County to provide roadway maintenance or other improvements. To form an improvement district, residents must first submit a request for a petition to the MCDOT Office of the Superintendent of Streets outlining the improvements desired (e.g., street paving, water or sewer lines, street lights, etc.). A petition, which includes the district boundary and a cost estimate, would then be returned for



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signatures of either a majority of persons owning real property within the district or the owners of 51% or more of the real property within the district. Proceedings and hearings as required by state law are conducted with the Maricopa County Board of Supervisors serving as the district Board of Directors. All costs associated with Improvement Districts are paid for by those property owners through property assessments. The process of organizing an improvement district is provided by the Maricopa County Department of Transportation.

### **Current Cost Sharing Efforts**

Although Maricopa County does not have an impact fee ordinance, there are ways in which new development is required to pay for and provide facilities and services associated with growth. A brief discussion of these efforts follows.

#### *Urban Service Area*

The Urban Service Area exists as part of the Maricopa County Comprehensive Plan, and helps guide decision making to coordinate future development with urbanizing areas. It is based on the necessity for services and infrastructure to establish and maintain a high quality of life. The Urban Service Area doesn't exist as a designation on a map. Rather, it is based on the ability of new development to provide infrastructure and appropriate urban services to future residents at a particular location. The type of new development referred to here includes higher intensity uses such as residential densities greater than 1 d.u./acre, commercial, industrial, and mixed use development. The Old U.S. Highway 80 planning area is expected to see these higher intensity uses for the current planning horizon of 10-15 years. New urban development must demonstrate (at a minimum) that the following infrastructure and services exist or will be provided by the development:

- All necessary roads
- All necessary flood control structures
- Adequate utilities, including water, sewer, electric, and natural gas
- Adequate capacity and appropriate proximity to elementary, middle, and high schools
- Appropriate emergency service (police and fire) facilities and response time
- Adequate library facilities within appropriate proximity
- Adequate supply and proximity to parks
- Appropriate proximity to or supply of commercial and large-scale employment opportunities
- Appropriate proximity to hospital and emergency medical facilities
- Adequacy and proximity to multi-modal transportation facilities

#### Development Agreements

Development agreements are contractual arrangements between local governments and property owners regarding service and infrastructure funding. Maricopa County frequently uses development agreements, especially with respect to master planned



communities, to ensure adequate infrastructure and services are available for future residents.

## Stipulations

Stipulations are conditions or restrictions placed upon the approval of entitlements granted to landowners. Stipulations cover a wide range of issues, including requirements for services, infrastructure, and facilities. Stipulations frequently set conditions in order to begin or continue construction.

## Voluntary Contributions

Developer donations and contributions are another way in which new development helps pay for infrastructure and service costs. Voluntary contributions are used for various services, including monetary donations for regional parks and libraries, as well as property and monetary donations for schools and emergency service facilities. Contributions are beneficial because they are usually amenable to both the public and private stakeholders.



## ISSUE IDENTIFICATION

### ISSUE IDENTIFICATION

This section summarizes current planning issues identified by Old U.S. Highway 80 residents, land owners, and other stakeholders during the planning process.

#### Issue Identification Workshops and Survey Results

On October 25, 2005, Maricopa County Planning and Development Department hosted the first public workshop for the Old U.S. Highway 80 Area Plan. Approximately 70 people attended this workshop at the Palo Verde Elementary School, which introduced the area plan project and identified citizen issues. Based on this meeting and other methods of public participation, over 80 issues and comments were identified for the various plan elements. To gather detail information, stakeholders and residents decided to form a community working group in order to make recommendations to planning staff. The work group was intended to represent a cross-section of the broader community. Work group members were responsible for identifying important planning issues, reviewing planning-related information, and requesting additional information in order to provide recommendations to be included in this plan. Work group members even provided important insight into the creation of the future land use plan, which is discussed later. These issues are listed in **Table 23: Issue Identification**.

#### Issue Analysis

Regarding land use and growth areas, opinions varied about the level of density and intensity that they prefer. Suggestions ranged from low density residential to high density residential allowing up to 15 d.u./acre. Most residents feel that subdivision development should be at least one d.u./acre. At the same time, there is a strong desire to maintain the existing rural character while allowing retail and/or industrial businesses which are also rural in nature. A large number of respondents considered commercial uses, but in a planned environment, rural or suburban in nature and along major roadways like State Route 85. Many people want to preserve uses like the Hassayampa store, old Palo Verde Store/Post Office, Desert Rose Cafe, and the Arlington Cattle Company.

The principal transportation issue is access to major roadways like I-10 and State Route 85, while some residents are not in favor of paving additional roads at all. MAG is currently studying the western portions of I-10 for potential widening and a reliever along Southern Ave. to reduce congestion. Another major transportation issue is the use of heavy farm equipment on public roadways. In this case, the heavy farm equipment is becoming more of an issue due to increasing population. Heavy farm equipment often requires additional turning radius which is not generally provided. Residents feel that agricultural uses should be preserved, therefore separate lanes strictly dedicated to farm equipment are needed. Livestock grazing is not an issue at this time, but a "high density" grazing policy should be phased in to take the place of open grazing, requiring property owners to fence the



boundaries of their property to confine livestock to their property. Some think that all-terrain vehicles (ATVs) need to be restricted for noise, dust, and safety reasons.

Water availability and air quality are the key environmental issues, followed by protection of wildlife habitat and natural vegetation. The majority of survey respondents believe that the rural lifestyle should preclude the need for major water and waster water projects. Residents want to maintain lower densities in rural areas, while allowing higher densities closer to Buckeye and Gila Bend. Planned residential development in isolated areas will help insure protection of water supplies in rural areas because new subdivisions are required to demonstrate an assured water supply. Residents want to preserve the desert environment, and keep the night sky dark by minimizing lighting.

Most residents feel that economic development for commercial or employment centers are appropriate, however the type of use should be rural or suburban in nature. Residents observe the need for neighborhood commercial uses like grocery stores, gas stations, and restaurants. Some large-scale employment opportunities are available in Buckeye and Gila Bend. Agribusiness is a major economic generator for the entire state and the planning area. Stakeholders believe that additional schools are or will be needed in the near future. Information provided by local school districts indicated that new school facilities are planned outside the planning area. In the meantime, Maricopa County will continue to coordinate with local school districts in order to plan accordingly as development occurs in the region.

Preserving existing open space and planning for future open space and trails are also important issues to stakeholders. The planning area is surrounded by wilderness areas and other large tracts of BLM lands. Residents want to maintain access to surrounding public lands and develop a coordinated trail system that links open space. Coordination with BLM will be critical to maintaining access to public land.

### **Future Land Use Analysis**

Many issues were considered in the creation of the future land use plan: topography, water resources, vegetation and wildlife, availability of services and infrastructure, land ownership, consistency with municipal general plans, and resident issues, concerns, and recommendations. Many issues, concerns, and recommendations provided by residents were important to identifying possible future land uses. As noted, a working group was created to gather detailed issues and concerns. Work group members were instrumental in the creation of the future land use plan.

Residents, stakeholders, work group members involved in the planning process were very helpful in identifying a variety of growth-related issues and concerns. A list of the local issues and concerns affecting the outcome of the future land use



## ISSUE IDENTIFICATION

plan are included below. These issues are taken from **Table 23: Issue Identification.**

- Encourage higher residential densities near Buckeye and Gila Bend
- Rural type uses/employment in western portion of the planning area
- Promote employment/industrial land uses near Palo Verde NGS and along the railroad tracks
- Industrial uses should encourage a diversity of job opportunities
- Promote compatible land uses along designated emergency evacuation routes
- Encourage land uses compatible with existing Palo Verde and Arlington Elementary Schools
- Rural-190 zoning helps discourage higher densities
- Provide rural alternative to DMP/HOA living (west of Hassayampa River and north of Gillespie Dam)
- Promote power plant water rights property as Open Space and/or delineating floodplains and/or floodways as Potential Open Space
- Commercial uses that tie into Old U.S. Highway 80 and State Route 85
- Preserve Hickman's by keeping areas around this farm facility compatible
- Other comments: protect dark skies and no obstructive signage





**Table 23: Issue Identification**

## 1. Land Use & Growth Areas

- Allow varying residential densities: Rural Residential, Large Lot Residential, Small Lot Residential, and Medium Density Residential, and even Mixed Use
- Encourage higher residential densities near Buckeye and Gila Bend.
- Commercial and retail uses are needed
- Promote compatible land uses along designated evacuation routes
- Limit commercial/business developments in areas near Gila Bend and Buckeye
- Preserve agricultural uses
- Preserve Hickman's by keeping areas around this farm facility compatible
- Rural type uses/employment in the western portion of the planning area
- Rural-190 zoning helps discourage higher densities
- Encourage businesses to locate at Palo Verde Rd. and Old U.S. Highway 80
- Allow Mixed Use development
- Allow master planned communities
- Allow subdivision development
- Provide rural alternative to DMP/HOA living (west of Hassayampa River and north of Gillespie Dam)
- Keep historic uses: Hassayampa store, post office, Desert Rose Bar, and Arlington Cattle Company
- Encourage land uses compatible with existing Palo Verde and Arlington Elementary Schools
- Protect land values
- Need a hospital (medical facility should be of major importance)
- Consider regional impacts like Buckeye Airport

### Other Issues:

- Small home businesses geared toward delivery, building, tractor service, horse services, and sales
- Palo Verde and Arlington should remain zoned for horse property
- Rural location and agricultural beauty
- Rural, quiet, low traffic flow, and low housing density
- Include portions of Tonopah/ Arlington Area Plan
- Area should be residential with higher priced homes
- We don't want any other restrictions added to the area
- Coordinate information and existing policies between county agencies (Planning & Dev., Drainage Review, FCDMC, Environmental Services, and MCDOT)
- Consider potential of annexation by Buckeye
- Large land use is key, be it industrial or residential (we have power plants), because it's better than a sea of houses
- Preserve rural lifestyle; leave the urban lifestyle for people who enjoy cities



## ISSUE IDENTIFICATION

### 2. Transportation

- Maintain or repair back roads (possibly in favor of paving as well)
- Not in favor of paved roads
- Would like pedestrian/bicycle lanes
- With safety in mind, current roadway system should be maintained
- Access to I-10
- Reliever for I-10 due to congestion
- Concern about increasing traffic
- Refurbish Old U.S. Highway 80 Bridge
- Consider bridge as part of Regional Trail System
- Maintain current character of Old U.S. Highway 80
- Allow heavy farm equipment to access public roadways
- Need to remove farm equipment from public roadways in concern of safety
- Farm equipment will impede traffic flow on Hazen Rd.
- Provide turning radius for farm equipment
- Provide access to open space areas: BLM wilderness areas and Buckeye Hills
- Need access along wilderness areas for recreational uses
- Use El Rio project as an example for recreational access
- If motorized access is allowed then designated areas to keep them out of the riverbed
- Need connecting trails in area for horseback riders and bicyclists
- Dust problem
- Closing Old U.S. highway 80 access to State Route 85 will cause traffic problems
- Recommend southern extension of Palo Verde Rd.

#### Other Issues:

- Street grading needed
- Who will enforce ATV use in riverbed
- Bends and/or grades should not be eliminated from Old U.S. 80
- Allow access to Buckeye Hills area that would take traffic off State Route 85
- Transportation system should work all together
- Hazen Rd. is the main access road for already developing communities
- Low traffic flow
- Use traffic counters Enterprise Rd. should be paved
- Not interested in scenic corridor



## 3. Environment/Environmental Effects

- Leave environment as natural as possible
- Protect wilderness areas: Robbins Butte and Powers Butte
- Protect native wildlife and plants, wildlife habitat, and wildlife movement corridors
- Preserve natural vegetation, especially native trees and cacti
- Concern about air quality in area, especially dust
- Preserve the desert environment: mountains and Gila River
- Utilize low-water use plant
- Landscaping should be consistent with natural desert and Gila River
- Protect agriculture as open space
- Preserve the views of mountainous areas
- Do not urbanize area
- Development of recreational areas in Gila River
- Do not fragment wildlife or plant habitats; wildlife corridors
- Allow access to Buckeye Hills Recreation Area
- Extend El Rio project from State Route 85 along Gila River
- Remove salt cedar and tamarisk to improve water supply
- Incorporate ideas from Scottsdale's Indian Bend Wash, Tempe Town Lake, and Phoenix's Rio Salado Habitat Restoration Project
- Create retention/recreation lakes along Gila River for the public to enjoy
- Increase density along Arlington Canal to place similar to San Antonio's Riverwalk or Scottsdale River Front Development
- Environmental issues should comply with existing native plant laws
- Enforce re-vegetation of Arizona environment when disturbed

### Other Issues:

- No BLM or State land trades or sale
- No restrictions on property
- No new golf courses
- Concern over drainage problems
- Allow golf courses in floodplains
- Reclaim floodplains by bank protection or channelization of river
- Gila River has not flooded in year, reclaim floodplains



### 4. Economic Development

- Need grocery store, gas stations, restaurants, etc.
- Need more services
- Commercial uses that tie into Old U.S. Highway 80 and State Route 85
- Will need housing and schools
- Small industry should be introduced to the area
- Industrial uses should be catered to rural type uses
- Industrial uses should encourage a diversity of job opportunities
- Limit commercial development compatible with rural lifestyle
- Promote employment/industrial land uses near Palo Verde NGS and along the railroad tracks
- Allow small home-based businesses
- Some small commercial centers, with large commercial located closer to I-10 and State Route 85
- Maintain historic uses: Hassayampa store, Post Office, Desert Rose Bar, and Arlington Cattle Company
- Need grocery store/pharmacy in area
- Need schools

#### Other Issues:

- Allow livestock grazing, growing of crops, and some artwork
- Industrial development near I-10 and Yuma Rd. at Palo Verde Rd.
- Commercial and employment uses along State Route 85
- More Police protection
- Need county services
- Encourage farms
- Take advantage of Buckeye airport



## 5. Open Space

- Preserve existing open space and plan for more open space
- Keep any new development compatible with natural open space areas
- Coordinated trail system and access needed to link community to Buckeye Hills Recreation Area, Signal Mountain Wilderness Area, and Woolsey Peak Wilderness Area for equestrian use, biking, and hiking
- Trail access is important
- Establish trail system along Gila River and BLM land
- Provide access to wildlife areas: Robbins Butte, Power Butte, and Arlington Wildlife Areas
- Preserve foothills of Gila Bend Mountains
- Promote power plant water rights property as Open Space and/or delineating floodplains and/or floodways as Potential Open Space
- Plan for non-horse activities such as quads, motorcycles, bicycles, and hiking trails
- Keep large washes and floodplain as open space
- Need more neighborhood open space, parks, and trails
- There is already enough open space
- No private property should be designated as dedicated open space

### Other Issues:

- Maintain access to public lands
- Keep Woolsey Wilderness Area
- Preserve wildlife corridors
- Desert preservation
- Work with the Town of Buckeye to coordinate regional trails and open space efforts
- Designate area for community park
- Preserve floodways and floodplains as open space



## ISSUE IDENTIFICATION

### 6. Water Resources

- Alternative supply of water needed in future (i.e. water improvement district, municipal water system, private water company)
- Concern about effect of developments on current and future water supply (how much water is in the ground?)
- Water availability study needed and policies based on study
- Protect water resources in the area
- Accommodate agricultural use of water
- Rural lifestyle should preclude the need for any water/waste water projects
- Deny permits to develop if not enough water is demonstrated
- Educate land owners on water conservation
- Utilize low water use planting
- Promote regional solution for water treatment facility
- Support water treatment plants similar to 91st Ave treatment plant to maximize water supplies for downstream users along Gila River/Arlington Canal

#### Other Issues:

- This should not be an issue
- Make developers pay for all infrastructure related to their projects
- Use of renewable water supplies; CAP water
- Water quality is more important than quantity of water
- Coordinate with Buckeye to identify a regional water solution
- Consider WESTCAPS study
- Water quality unknown
- One acre lots should provide their own septic systems and wells
- No future development





## 7. Miscellaneous

- Protect areas along the Gila River from development
- Planning should enforce existing policies and hold ground when it comes to zoning changes
- Plan should consider property values and quality of life
- More law enforcement needed in the Arlington Valley
- Concern over condition of dirt roads and not knowing who grades them
- Protect dark skies and no obstructive signage

### Other Issues:

- Benefits of annexation into Buckeye
- Concerned that County years behind in planning the Old U.S. Highway 80 region due to annexation by Buckeye
- County should hold their ground and enforce existing policies
- Flood Control District too restrictive on drainage and flood control issues
- Build a new lake
- Redo the boundaries for floodplains
- Continue agricultural uses
- Gillespie Dam is no longer a flooding concern
- Include portions of Tonopah/ Arlington and State Route 85 Area Plan in this plan
- Work with Maricopa County Farm Bureau
- Create committee and include residents, property owners, investors, developers, realtors, and state and local agencies
- Fix Gillespie Dam and allow for boating



## PLAN ELEMENTS

The Old U.S. Highway 80 Area Plan establishes comprehensive goals, objectives, and policies that are derived from input obtained from community workshops, stakeholder meetings, surveys, telephone conversations, letters, and electronic mail. The goals, objectives, and policies help support and implement *Eye to the Future 2020*, the Maricopa County Comprehensive Plan.

Using the Comprehensive Plan's format, the area plan elements are organized within eight subject areas.

- Land Use
- Transportation
- Environment/Environmental Effects
- Economic Development
- Growth Areas
- Open Space
- Water Resources
- Cost of Development

Several general definitions are included to help explain their purpose:

*Goal:* A concise statement describing a condition to be achieved. It does not suggest specific actions, but describes a desired outcome.

*Objective:* An achievable step towards a goal. Progress towards an objective can be measured and is generally time dependent.

*Policy:* A specific statement to guide public and private decision-making. It is derived from the goals and objectives of the plan.

The goals, objectives, and policies are the action components of this area plan. Therefore, determination of land use on any specific parcel must be in conformance with the goals, objectives, and policies contained in this plan.

### Goals, Objectives, and Policies

The following goals, objectives, and policies are designed to achieve specific outcomes in the Old U.S. Highway 80 Area Plan.

#### Land Use

##### **Goal L1:**

Promote efficient land development that is compatible with adjacent land uses, is well integrated with the transportation system, and is sensitive to the natural environment.



**Objective L1.1:** Encourage orderly, efficient, and functional development patterns.

- Policy L1.1.1: In areas currently zoned Rural-190, maintain residential densities of one dwelling unit per 190,000 square feet.
- Policy L1.1.2 Only support commercial, industrial, mixed use, residential development greater than one dwelling unit per acre, and other urban uses that have community water and sanitary sewer systems.
- Policy L1.1.3: New mixed use development and master planned communities should include balanced land uses including residential, commercial, employment, open space, and public facilities to help reduce traffic and air quality impact, and to allow people the opportunity to live proximate to such uses.
- Policy L1.1.4: New development within the Small Lot Residential (2-5 d.u./acre) land use category should be compatible with adjacent land use, density, and intensity of use.
- Policy L1.1.5: Encourage federal, state, and local agency cooperation and coordination for area planning efforts.
- Policy L1.1.6: Encourage county inter-agency cooperation and coordination for area planning efforts.
- Policy L1.1.7: When necessary or appropriate, support efforts to avoid potential land use conflicts with Luke Air Force Base operations.
- Policy L1.1.8: Support and encourage regional efforts by public and/or private partnerships to coordinate the efficient expansion of services and infrastructure.
- Policy L1.1.9: Encourage cooperation and coordination among the Arizona Department of Homeland Security, Maricopa County Department of Emergency Management, PVNGS, and other power plants to ensure security and compatibility with adjacent land uses and associated infrastructure.

**Objective L1.2:** Promote high quality residential development that is sensitive to the natural environment and compatible with adjacent land uses.



## PLAN ELEMENTS

- Policy L1.2.1: Encourage developers to cooperate and communicate with residents and local associations during the development and design review process for new construction.
- Policy L1.2.2: Encourage land use and development that is compatible with agriculture activities.
- Policy L1.2.3: Where necessary or appropriate, encourage the preservation of natural drainage ways, major washes, including the Hassayampa and Gila Rivers.
- Policy L1.2.4: Support the use of buffers along open space areas or corridors such as wildlife areas/habitat, natural drainage ways, and major washes.
- Policy L1.2.5: Encourage property owners to contact Maricopa County Environmental Services Department to obtain septic system requirements prior to land division.
- Policy L1.2.6: Encourage property owners to contact the Maricopa County Planning and Development Department for drainage requirements prior to land division.
- Policy L1.2.7: Encourage and support efforts by the Arlington and Palo Verde School Districts to plan for future school and facility needs.
- Objective L1.3:** Promote high quality retail commercial, employment center, and mixed uses that are properly located proximate to populated areas.
- Policy L1.3.1: Encourage retail commercial, employment center, and mixed uses near the urbanizing areas of Buckeye and Gila Bend.
- Policy L1.3.2: Encourage neighborhood retail uses, limited to ten acres in size, at the following locations: southeast corner of Dobbins Rd. and 355th Ave., southwest corner of Baseline Rd. and 341st Ave., and southwest corner of Baseline Rd. and Palo Verde Rd.
- Policy L1.3.3: Promote employment and light industrial land uses near the railroad tracks and power plants.
- Policy L1.3.4: Light industrial uses should encourage diverse job opportunities.
- Policy L1.3.5: Encourage adequate buffers between land uses to protect adjacent or affected residents from potentially incompatible uses.



**Objective L1.4:** Preserve the scenic and where appropriate, the rural character of the Old U.S. Highway 80 planning area.

- Policy L1.4.1: Encourage development that enhances the scenic quality of the Old U.S. Highway 80 area.
- Policy L1.4.2: Support the economic viability of agriculture and agriculture-related businesses when appropriate.
- Policy L1.4.3: Discourage urban commercial, residential, industrial development in rural designated areas of the Old U.S. Highway 80 planning area.
- Policy L1.4.4: Minimize roadway lighting to preserve rural character and dark night skies in rural designated areas.
- Policy L1.4.5: Encourage new utility lines to be located underground where feasible.

## Transportation

### Goal T1:

Provide an efficient, cost-effective, integrated, accessible, environmentally sensitive, and safe multi-modal system that addresses existing and future roadway networks, and promotes transit, bikeways, and pedestrian travel.

**Objective T1.1:** Establish a safe, convenient, and efficient system for existing and future roadways while considering the need for equestrian and multi-use trails access in the Old U.S. Highway 80 planning area.

- Policy T1.1.1: Where necessary and appropriate, new urban development should encourage multi-modal transportation, promote efficient circulation, reduce traffic, and mitigate impacts to air quality.
- Policy T1.1.2: Develop an arterial street system along the existing grid-based section line pattern. Use Maricopa County’s Major Streets and Routes Plan to determine the future functional classification of roads.
- Policy T1.1.2: Support MCDOT efforts to ensure that new or improved transportation facilities within the community are designed and constructed in a manner consistent with County standards.
- Policy T1.1.3: Support implementation of the MAG Interstate10 – Hassayampa Valley Roadway Study.



## PLAN ELEMENTS

- Policy T1.1.4: Support the continued maintenance of existing County roads and the paving of future roads consistent with adopted County design standards, EPA, and MAG standards. Unpaved county-maintained roads will be evaluated for paving if vehicle demand warrants.
- Policy T1.1.5: Support the Maricopa County Major Streets and Routes Plan and its requirements for construction and dedication of roads.
- Policy T1.1.6: Communicate and coordinate with the Maricopa County Department of Emergency Management regarding new development to ensure compatibility with PVNGS designated evacuation routes.
- Policy T1.1.7: Encourage new development within 10 miles of PVNGS to coordinate with the Emergency Planning Department at PVNGS regarding its Outdoor Warning Siren System. The installation of additional sirens may be necessary.
- Policy T1.1.8: Support efforts to minimize the environmental impacts of ATV use.

### Environment/Environmental Effects

#### **Goal E1:**

Promote development that mitigates adverse environmental impacts on the natural and cultural environment, preserves highly valued wildlife habitat, minimizes flooding and drainage problems, and protects historical and archaeological resources.

***Objective E1.1:*** Encourage development that is compatible with natural environmental features.

- Policy E1.1.1: Encourage land uses and development designs that are compatible with environmentally sensitive areas such as the Palo Verde-Saguaro community, floodplains, significant washes, hillsides, protected wildlife species habitat, scenic areas, and unstable geologic and soil conditions.
- Policy E1.1.2: Encourage building envelopes and localized grading to minimize blading and cut and fill in environmentally sensitive areas and leave the remaining portion of the lot undisturbed.
- Policy E1.1.3: Discourage small lot residential and commercial development on land with hillside slopes of 15% or greater.
- Policy E1.1.4: Support the use of density transfers to discourage development within floodplains and floodways, and on significant slopes.





- Policy E1.1.5: Support efforts to help property owners minimize adverse impacts to existing natural washes, erodible soils, desert vegetation, and landforms through Maricopa County drainage guidelines developed for single-lot and lot-split development in the planning area.
- Policy E1.1.6: Encourage the preservation of washes in their natural state.
- Policy E1.1.7: Edges of major washes or rivers should remain undisturbed.
- Policy E1.1.8: Encourage property owners to consult with the Maricopa County Planning & Development Drainage Review division prior to land division to adequately plan for local washes and landforms.
- Policy E1.1.9: New cell towers should be of stealth design and, to the greatest extent possible, should be compatible with the surrounding environment.

**Objective E1.2:** Preserve significant natural and cultural resources.

- Policy E1.2.1: Encourage preserving the scenic quality of Buckeye Hills, views of the Gila Bend Mountains, and other prominent mountains.
- Policy E1.2.2: Coordinate and communicate with the BLM to preserve access to public lands.
- Policy E1.2.3: Protect the Robbins Butte, Powers Butte, and Arlington Wildlife Areas through buffering, transitional land use, and other techniques.
- Policy E1.2.4: Prior to development, excavation, or grading, request that developers submit a letter from the Arizona Historic Preservation Officer stating that the proposed land development will have no effect on historical or cultural resources.

**Objective E1.3:** Improve air quality, water quality, and reduce noise impacts.

- Policy E1.3.1: Support and encourage local and region-wide efforts to preserve air quality.
- Policy E1.3.2: Support and foster federal, state, and local surface water and groundwater quality management programs.
- Policy E1.3.3: Discourage the construction of new dirt roads where feasible by encouraging common access that is agreed to by end users. Encourage revegetation of abandoned dirt roads.
- Policy E1.3.4: Support efforts to mitigate noise impacts on residential properties.



## PLAN ELEMENTS

**Objective E1.4:** Preserve significant habitat areas for wildlife and native plant species.

Policy E1.4.1: Support natural drainage corridors and protective buffering techniques along significant wash systems where new development is proposed, to provide flood control, preserve wildlife corridors, and protect open space.

Policy E1.4.2: Encourage protection of sensitive, threatened, or endangered plant and animal species.

Policy E1.4.3: Encourage cooperation with the Arizona Game and Fish Department (AGFD) and the U.S. Fish and Wildlife Service to help prevent encroachment on riparian scrub habitat and/or channels associated with significant local wash systems.

Policy E1.4.4: Encourage the use of native vegetation replacement.

### Economic Development

#### Goal ED1:

Promote a growing, balanced, efficient, and diversified economy, consistent with available resources, that enhances quality employment opportunities, improves quality of life, and is sensitive to the natural and cultural environment.

**Objective ED1.1:** Encourage quality employment opportunities by supporting efforts that encourage business formation and expansion.

Policy ED1.1.1: Encourage rural type, light industrial development near Palo Verde NGS and along the railroad.

Policy ED1.1.2: Encourage a diversity of employment industries.

Policy ED1.1.3: Encourage participation in, and support of, the Western Maricopa Enterprise Zone.

Policy ED1.1.4: Foster and support public/private partnerships that promote quality economic development in the Old U.S. Highway 80 planning area.

Policy ED1.1.5: Support the development of a regional medical facility to service a wide range of healthcare needs.

Policy ED1.1.6: Coordinate economic development efforts with the Town of Buckeye and Town of Gila Bend.

Policy ED1.1.7: Support agricultural uses in order to support agribusiness.



**Objective ED1.2:** Encourage a wide range of commercial activities in commercial designated areas.

Policy ED1.2.1: Encourage historic commercial uses like Hassayampa Store and Desert Rose Bar.

Policy ED1.2.2: Encourage small home-based business.

Policy ED1.2.3: Encourage and support small to medium size business start-up or expansion within mixed use areas.

**Growth Areas**

**Goal G1:**

Promote orderly, timely, and fiscally responsible growth in Maricopa County.

**Objective G1.1:** Encourage timely, orderly, and fiscally responsible growth within the planning area and within mixed use Development Master Plans.

Policy G1.1.1: Evaluate future development in concert with physical, built, and jurisdictional constraints.

Policy G1.1.2: Evaluate new urban development to ensure that adequate levels of infrastructure and services are available to serve future residents or customers.

**Objective G1.2:** Ensure that future growth is coordinated in an efficient manner with stakeholder input.

Policy G1.2.1: Continue to solicit input from the towns of Buckeye and Gila Bend regarding future growth in the planning area.

Policy G1.2.2: Work with residents and other stakeholders in the review of future growth and development.

Policy G1.2.2: Encourage coordination between developers and school districts for future school site planning.

Policy G1.2.3: Continue to update the Old U.S. Highway 80 Area Plan with input from local organizations and area residents to determine appropriate growth areas, if any, and make changes as necessary.



## PLAN ELEMENTS

### Open Space

#### **Goal 01:**

Maintain and, where necessary, encourage expanding the open space system for Maricopa County to address public access, connectivity, education, preservation, buffering, quantity, quality, and diversity for regionally significant open spaces.

**Objective 01.1:** Promote physical and visual public access to natural open space resources.

Policy O1.1.1: Encourage efforts to protect and improve public access to natural open space resources such as the Buckeye Hills Recreation Area, Signal Mountain Wilderness Area, Woolsey Peak Wilderness Area, Robins Butte Wildlife Area, Powers Butte Wildlife Area, and Arlington Wildlife Area.

Policy O1.1.2: Promote expansion and improvements to existing wildlife areas such as Robins Butte Wildlife Area, Powers Butte Wildlife Area, and Arlington Wildlife Area.

Policy O1.1.3: If possible, support expansion and improvements to existing El Rio project further west from State Route 85 along the Gila River.

Policy O1.1.4: Encourage development that preserves mountain views.

**Objective 01.2:** Establish regional natural open space connectivity and linkages for both recreation and wildlife purposes.

Policy O1.2.1: Where feasible, work with developers and the Old U.S. Highway 80 community to establish local trail linkages in new developments.

Policy O1.2.2: Coordinate trail linkages in new developments with drainage easements and other open space projects and/or resources.

Policy O1.2.3: Support efforts to protect and establish points of access to existing and proposed equestrian, hiking, and bicycle trails.

Policy O1.2.4: Investigate opportunities for development of trails adjacent to major washes as interconnected linkages throughout the region.

Policy O1.2.5: Where roads must cross washes, design all road crossings to minimize disturbance to the natural environment, and to accommodate identified trails.

Policy O1.2.6: Encourage integration and consideration of the Maricopa County Regional Trail System into future development, especially along the Gila River.



Policy O1.2.7: Coordinate with the Town of Buckeye, Town of Gila Bend, BLM, State Land Department, Maricopa County Parks and Recreation Department, and other jurisdictions in planning for future local and regional trails.

**Objective 01.3:** Protect and enhance environmentally sensitive areas, including existing natural washes; steep slopes; historical, cultural, and archaeological resources; view corridors; sensitive desert; and significant wildlife habitat and ecosystems.

Policy O1.3.1: Support the use of density transfers to discourage development in environmentally sensitive areas.

Policy O1.3.2: Encourage preservation of riparian habitat along the Gila River.

Policy O1.3.3: Encourage coordination with Arizona Game and Fish Department concerning development near designated wildlife areas.

**Objective 01.4:** Encourage appropriate open space between potentially incompatible land uses.

Policy O1.4.1: Promote transitional land uses around mountainous areas, open space linkages, and public access points.

Policy O1.4.2: Encourage density transition to separate rural from urbanized areas and to buffer open space from urban development.

**Objective 01.5:** Enhance the quantity, quality, and diversity of open space and recreational opportunities where public access is provided.

Policy O1.5.1: Protect significant cultural resources from degradation by encouraging sensitive development techniques.

Policy O1.5.2: Coordinate with the BLM and State Land Department regarding the classification, exchange, disposal, and acquisition of lands under their management.

**Objective 01.6:** Promote the economic, environmental, and quality of life benefits of natural open space.

Policy O1.6.1: Encourage communication efforts with stakeholders to share information and discuss current issues and development applications.

Policy O1.6.2: Coordinate with the Town of Buckeye and Town of Gila Bend to enhance open space and outdoor recreation amenities.



## PLAN ELEMENTS

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Policy O1.6.3: Support efforts to educate residents on the economic, environmental, and quality of life benefits of natural open space.

Policy O1.6.4: Support efforts to maintain power plant water rights properties as open space.

### Water Resources

#### **Goal W1:**

Promote development that makes conservative use of renewable water supplies such as effluent, surface water, and Central Arizona Project water when feasible, as well as non-renewable sources like groundwater.

**Objective W1.1:** Encourage protection and enhancement of renewable water and groundwater supplies within the framework of state and federal laws, regulations, and guidelines for existing and future needs.

Policy W1.1.1: Support Arizona Department of Water Resources programs, rules, and regulations for new development and for water conservation.

Policy W1.1.2: Encourage the use and reuse of renewable and treated effluent water supplies for the irrigation of golf courses, neighborhood and community parks, roadway right-of-ways, and other large common areas.

Policy W1.1.3: Support efforts to provide a regional water solution for western Maricopa County residents such as, but not limited to, the coalition of West Valley Central Arizona Project Subcontractors (WESTCAPS).

#### **Goal W2:**

Reduce the impacts of development on water quality.

**Objective W2.1:** Encourage voluntary actions and support federal, state, and local regulations and guidelines that protect and preserve current and future groundwater quality in the planning area.

Policy W2.1.1: Encourage preservation of Sonoran desert vegetation and other land conservation practices to maximize penetration and filtering of surface water runoff into the soil to replenish the local aquifer.

Policy W2.1.2: Support ongoing depth to groundwater monitoring conducted by the Arizona Department of Water Resources to assess water levels and water quality throughout the Phoenix Active Management Area.





Policy W2.1.3: Encourage the use of animal waste disposal methods, pest management practices, and landscape/pasture fertilization methods that reduce the risk of groundwater and surface water contamination.

**Cost of Development**

**Goal C1:**

Ensure that new development pays its fair and proportional share of the cost of additional public facility and service needs generated by new development.

**Objective C1.1:** Develop a method to determine the need for, and assess the costs of, new facilities and services required to serve new development in order to maintain service levels.

Policy C1.1.1: Work with other County agencies and developers to establish cost sharing programs.

Policy C1.1.2: Seek regional coordination to promote cost sharing for regional services and infrastructure.

**Objective C1.2:** Adopt and implement level of service standards for new development to help promote consistency and certainty in the cost sharing process.

Policy C1.2.1: Maintain and support Maricopa County’s capital improvement programs to help identify service needs and standards.

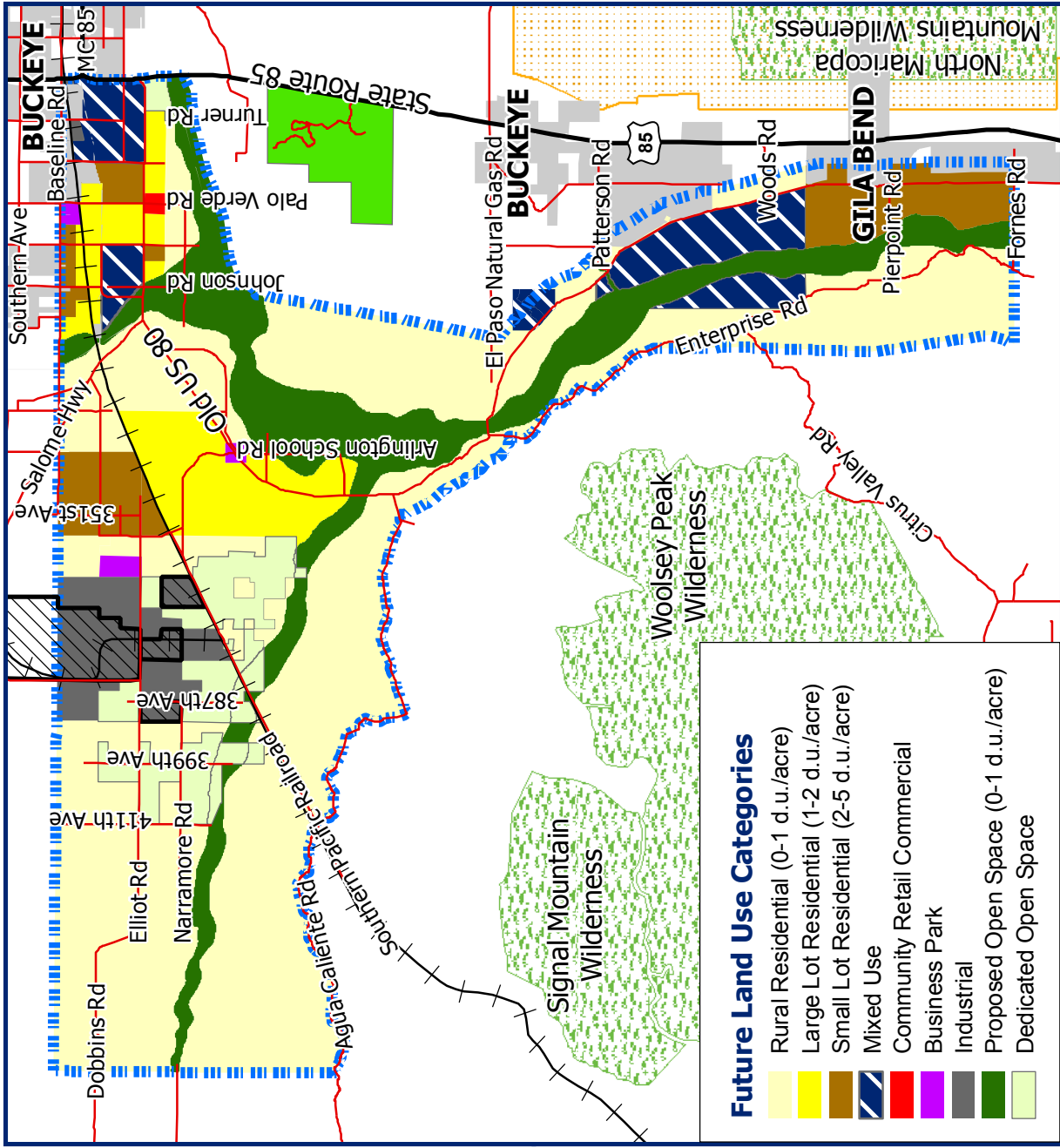
Policy C1.2.2: Adopt and periodically update level of service standards for new development to maintain viability.

Policy C1.2.3: Encourage the use of development agreements.

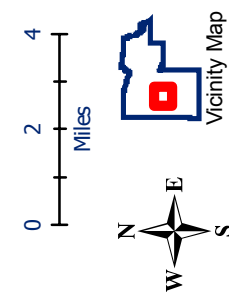
# Future Land Use Plan

Figure 15

- Legend**
- Arterial Roadway
  - Highway
  - Railroad
  - Old U.S. Highway 80 Area Plan
  - Power Plants
  - Buckeye Hills Recreation Area
  - Wilderness Areas (BLM)
  - Sonoran Desert Nat'l Monument
  - Incorporated



- Future Land Use Categories**
- Rural Residential (0-1 d.u./acre)
  - Large Lot Residential (1-2 d.u./acre)
  - Small Lot Residential (2-5 d.u./acre)
  - Mixed Use
  - Community Retail Commercial
  - Business Park
  - Industrial
  - Proposed Open Space (0-1 d.u./acre)
  - Dedicated Open Space



**ONE STOP SHOP**

Maricopa County  
 Planning and Development  
 501 N. 44th St., Ste. 100  
 Phoenix, Arizona 85008

April 2007

MARICOPA COUNTY  
 PLANNING & DEVELOPMENT DEPARTMENT

MARICOPA COUNTY  
 2020  
 Eye to the Future

Note: Arizona law allows proposed open space to be developed at a maximum of 1 d.u./acre. Proposed open space is based on current floodway delineation.



## AGENDA FOR ACTION

The Maricopa County Comprehensive Plan promotes vibrant communities by encouraging growth in areas suitable for development, an efficient transportation system, a healthy environment, and a diverse economy. The Old U.S. Highway 80 Area Plan is intended to reflect the character of the region. Ensuring the plan’s success requires an effective implementation program.

The Old U.S. Highway 80 action plan identifies both long- and short-term measures that can help implement the plan’s goals, objectives, and policies. While some of the activities require actions for a specific period of time, most will require ongoing efforts. In addition, successful plan implementation will require close cooperation, coordination, and communication between public and private agencies, as well as citizens and other concerned interests. Each of these groups will play an important role in plan success, and Maricopa County encourages their continuing participation.

**Table 24: Action Plan** details the Old U.S. Highway 80 Action Plan, and is organized as follows:

<i>Action</i>	Lists actions necessary to implement the area plan
<i>Description</i>	Describes the action in detail
<i>Plan Elements</i>	Lists the elements of the area plan that will be implemented
<i>Participants</i>	Identifies County departments and/or partnering agencies

Involved in plan implementation, which include the following:

MCP&DD	Maricopa County Planning and Development Department
MCDOT	Maricopa County Department of Transportation
MCESD	Maricopa County Environmental Services Department
FCDMC	Flood Control District of Maricopa County
MCPR	Maricopa County Parks and Recreation Department
BUCKEYE	Town of Buckeye
GILA BEND	Town of Gila Bend
PRIVATE AGENCIES	Private and non-profit organizations such as chambers of commerce, interest groups, homeowners associations, civic organizations, land trusts, etc.
DEVELOPERS	Homebuilders and related organizations operating within the planning area
AGFD	Arizona Game and Fish Department
STATE LAND DEPT	Arizona State Land Department
BLM	Bureau of Land Management



# AGENDA FOR ACTION

<b>Action</b>	<b>Description</b>	<b>Plan Element</b>	<b>Participants</b>
Rural development guidelines for rural designated areas	Create rural development guidelines for issues such as landscape, signs, and/or design and incorporate into planning documents	Land Use Economic Development Cost of Development	MCP&DD MCDOT CITIZENS DEVELOPERS
Fire protection plan	Form a regional workgroup to discuss and prepare a fire protection plan	Environment/Environmental Effects Growth Areas Cost of Development	MCP&DD CITIZENS PRIVATE AGENCIES RURAL METRO BLM
Trails	Identify and implement an open space trails system that is coordinated with the Maricopa County Regional Trail System and BLM.	Land Use Transportation Environment/Environmental Effects Economic Development Open Space	MCP&DD FCDMC MC-PARKS CITIZENS PRIVATE AGENCIES DEVELOPERS BUCKEYE GILA BEND BLM
Update area plan	Update area plan to maintain viability	All	All



## AMENDMENTS

Amendments to the adopted Old U.S. Highway 80 Area Plan may be filed with or without rezoning requests or development master plan applications. Arizona Revised Statute §11-829A states that all applications for zoning changes in the unincorporated Maricopa County must be in compliance with the county's comprehensive plan and/or adopted area plan prior to zoning approval.

Area plan amendments should only be allowed after careful public review and evaluation. The statutory requirements which guide area plan adoption will be followed for all requested amendments. The term amendment will apply to both text and map revisions.

All proposed amendments are evaluated based on the following criteria:

1. Whether the amendment constitutes an overall improvement to the adopted plan, and is not solely for the good or benefit of a particular landowner or owners at a particular point in time.
2. Whether the amendment will adversely impact all or a portion of the planning area by:
  - a. Altering acceptable land use patterns to the detriment of the plan.
  - b. Requiring public expenditures for larger and more expensive public improvements to roads, sewer, or water systems than are needed to support the planned land uses.
  - c. Adversely impacting existing uses because of increased traffic.
  - d. Affecting the livability of the area or the health and safety of present and future residents.
  - e. Adversely affecting the natural environment or scenic quality of the area in contradiction to the plan.
3. Whether the amendment is consistent with the overall intent of the adopted plan.
4. The extent to which the amendment is consistent with the specific goals and policies contained in the adopted plan.

The requirements and guidelines necessary for Area Plan amendments are the same as those for the Maricopa County Comprehensive Plan. Therefore, any change in comprehensive plan amendment requirements and guidelines will apply to the area plan amendment process.

Maricopa County, private individuals, or other agencies may initiate plan amendments. It is the burden of the party requesting the amendment to prove that the change constitutes a plan improvement. Conversely, it is not Maricopa County's burden to prove that an amendment should be denied.



## APPENDICES

### Appendix A - Glossary of Terms

**Alluvial:** General term for riverbed, floodplain, lake, estuary, and mountain base sediments laid down in relatively recent geologic times.

**Annexation:** Incorporate an area/territory into a city, service district, etc.

**Area Plan:** Plans adopted by Maricopa County for specific subareas of the unincorporated County. Area plans provide basic information on natural features, resources, and physical constraints that affect development in a planning area. They also contain detailed land use designations which are used to review specific development, service, and facility proposals.

**Arterial:** Street providing traffic service for large areas. Access to adjacent property is incidental to serving major traffic movement.

**Agriculture:** Any use of land for growing, harvesting, and sale of crops or animals. Also includes uses which are ancillary to the growing and harvesting of crops or animals, which is the exclusive or primary use of the lot, plot, parcel, or tract of land; processing crops to a generally recognizable level of marketability; or the open range grazing of livestock.

**Aquifer:** Saturated underground formation of permeable materials capable of storing water.

**Basic Sector Employment:** Industries that sell products to consumers outside of a particular city or region.

**Buffer:** Method of separating incompatible uses; examples include opaque fencing, vegetated berms, and dense landscaping.

**Capital Improvement Program:** Board of Supervisors approved timetable or schedule of future public improvements to be carried out during a specific period. These improvements are listed in order of priority together with anticipated costs and finance methods.

**Cluster Development:** Development design that concentrates buildings in areas of a site to allow remaining land to be used for recreation, common open space, and / or preservation of environmentally sensitive features.

**Community:** Group of individuals living in a common location sharing common interests.

**Comprehensive Plan:** Document containing guidelines for growth and land development within a jurisdiction. Also contains policies regarding public services, benefits, and regulations.

**Developed Recreation Site:** Distinctly defined area where facilities are provided for concentrated public use (e.g. campgrounds, picnic areas, boating sites, and interpretive facilities).





**Density:** Numeric average of families, individuals, dwelling units, or housing structures per unit of land, usually referred to as total dwelling units per acre.

**Density Bonus:** Allowing additional development on a parcel in exchange for items of public benefit such as affordable housing, recreation sites, infrastructure expansion, open space, etc.

**Dwelling Unit:** Room or group of rooms (including sleeping, eating, cooking, and sanitation facilities) that constitutes an independent unit, occupied or intended for occupancy by one household on a long-term basis.

**Endangered Species:** A type of animal or plant listed as threatened according to the federal Endangered Species Act.

**Environment:** All the factors (physical, social, and economic) that affect a population.

**Floodplain:** The channel and the adjacent areas of a natural stream or river which has been or may be covered by floodwater.

**Floodway:** The channel of a watercourse and portion of the adjacent floodplain that is needed to convey the base or 100-year flood event without increasing flood levels by more than one foot and without increasing velocities of flood water.

**Floodway Fringe:** The areas of a delineated floodplain adjacent to the Floodway where encroachment may be permitted.

**Floor Area Ratio (FAR):** The zoning control number that regulates the total square footage of floor area allowed on a lot. For example, a FAR of 1.0 on a 10,000 square foot lot would allow a building with a maximum of 10,000 square feet of floor area, with 1 story, covering the entire lot, or two stories of 5,000 square feet for each floor, each covering ½ of the lot.

**Goal:** An ideal future end, condition or state related to the public health, safety, or general welfare toward which planning and planning implementation measures are directed.

**Groundwater:** Water that is stored beneath the land surface in cracks and crevices of rocks, and in the pores of geologic materials that make up the earth's crust.

**Habitat:** The typical place(s) occupied by a species or organism.

**Housing Unit:** A house, apartment, mobile home or trailer, group of rooms, or single room occupied as a separate living quarter or, if vacant, intended for occupancy as a separate living quarter. Separate living quarters are those in which the occupants live and eat separately from any other person in the building and which have direct access from the outside of the building or through a common hall.

**Incorporated City:** Area(s)/neighborhood(s) joined together for the purpose of self-government.



## APPENDICES

**Infrastructure:** Facilities and services needed to sustain a particular type of development. This includes water and sewer lines, streets, electrical power, fire and police stations, etc.

**Jobs-Housing Balance:** An attempt to balance the number and types of jobs with the amount and cost of housing.

**Landfill:** A site for disposal of solid wastes. At specific intervals, a layer of soil covers the waste and a process of deposit and compaction is repeated to reduce nuisances and hazards to public health and safety. The purpose is to confine wastes to the smallest practical area, and reduce them to the smallest practical volume.

**Land Use:** Occupation or use of land or water area for any human activity or any purpose defined in the Comprehensive Plan.

**Multi-modal:** Accommodating a variety of transportation modes, such as buses, automobiles, rapid transit, rail, bicycles and pedestrians. A multi-modal transportation hub is a facility for the transfer of passengers and/or goods between different modes of transportation.

**Natural Resources:** Elements relating to land, water, air, plant and animal life, and the interrelationship of those elements. Natural resources include soils, geology, topography, floodplains, vegetation, wildlife, surface and groundwater, and aquifer recharge zones.

**Neighborhood:** Area of a community with characteristics that distinguish it from other community areas and which may include distinct demographic characteristics, schools, social structure, or physical boundaries.

**Neighborhood Park:** Recreation site developed for active and passive activities which is designed to serve one or a few neighborhoods within a short walking or driving distance. Typical equipment and facilities in a neighborhood park include playground equipment, playing fields, picnic tables, landscaping, and on-site parking. Neighborhood parks are generally smaller than community parks, and typically lack the variety of recreation facilities available in a larger park.

**Non-attainment Area:** Areas that do not meet the National Ambient Air Quality Standards (NAAQS) for one or more pollutants. Such pollutants include lead, oxides of nitrogen, sulfur dioxide, ozone, carbon monoxide, and PM<sub>10</sub>.

**Nonbasic Sector Employment:** Industries that sell products to consumers within a particular city or region.

**Objective:** A condition that is an intermediate step toward attaining a goal. An objective should be achievable and, when possible, measurable and time specific.

**Open Space:** Publicly or privately owned lands maintained in their natural state. Open Space lands are generally comprised of mountains and foothills, rivers and washes, canals, vegetation, wildlife habitat, parks, and preserves.



**Particulates:** Small particles suspended in the air and generally considered pollutants.

**Permeability:** Rate at which water runs through soil.

**Planning:** Establishment of goals, policies, and procedures for social, physical, and economic growth and order.

**PM<sub>10</sub>:** Airborne particulate matter of 10 microns or less in diameter. PM<sub>10</sub> is the result of agricultural and construction operations, suspended dust, tire abrasion from vehicles traveling on roads, and natural occurrences such as wind storms.

**Policy:** Specific statement that guides decision making. Policies are statements of intent for actions to be taken in pursuit of a given objective.

**Population Density:** The number of people in a given area. Population density may be obtained by multiplying the number of dwellings per acre by the number of residents per dwelling.

**Potable Water:** Water suitable for drinking.

**Protected Species:** Any species or subspecies subject to excessive taking and with significant threats or declining populations making it illegal to take them under the auspices of a hunting or fishing license.

**Regional Park:** Recreation area of 200 or more acres offering passive recreation opportunities such as hiking, camping, picnicking, and climbing, but has no facilities for organized forms of recreation.

**Right-Of-Way:** Strip of land occupied or intended to be occupied by transportation and public facilities, such as roadways, railroads and utility lines.

**Riparian Area:** Ecosystem associated with bodies of water, such as streams, lakes, or wetlands, or is dependent upon the existence of perennial, intermittent, or ephemeral surface or sub-surface drainage.

**Rural:** When used in the context of this Plan, rural areas are those intended for residential development on no greater than one acre lots, characterized by the lack of urban services and infrastructure.

**Rural Residential:** Single family residence on a 1 or more acre parcel, and may include mixed residential and agricultural use.

**Scenic Corridor:** A roadway with recognized high quality visual amenities that include mountain vistas, open country, or city.

**Subdivision:** Improved or unimproved land divided into 6 or more lots, parcels, or fractional interests for immediate or future sale or lease. Subdivided land includes a stock cooperative and lands divided or proposed to be divided as part of a common promotional plan (as defined by A.R.S. §32-2101-50).



## APPENDICES

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**Subsidence:** The gradual, settling or sinking of the earth's surface with little or no horizontal motion. Subsidence is usually the result of water extraction from underground supplies and not the result of a landslide or slope failure.

**Threatened Species:** Any species or subspecies that is likely to become endangered within the foreseeable future because of serious problems and populations are (1) lower than they are historically or (2) extremely local and small.

**Urban:** When used in the context of a Maricopa County Area Plan, includes development with densities exceeding one residential unit per acre and accompanying nonresidential and public development.

**Wastewater:** Includes sewage and all other liquid waste associated with human or animal habitation, or from production manufacturing or processing operations.

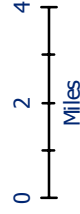
**Watershed:** The entire area that contributes water to a drainage system or stream.

**Zoning:** Classification of land into specific categories that govern the use, placement, spacing, and size of land and buildings corresponding to the categories.

# Existing Zoning

Figure 16

- Legend**
- Arterial Roadway
  - Highway
  - Railroad
  - Old U.S. Highway 80 Area Plan
  - RURAL-190
  - RURAL-43
  - R1-35
  - R-2
  - R-5
  - C-2
  - C-3
  - IND-1
  - IND-2
  - IND-3
  - Special Use Permit
  - Incorporated



Vicinity Map

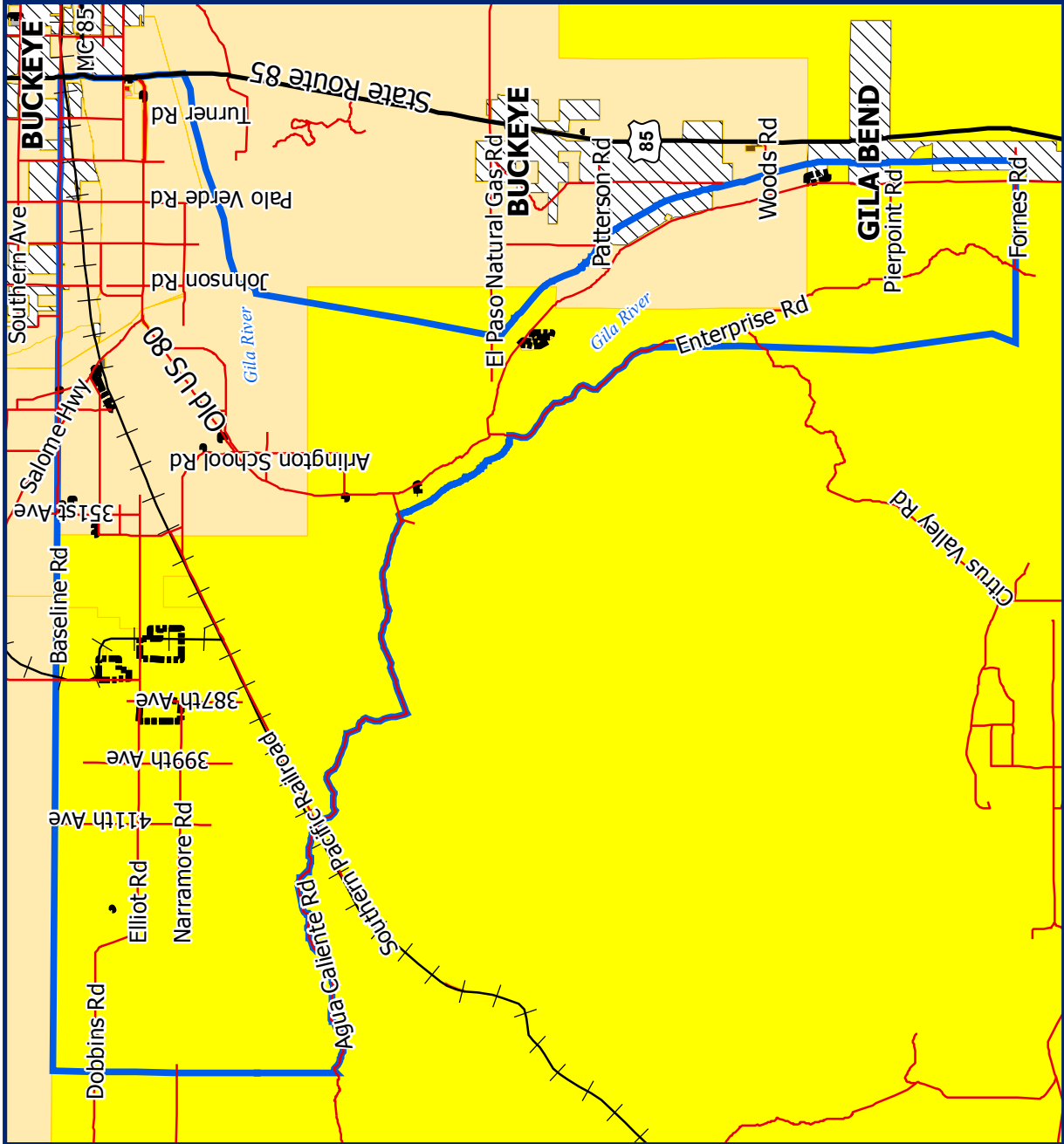


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MARICOPA COUNTY  
 PLANNING & DEVELOPMENT DEPARTMENT





# APPENDICES

## Appendix B - Zoning District Categories

(Note: Existing zoning districts in the planning area are illustrated in Figure 16)

Zoning Districts	Permitted Uses	Density
<b>Rural Residential</b>		
Rural-190	Residential, agricultural activities	1 du/4.36ac (190,000 sq. ft.)
Rural-70	Residential, agricultural activities	1 du/1.6 ac (70,000 sq. ft.)
Rural-43	Residential, agricultural activities	1 du/1 ac (43,560 sq. ft.)
<b>Single Family Residential</b>		
R1-35	Residential	1du/35,000 sq. ft.
R1-18	Residential	1du/18,000 sq. ft.
R1-10	Residential	1du/10,000 sq. ft.
R1-8	Residential	1du/8,000 sq. ft.
R1-7	Residential	1du/7,000 sq. ft.
R1-6	Residential	1du/6,000 sq. ft.
<b>Limited Multiple Family Residential</b>		
R-2	Multi-family dwelling	1du/4,000 sq. ft.
<b>Multiple Family Residential</b>		
R-3	Multi-family dwellings	1du/3,000 sq. ft.
R-4	Multi-family dwellings	1du/2,000 sq. ft.
R-5	Multi-family dwellings	1du/1,000 sq. ft.
<b>Commercial</b>		
C-1: Neighborhood Commercial	Food markets, drugstores and personal service shops	
C-2: Intermediate Commercial	Hotels and motels, travel trailer parks, restaurants, and some commercial recreation and cultural facilities	
C-3: General Commercial	Retail and wholesale commerce and commercial entertainment	
C-O: Commercial Office	Professional, semi-professional and business office	
C-S: Planned Shopping Center	Retail and service businesses w/ development site plan approved by the BOS	
<b>Industrial</b>		
Ind-1: Planned Industrial	Business and manufacturing activities w/ development site plan approved by the BOS	
Ind-2: Light Industrial	Light industrial activities w/ development site plan approved by the BOS	
Ind-3: Heavy Industrial	Heavy industrial activities w/ development site plan approved by the BOS	





## Appendix C - Land Regulations

In addition to zoning districts, other public and private techniques and guidelines are used to accommodate development. Such techniques include:

1. **Hillside Development Standards (HD):** Allows the reasonable use and development of hillside areas while maintaining its unique character, identity, and image. This district applies to development on slopes of 15 percent and greater.
2. **Senior Citizen Overlay (SC):** Provides for planned residential development designed specifically for residency by older populations.
3. **Planned Development Overlay (PD):** Establishes a basic set of conceptual parameters for the development of land and supporting infrastructure, which is to be carried out and implemented by precise plans at the time of actual development.
4. **Special Use Permit (SUP):** Allows a class of uses that are otherwise prohibited by the Ordinance.
5. **Temporary Use Permit (TUP):** Allows a class of uses for a specific period of time.
6. **Unit Plans of Development (UPD):** Provides for large scale development where a variation in lot size, dwelling type and open space is warranted due to topographic or other considerations.
7. **Subdivision Regulations / Administrative Guidelines:** Method which helps ensure adequate traffic circulation, lot design, water supply, fire protection, sewage disposal, utilities, drainage, flood protection, community facilities, and the conveyance of land by accurate legal descriptions.
8. **Uniform Building Code (UBC):** Establishes standards for building construction and site preparation.
9. **Maricopa County Health Code:** Includes development regulations for domestic water supply systems, refuse collection and disposal, sanitary sewage treatment systems, and mobile home parks. Additional regulations include vector control, bathing places, food handling establishments, childcare facilities, kennels, pet shops, and air pollution control.
10. **Private Land Use Controls:** Many developers use private land controls to supplement government regulations. These controls are known as covenants, conditions, and restrictions (CC&Rs). CC&Rs are contained in the deed to property or are otherwise formally recorded and may include deed restrictions, which are limitations in the deed to a property that dictate certain uses that may or may not be made of the property.



## APPENDICES

### Appendix D - Acronyms

<b>ADEQ</b>	Arizona Department of Environmental Quality
<b>ADMP</b>	Area Drainage Master Plan
<b>ADOT</b>	Arizona Department of Transportation
<b>ADWR</b>	Arizona Department of Water Resources
<b>API</b>	Arizona Preserve Initiative
<b>AGFD</b>	Arizona Game and Fish Department
<b>A.R.S.</b>	Arizona Revised Statutes
<b>ASLD</b>	Arizona State Land Department
<b>BLM</b>	Bureau of Land Management
<b>BOS</b>	Board of Supervisors
<b>CAP</b>	Central Arizona Project
<b>CC&amp;Rs</b>	Covenants, Conditions, and Restrictions
<b>CIP</b>	Capital Improvement Program
<b>CRC</b>	Community Retail Center
<b>DES</b>	(Arizona) Department of Economic Security
<b>DMP</b>	Development Master Plan
<b>DSP</b>	Desert Spaces Plan
<b>EPA</b>	Environmental Protection Agency
<b>FAR</b>	Floor Area Ratio
<b>FCDMC</b>	Flood Control District of Maricopa County
<b>GPDA</b>	General Plan Development Area
<b>GPEC</b>	Greater Phoenix Economic Council
<b>I.U.P.D.</b>	Industrial Unit Plan of Development
<b>MAG</b>	Maricopa Association of Governments
<b>MCDOT</b>	Maricopa County Department of Transportation
<b>MCESD</b>	Maricopa County Environmental Services Department
<b>MCP&amp;DD</b>	Maricopa County Planning and Development Department
<b>NRC</b>	Neighborhood Retail Center
<b>NRPA</b>	National Recreation and Park Association
<b>RAZ</b>	Regional Analysis Zone
<b>RDA</b>	Rural Development Area



<b>ROSS</b>	Regional Off-Street System (Plan)
<b>RPTA</b>	Regional Public Transportation Authority
<b>SHPO</b>	State Historic Preservation Office
<b>TAZ</b>	Traffic Analysis Zone
<b>TSP</b>	Transportation System Plan
<b>USA</b>	Urban Service Area
<b>USFS</b>	United States Forest Service
<b>USFWS</b>	United States Fish and Wildlife Service
<b>WCMP</b>	Water Course Master Plan
<b>WWTP</b>	Wastewater Treatment Plant