TABLE OF CONTENTS

Executive Summary vi

Introduction
Plan Organization 1
How to use the Plan 2
History of the White Tank and Grand Avenue Region 2
Planning History 4

Inventory and Analysis
Demographic Characteristics and Projections 7
Land Use 13
Transportation 28
Environment 32
Economic Development 43

Issue Identification
Issue History 50
Current Issues 54
Issue Analysis 55

Plan Elements
Land Use 57
Goals
Objectives
Policies

Transportation 64
Goals
Objectives
Policies

Environment 67
Goals
Objectives
Policies

Economic Development 69
Goals
Objectives
Policies

Agenda for Action 71

Amendments 74

Appendix

Appendix A Glossary of Terms 75
Appendix B Generalized Existing Zoning 79
Appendix C Land Regulations 80
Appendix D Acronyms 81

List of Figures (appears after page listed)

Figure 1 Planning Area 5
Figure 2 Original Plan Boundary 7
Figure 3 Residential Completions 7
Figure 4 Planned Land Use 13
Figure 5 Land Ownership 13
Figure 6 Existing Facilities & Utilities 15
Figure 7 Proposed Long Range Functional Classification System 28
Figure 8 Slope 32
Figure 9 Soils 33
Figure 10 Land Subsidence and Earth Fissures 36
Figure 11 Noise Contours (Luke Air Force Base) 37
Figure 12 Luke Air Force Base Flight Patterns 38
Figure 13 Subareas 61
Figure 14 Future Land Use 70
Figure 15 Existing Zoning 79
Figure 16 Existing Zoning: Luke Air Force Base Area 79

List of Tables

Table 1 Resident Population: Grand Avenue Planning Area 7
Table 2 Resident Housing Units: Grand Avenue Planning Area 8
Table 3 Resident Population: White Tank/Agua Fria Planning Area 8
Table 4 Resident Housing Units: White Tank/Agua Fria Planning Area 8
Table 5 White Tank/Grand Avenue Population Projections 10
Table 6 White Tank/Grand Avenue Population Distribution 10
Table 7 White Tank/Grand Avenue Median Income Distribution 10
Table 8 White Tank/Grand Avenue Total Resident Housing Units 11
Table 9 White Tank/Grand Avenue Persons per Housing Units 11
Table 10 White Tank/Grand Avenue Sub Area Population Projection 12
Table 11 White Tank/Grand Avenue Sub Area Residential Housing Units 12
Table 12 Facility Space Standards 27
Table 13 Soil Association Development Constraints 34

Table 14 Primary Employment Activities 44
Table 15 Recommended Commercial/Industrial Land Use Ratios 46
Table 16 Grand Avenue Corridor Resident Issue Identification 52
Table 17 Current Issues 54
Table 18 Action Plan 72

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EXECUTIVE SUMMARY

Plan Overview and Purpose

Maricopa County has experienced rapid growth throughout its history, but especially during the last 40 years. While most of this growth occurred in central and eastern Maricopa County, recent patterns indicate that the western Phoenix metropolitan area will experience tremendous population growth and development over the next several decades. To help accommodate anticipated growth while preserving this area's quality of life, Maricopa County completed two specific area plans: the *White Tanks / Agua Fria Policy and Development Guide* (adopted 1982) and the *Grand Avenue Corridor Area Land Use Plan* (adopted 1992). While both plans provide useful data, some information and recommendations have become outdated, invalid, and/or ineffective due to significant change in the area. Given this region's potential for future growth, an updated area plan is necessary and timely to reflect current conditions and accommodate growth in an efficient manner. While the White Tank and Grand Avenue Area Plan is an update, the planning objective remains the same: to accommodate growth in a manner that is consistent with protecting public health, safety, convenience, and general welfare.

Upon recommendation from project advisory committee members, the White Tanks/Agua Fria Policy and Development Guide and Grand Avenue Corridor Area Land Use Plan were combined into one cohesive document so that regional considerations could be identified, analyzed, and addressed. The new document is now known as the *White Tank and Grand Avenue Area Plan*.

Public Participation

The White Tank and Grand Avenue Area Plan emphasizes public involvement and incorporates citizen comments, ideas, and recommendations. During preparation of *Eye to the Future 2020*, the Maricopa County Comprehensive Plan, planning area residents helped develop a "vision" for the planning area:

We envision the Northwest Valley as a place that enjoys a high quality of life and encourages planned community developments, while preserving a variety of lifestyles. The Northwest Valley includes a balanced regional transportation system (vehicular, public transit, and non-motorized) and welcomes economic development to provide goods, services, and jobs to community residents. As the area grows in harmony with the environment, the Northwest Valley preserves the Sonoran Desert and its precious resources, while promoting a community that provides its residents with the opportunity to work, live, and play.

West Valley residents, focus group participants, project advisory committee members, and other stakeholders were very helpful in identifying current issues and concerns. Although many issues and concerns were recognized, three particular issues were mentioned most often. These include:

- Density and land use near Luke Air Force Base
- Timing and location of urban and rural development
- Impacts from the future loop 303 highway on regional development patterns

Citizens and stakeholders also helped identify several important planning concepts which are the foundation of the White Tank and Grand Avenue Area Plan. These concepts include:

- Ensure land use compatibility and public safety in light of potentially rapid future growth.
- Create community and neighborhood identity based on sound planning techniques, social interaction, and appreciation of environmental resources.
- Produce a functional, efficient, and pleasant region in which residents can live, work, and play.
- Identify, analyze, and implement ideas and techniques that improve residents' physical, social, and economic quality of life.
- Identify, analyze, and implement ideas and techniques that help create a distinctive image for the planning area.

Conclusion

It is important to note that the White Tank and Grand Avenue Area Plan is not a document that represents total planning area buildout. Rather, it prepares for and accommodates growth over the next fifteen to twenty years but will be reexamined and updated periodically to reflect current conditions and changes.

It is clear that residents are genuinely concerned about the future of the planning area. Most believe that growth and development can occur in a manner that is compatible with existing features and lifestyles. However, residents also believe that such conditions can only occur if there is a sincere commitment to careful planning and cooperation. While not a complete solution, the White Tank and Grand Avenue Area Plan does attempt to fulfill these demands through innovative and balanced efforts.

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.

Land Use

The land use element discusses general land use, development, and preservation concepts. Efforts are directed at encouraging efficient and timely growth patterns.

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 the timely and orderly expansion of urban service areas.

Objective L1.2: Encourage the use of planned communities that provide a variety of land uses, housing types, employment opportunities, and offer a safe and pleasant living and working environment.

Objective L1.3: Encourage high quality commercial centers and well-designed office, business, and industrial parks that are properly located proximate to populated areas and transportation facilities.

Goal L2: *Protect the public health, safety, and welfare in areas around Luke Air Force Base and other noise generating centers.*

Objective L2.1: Prevent land use conflicts.

Objective L2.2: Encourage development patterns and standards compatible with the continuing operation of military and civilian airports, automotive proving grounds, and racetracks.

Goal L3: *Define future policies for subareas*

Objective L3.1: Encourage development that is compatible with existing and future freeways, as well as other prominent land use features within the Interstate 10 Corridor Subarea.

Objective L3.2: Within the White Tank Subarea, encourage development that is compatible with White Tank Regional Park, automotive proving grounds, and is consistent with the urban service area.

Objective L3.3: Promote orderly growth within the Grand Avenue Corridor Subarea that maintains scenic viewsheds, promotes community identity in Wittmann, Circle City, and Morristown, and is compatible with automotive proving grounds.

Objective L3.4: Preserve the scenic and rural character of the Northwest Valley Subarea.

Objective L3.5: Encourage orderly, timely, and compatible growth patterns in the Agua Fria Subarea that provide a variety of land uses, especially employment opportunities.

Objective L3.6: Within the Luke Subarea, encourage development to be compatible with Luke Air Force Base and the Urban Service Area.

Objective L3.7: Preserve and maintain private property rights by allowing at least one residential dwelling unit per acre for any private or state land designated as proposed open space.

Transportation

The transportation element defines a system of transportation facilities and services, including existing and future roads, transit possibilities, road network connections, and system limitations. Efforts are directed at maximizing transportation system efficiency by coordinating land use and transportation planning. The premise for the transportation element is found in the *Northwest Valley Transportation System Plan*, developed by the Maricopa County Department of Transportation (MCDOT).

Goal T1: *Improve the roadway network to meet future transportation needs, promote safety, and mitigate congestion.*

Objective T1.1: Determine the preferred location of new roadway connections and extensions for the next 20 years.

Objective T1.2: Minimize traffic congestion on regional routes, state highways, and urban arterial roads.

Objective T1.3: Determine the most appropriate corridor for a CanaMex route.

Objective T1.4: Encourage the coordinated and timely development of new roadways.

Objective T1.5: Provide alternatives to mitigate conflicts between commercial trucking and the interests of planning area residents.

Goal T2: *Encourage the use of transit and alternative transportation modes, especially for short trips where these modes are more competitive with the private auto.*

Objective T2.1 : Develop short and long-range transit improvement plans for the planning area.

Objective T2.2: Develop and implement strategies to improve senior citizen transportation using the existing transit and alternative mode concepts, as well as other modes to serve special needs of senior citizens.

Objective T2.3: Develop and implement strategies to improve vehicle and pedestrian safety at specific railroad crossings in the Grand Avenue Corridor.

Objective T2.4: Develop and implement strategies to provide safe equestrian crossings of new and existing roadways in areas where such crossings are necessary.

Objective T2.5: Improve golf cart access and safety in retirement communities.

Objective T2.6: Coordinate the bikeway planning that has been completed and develop an integrated regional bike network throughout the planning area, with an emphasis on system continuity and connection of residential areas to activity centers.

Environment

The environment element focuses on maintaining and improving the physical environment, conserving natural resources, and other environmental considerations. Efforts include protecting the region's air, water, land, and cultural resources.

Goal E1: *Promote development that considers adverse environmental impacts on the natural and cultural environment, preserves highly valued open space, and remediates areas contaminated with hazardous materials.*

Objective E1.1: Encourage developments that successfully coexist and are compatible with significant natural features.

Objective E1.2: Preserve significant natural and cultural resources

Objective E1.3: Preserve significant existing open space and habitat areas for wildlife and desert plant species.

Objective E1.4: Support adequate opportunities for outdoor recreation that are sensitive to the environment.

Economic Development

The economic development element focuses on creating a healthy economy in the planning area that increases living standards and quality of life.

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: Expand quality employment opportunities by supporting efforts that encourage business formation and expansion.

Objective ED1.2: Help increase the jobs to residents ratio.

Objective ED1.3: Encourage a wide range of commercial activities at the intersections of roads of regional significance and where roads of regional significance intersect major freeways.

Objective ED1.4: Expand educational and job training opportunities for planning area residents.

Objective ED1.5: Improve housing conditions in unincorporated communities.

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, requires an update of all County area plans to help ensure consistency with the Comprehensive Plan. The *White Tank and Grand Avenue Area Plan* is an update of the existing White Tank/Agua Fria Policy and Development Guide and the Grand Avenue Corridor Area Land Use Plan. These two area plans have been combined, reorganized, and rewritten to accommodate regional considerations, and provide direction for development. The White Tank and Grand Avenue Area Plan includes revisions in text, data, maps, and citizen issues. It also includes an Agenda for Action which identifies specific measures to implement the plan.

As new development and growth occur, refinements and changes to the plan will be required. Therefore, the White Tank and Grand Avenue Area Plan will be periodically reviewed and updated as needed.

Plan Organization

This document presents the results of the update process for the White Tank and Grand Avenue planning area. It is organized to follow the Maricopa County Comprehensive Plan guidelines, and includes the following seven sections:

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 White Tank and Grand Avenue planning area. Plan elements are based in part on information contained in this section.

Issue Identification: Summarizes important land use and planning issues raised by both Project Advisory Committee members and West Valley residents. A discussion of current issues follows a brief review of those issues described in the White Tank / Agua Fria Policy and Development Guide and Grand Avenue Land Use Plan.

Plan Elements: Defines specific goals, objective, and policies that guide growth and development in the White Tank and Grand Avenue planning area.

Action Plan: Outlines how the White Tank and Grand Avenue Area Plan will be implemented through specific strategies and programs.

Amending the Plan: Specifies the process for changing the Area/Comprehensive Plan. By design**,** these plans are flexible documents that can adapt to changing conditions. The amendment process highlights this and will facilitate the plan's evolution.

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

INTRODUCTION

This area plan identifies planning area goals, objectives, and policies for land use, transportation, environment, and economic development. Unlike the White Tank/Agua Fria Policy and Development Guide and Grand Avenue Land Use Plan, the updated White Tank and Grand Avenue Area Plan identifies both regional policy considerations and a more detailed approach to land use decisions.

Update Process

The White Tank and Grand Avenue Area Plan update is necessary to reflect current citizen issues; population increases; and land use, boundary, and annexation changes. Maricopa County updates this and other Area Plans using the most recent Maricopa Association of Governments (MAG) population 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, the Area Plan serves as a decision making guide for the Planning and Zoning Commission and Board of Supervisors concerning 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 White Tank and Grand Avenue Region

The White Tank and Grand Avenue area has a long and storied history dating back thousands of years. As early as 9,000 B.C. various Native American tribes inhabited the West Valley region. These early tribes were comprised of nomadic people traveling through the area on their way from Asia and Alaska to Mexico and South America. However, because of their nomadic existence their settlements did not become part of the landscape and little is known about their way of life.

The first known permanent settlers were the Hohokam Indians, which occupied the area from approximately 500 to 1450 A.D. It is believed that this group lived in small farming villages throughout the region, including in the present White Tank Mountain Regional Park. Their dwellings were shallow, rectangular pit homes built primarily below ground. As their culture developed, they began concentrating small settlements into larger villages surrounded by walls. Once this occurred, the Hohokam built an extensive irrigation canal system along the Salt and Gila River Valleys, much of which was used by European settlers in the late 19th century. Although the Hohokam attained a high degree of stone-age civilization, they had no alphabet or written language and therefore left no narrative stories. This is unfortunate because sometime around 1300 A.D. the Hohokam abandoned the area for locations and reasons still not known.

Beginning in the 1500's, Spanish explorers colonized the region, and from 1540 to 1821 claimed the area for the Spanish crown. When Mexico declared independence from Spain in 1821, the region became part of the Republic of Mexico. However, neither Spain nor Mexico extensively settled the area and very little permanent occupation occurred in either the Salt or Gila River Valleys. With the Treaty of Guadalupe Hidalgo in 1848 and the Gadsden Purchase in 1853, the entire region became part of the United States.

The first Anglo-American settlers, primarily trappers, began arriving in the region during the 1820's. However, it was the mid-1800's California gold rush that transformed the Gila River into a virtual highway of settlers and prospectors. In fact, it is estimated that by 1851 over 60,000 people had passed through the Gila River Valley area on their way to California.

By the late 1800's, Anglo settlement increased due to the expanded presence of the U.S. Army, large-scale irrigation development, the discovery of minerals, and the opening of the railroad. In 1877, the "Desert Land Act" permitted settlers to obtain title to 640 acres of desert land if they agreed to irrigate it within three years. By the 1890's, over 100,000 acres of desert were irrigated in the Salt and Gila River areas which attracted still more settlers to the region. Settlement occurred in Buckeye as early as 1885, Peoria in 1888, and Glendale in 1892. Irrigation and agriculture production accelerated with the completion of Roosevelt Dam in 1911 and the entry of Arizona into the Union in 1912. Other dams were also constructed along the Salt, Verde, and Agua Fria Rivers. The 176 foot high Waddell Dam, constructed in 1927, was at the time the largest multiple arch dam in the world.

By World War I, several West Valley communities were beginning to emerge. El Mirage, Surprise, Litchfield Park, Goodyear, Avondale, and Tolleson grew primarily due to cotton production. These communities later took on increasing importance around 1940 when a U.S. Army representative was sent to Arizona to find a site for an Army Air Corps field for training fighter aircraft pilots. In 1941, a 1,440 acre site was chosen and Luke Air Force Base was opened. Luke trained over 12,000 fighter pilots by the end of the World War II, but was decommissioned in 1946. In 1951 Luke was reactivated as an Air Force Base and has been training U.S. and Allied pilots ever since.

World War II also marked a change in land use patterns throughout the area. Low-cost land and industrial decentralization brought electronics, aluminum, and aerospace industries to the region. Along with industries came more people, and agriculture began to be replaced by residential development. The area's pleasant climate and the wide spread use of air conditioning made the West Valley attractive to retirees. Retirement communities became part of the region's growth pattern when Youngtown and Sun City started in the mid-1950's. Retail business followed people here, and many stores moved from central Phoenix to suburban areas. Completion of the Central Arizona Project, Interstate 10, and other major roadways are also having a significant impact on growth in the West Valley as individuals and businesses are now able to move farther away from central city services, creating villages, satellite cities, and master planned communities.

Today, the White Tank and Grand Avenue planning area is one of the fastest growing regions in the country. This growth is creating certain benefits such as access to urban services, increased employment opportunities, and location choices for residents. However, growth and development are also creating certain problems, including the urbanization of rural, agricultural, and Sonoran Desert areas; increasing the cost of servicing scattered development; and increasing air pollution due to longer travel distances. While not a complete solution, the White Tank and Grand Avenue Plan helps address these problems by enhancing cooperation between government agencies, citizens, and other affected interests, and by considering regional implications.

Planning History

White Tanks / Agua Fria Policy and Development Guide Development (1982)

In 1977, the Maricopa County Planning and Department began a comprehensive land use study in a 70 square mile area around Luke Air Force Base. This study was initiated at the request of the Maricopa County Board of Supervisors and Planning and Zoning Commission in response to concern over potential development in areas affected by military aircraft operations. This study established a general guide for future development which would protect health and safety and promote development in the public interest.

The draft *Luke Area Development Guide* was formally presented for public review in October, 1978. During the review process, a significant amount of public opposition to the proposed plan was identified. As a result, the Maricopa County Planning and Zoning Commission unanimously agreed to establish a Citizen Planning Committee to further analyze the proposed Luke Area Development Guide and submit recommendations to the Commission for review. The Planning Commission later increased the size of the study area from 70 square miles to over 300 square miles and to change its name to the White Tanks-Agua Fria Area. At the same time, emphasis shifted from development around Luke Air Force Base to areawide concerns.

The White Tanks-Agua Fria Citizen Planning Committee was appointed by the Planning and Zoning Commission in January, 1979 and held its first meeting that month. Over a three year period, the committee prepared a general policy and development guide for the area with assistance from the Maricopa County Department of Planning and Development. On November 8, 1982, the Maricopa County Board of Supervisors officially adopted the White Tanks-Agua Fria Policy and Development Guide.

An update to this plan began in 1988, and an inventory and analysis of existing conditions was completed along with changes to format and organization in order to correspond with other Area Plans. As part of the process, the planning area was reduced to its current size of approximately 136 square miles. This was caused, in part, by the exclusion of all incorporated areas from analysis and the relocation of the northern boundary to south of Grand Avenue.

Grand Avenue Area Plan Development (1992)

In July 1985, the Maricopa County Department of Planning and Development issued a public “Request for Proposal” to professional urban planning consultants to prepare seven specific land use plans as part of the Maricopa County Comprehensive Land Use Plan. One of these areas was the Grand Avenue Corridor Planning Area.

For the Grand Avenue planning area, Maricopa County requested that the consultants provide an analysis of existing data leading to specific goals, policies, and land uses to guide general land development. The resulting plan encompassed 300 square miles of both urban and natural desert areas.

White Tank / Grand Avenue Area Plan (1999)

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, the County's area plans are being updated so they are consistent with Eye to the Future 2020.

In July, 1998, updates began on both the Grand Avenue Area Land Use Plan and the White Tanks/Agua Fria Policy and Development Guide. After initial review by Maricopa County staff and Project Advisory Committee members, it was decided that these plans would be reviewed and updated as a single, cohesive plan. The updated plan, known as the ***White Tank and Grand Avenue Area Plan***, was expanded to include approximately 760 square miles (**Figure 1–Planning Area**). The increase in area was the result of a desire by citizens and Project Advisory Committee members to develop a land use plan based on regional analysis and issues. To make analysis easier, Project Advisory Committee members identified specific subareas which allow a more thorough identification of issues that affect specific planning locations.

Public Participation: White Tanks/Agua Fria Policy and Development Guide

In preparing the *White Tanks/Agua Fria Policy and Development Guide and Grand Avenue Area Land Use Plan*, community participation and involvement was emphasized. For the White
Tanks/Agua Fria Policy and Development Guide, a citizen advisory committee was appointed to help create an area plan for consideration by the Commission. Committee membership represents a cross section of interests from all portions of the planning area. The Committee provided a variety of viewpoints, which gave insight into local values, interests, and desires. Through open discussion, the Committee was able to reach general agreement on future guidelines. Once drafted, public hearings were held before both the Planning and Zoning Commission and the Board of Supervisors.

Public Participation: Grand Avenue Area Land Use Plan

During preparation of the Grand Avenue Land Use Plan, community participation was emphasized through a number of means. Three public workshops were held to gather input from residents, property owners, business people, and Planning and Zoning Commission members. Newsletters, announcing each workshop and providing project progress reports, were prepared and distributed prior to each workshop. In addition, Planning and Zoning Commission workshops were held to review project progress. Thorough media coverage was also encouraged to increase public awareness and participation in the workshops.

Public Participation: White Tank and Grand Avenue Area Plan

Throughout the Area Plan update process, Maricopa County made a strong commitment to encourage citizen and community participation. This participation allowed stakeholders to identify planning issues and concerns, as well as provide recommendations, comments, and suggestions. Public input was gathered through various methods, including a Project Advisory Committee, several public and focus group meetings, a community mailing, meetings with potentially affected interests, telephone discussions, and participation in a community dialog session.

Project Advisory Committee

A 32 member Project Advisory Committee (PAC) was established early in the plan update process to help identify important planning issues and to share knowledge and recommendations about the area. Exemplifying a range of interests and opinions, PAC members

included citizens, business owners, private landowners, and private planning professionals. Also represented were various federal, state, county, municipal, regional, and educational agencies that have jurisdiction in the planning area. The Project Advisory Committee reviewed plan documents and reports, and provided analysis regarding goals, policies, and land uses. A complete list of Project Advisory Committee members is included on pages III and IV.

Public Meetings

In coordination with the Maricopa County Department of Transportation, the Maricopa County Planning and Development Department held public meetings at various locations, including Peoria, Surprise, Sun City West, Avondale, and Goodyear. These "open house" style meetings allowed citizens to ask questions of project staff; obtain information about the plan updates; and provide recommendations, comments, and suggestions. A citizen questionnaire was also distributed at the public meetings to identify and gauge citizen attitudes.

Focus Group Meetings

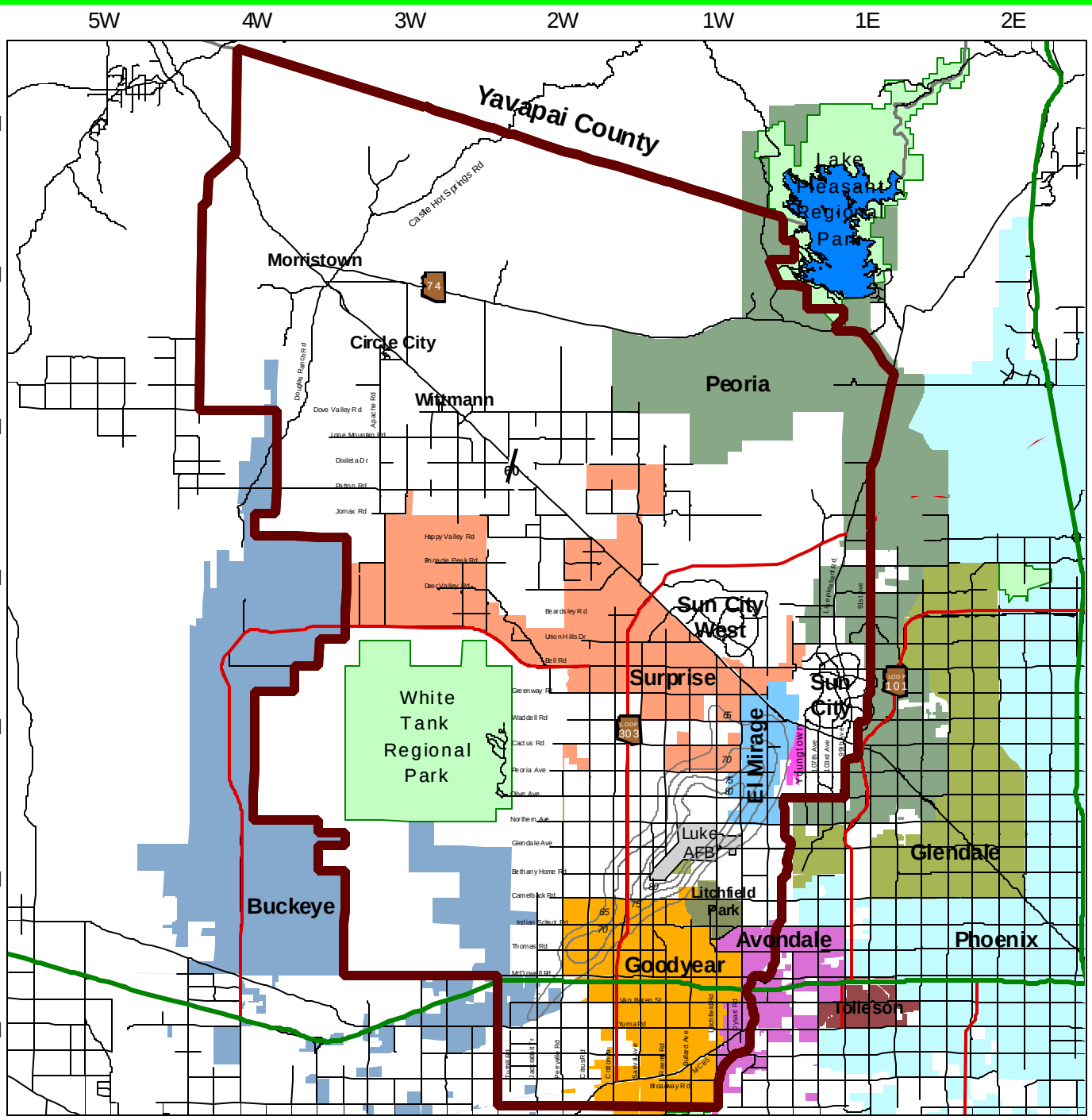
In addition to open house meetings, several focus group meetings were held throughout the planning area to identify issues and concerns that affect specific groups or geographic areas. Focus group meetings were used to discuss issues relating to Luke Air Force Base, economic and community development, environmental preservation, flood and drainage control, the future transportation system, and future land use planning in the Wittmann, Circle City, and Morristown areas.

Community Mailing

To encourage public participation, approximately 750 plan notifications were sent to property owners in the region. These notifications explained the plan update process, how citizens could obtain copies of the plan, and how they could provide recommendations and input. As a result, many residents and property owners were able to obtain the plan directly from Maricopa County Planning and Development Department staff, and from the Maricopa County Planning and Development Department website.

Other Input

Input was also obtained through many telephone calls and email messages from citizens and concerned interests, and from meetings with citizen groups and public agencies. In addition, project staff participated in an Arizona State University West sponsored community dialog session titled "Building Healthy Communities." This forum focused on community-related issues in the West Valley, including future growth and community and civic development.



Planning Area

Figure 1

INVENTORY AND ANALYSIS

Demographic Characteristics and Projections

This portion of the White Tank and Grand Avenue Area Plan analyzes existing demographic and land use conditions.

Planning Area Growth and Change

The White Tank and Grand Avenue Area Plan represents the consolidation of two existing area plans: the White Tank/Agua Fria Policy and Development Guide and the Grand Avenue Area Plan. **Figure 2–Original Plan Boundary** shows the geographical extent of both plans. While these plans were somewhat duplicative, demographic figures for the original plans have been retained to help ensure historical accuracy.

Population and Demographic Characteristics: White Tank/Grand Avenue Planning Area
This section highlights historic and projected population and housing unit data to the year 2020**.** Comparative 1985 and 1990 U.S. Census data is reviewed for both the planning area and for Maricopa County as a whole. Population projections are derived from Maricopa County and Maricopa Association of Governments models, and estimates are based on present and historic census figures and trends.

The approximately 760 square mile White Tank and Grand Avenue Planning Area analyzes all or parts of the incorporated communities of Buckeye, Goodyear, Litchfield Park, Avondale, Glendale, Peoria, El Mirage, Youngtown, and Surprise. The planning area also includes the unincorporated communities of Sun City, Sun City West, Wittmann, Circle City, and Morristown.

Table 1 and **Table 2** show actual and projected population and housing units for the 1992 Grand Avenue Area Land Use Plan, while **Table 3** and **Table 4** show actual and projected population and housing unit estimates for the 1991 revised White Tank/Agua Fria Planning Area. Projections are for resident populations and include total residential housing units.

Figure 3 - Residential Completions shows areas of new construction from 1990 to 1998.

Table 1: Resident Population: Grand Avenue Planning Area 1985-2010

Area	Census 1985	Census 1990	Census 1995	Projection 2000	Projection 2005	Projection 2010
Grand Avenue Planning Area	11,890	17,567	30,028	32,708	32,938	33,168
Maricopa County	1,837,956	2,122,101	2,504,254	2,693,024	2,981,794	3,270,564
% of Total Pop.	0.5	1	1	1	1	1

Source: Grand Avenue Corridor Area Land Use Plan, 1992

Table 2: Resident Housing Units: Grand Avenue Planning Area 1985-2010

Area	Census 1985	Census 1990	Census 1995	Projection 2000	Projection 2005	Projection 2010
Grand Avenue Planning Area	7,768	11,186	16,270	17,977	18,267	18,557
Maricopa County	866,186	952,041	1,194,944	1,398,585	1,602,226	1,805,867
% of Total Pop.	1	1	1	1	1	1

Source: Grand Avenue Corridor Area Land Use Plan, 1992

Table 3: Resident Population: White Tank / Agua Fria Planning Area 1985-2010

Area	Census 1985	Census 1990	Census 1995	Projection 2000	Projection 2005	Projection 2010
White Tank/Grand Ave.	9,022	13,164	13,987	17,873	33,878	50,798
Maricopa County	1,837,954	2,122,101	2,504,254	2,693,024	2,981,794	3,270,564
% of Total Pop.	0.5	0.5	0.5	0.5	1	1.5

Source: White Tanks-Agua Fria Planning Area, 1991; Grand Avenue Corridor Area Land Use Plan, 1992

Table 4: Resident Housing Units: White Tank / Agua Fria Planning Area 1985-2010

Area	Census 1985	Census 1990	Census 1995	Projection 2000	Projection 2005	Projection 2010
White Tank/Grand Ave. Planning Area	2,757	3,620	3,978	5,435	11,349	18,835
Maricopa County	866,186	952,041	1,194,944	1,398,585	1,602,226	1,805,867
% of Total Pop.	0.5	0.5	0.5	0.5	0.5	1

Source: White Tanks-Agua Fria Planning Area, 1991; Grand Avenue Corridor Area Land Use Plan, 1992

Historical Population Analysis

In 1985**,** the Grand Avenue Planning Area's population was 11,890. By 1990, total population had increased 47 percent to 17,567. The 1985 population for the White Tank/Agua Fria Planning Area was 9,022, which increased 46 percent to 13,164 by 1990. Thus, the 1990 population for both planning areas was 30,731. It is important to note, however, that the projected population numbers included ONLY the unincorporated portions of the planning areas, and did not include Sun City because it was not part of the Grand Avenue Area Plan.

Historical Housing Unit Analysis

In 1985, there were 7,768 housing units in the Grand Avenue Planning Area. By 1990, this number had increased 44 percent to 11,186. Between 1985 and 1990, significant residential growth also occurred in the White Tank/Agua Fria planning area. In 1985, there were 2,757 resident housing units, which by 1990 had increased 31 percent to 3,620. Again, it should be noted that these numbers reflect only the unincorporated portions of each planning area and do not include Sun City.

Future Population and Housing Trends

The White Tank and Grand Avenue Area Plan represents an important and timely approach to West Valley planning. Unlike the original Grand Avenue Land Use Plan and White Tank/ Agua Fria Policy and Development Guide, the updated White Tank and Grand Avenue Area Plan accounts for regional considerations. As such, future population and housing projections for both the unincorporated and incorporated areas are included to help guide planning efforts. This regional perspective changes population and housing projections dramatically since many residents live in one of the nine planning area municipalities, or in one of several unincorporated communities.

As shown in **Table 5,** study area population is expected to increase significantly over the next two decades. Census data from the 1995 special census shows there were approximately 136,000 residents. Of this, there are slightly more females (53%) than males (47%), over half the population is between the ages of 55 and 84 (**Table 6),** and the median age is 71**.** Further, **Table 7** illustrates that the area's median household income of approximately $28,000 is less than the comparable County average of approximately $35,000, although statistically valid data is not available.

Maricopa Association of Governments (MAG) projections show planning area population is expected to grow from approximately 172,000 in the year 2000 to approximately 380,000 by 2020. This represents an increase of 120 percent in just 20 years. By comparison, during that same 20 year period Maricopa County population is expected to increase approximately 55 percent.

Table 8 identifies actual and projected residential housing units for the White Tank and Grand Avenue planning area. Data shows that in 1995 there were approximately 65,000 resident housing units in the planning area and an estimated 2.1 persons per household (**Table 9;** Note: A household is a family unit, and a housing unit constitutes one dwelling structure and may contain more than one household). Between 2000 and 2020, total housing units are expected to increase approximately 119 percent from 79,516 to 174,361. Although the total number of housing units in the planning region will more than double in twenty years, total persons per household will remain fairly constant at around 2.2.

Table 5: White Tank / Grand Avenue Planning Area: Population Projections 2000-2020 (Revised)

Area	Census 1995	MAG 2000	MAG 2005	MAG 2010	MAG 2015	MAG 2020
White Tank/Grand Ave. Planning Area	135,722	172,050	211,937	238,961	296,210	379,676
Maricopa County	2,528,700	2,954,150	3,329,550	3,709,575	4,101,775	4,516,100
% of Total Pop.	5	6	6	6.5	7	8.5

Source: Maricopa Association of Governments; US Census Bureau

Table 6: White Tank / Grand Avenue Planning Area: Population Distribution by Age (by percentage)

Area	Male	Female	Under 5	5-17	18-54	55-85	85+
White Tank/Grand Ave. Planning Area	47	53	5	12	29	50	4
Maricopa County	50	50	8	19	53	14	6

Source: U.S. Census Bureau

Table 7: White Tank / Grand Avenue Planning Area: Median Income Distribution (by percentage)

Area	<$10,000	$10,000-14,999	$15,000-29,999	$30,000-39,999	$40,000-59,999	$60,000+	Median Income
White Tank/Grand Ave. Planning Area	8	11	29	18	20	14	$27,931
Maricopa County	10	9	23	15	22	21	$35,623

Source: U.S. Census Bureau

Table 8: White Tank / Grand Avenue Planning Area: Total Resident Housing Units (Revised)

Area	Census 1995	Projection 2000	Projection 2005	Projection 2010
White Tanks/Grand Avenue Planning Area	64,236	79,516	96,886	109,704
Maricopa County	1,194,944	1,398,585	1,602,226	1,805,867
% of Total Pop.	5	5.5	6	6

Source: U.S. Census Bureau; Maricopa Association of Governments

Table 9: White Tank / Grand Avenue Planning Area: Persons per Occupied Housing Unit

Area	Census 1995	Projected 2000	Projected 2005	Projected 2010
White Tanks/Grand Avenue Planning Area	2.11	2.16	2.19	2.18
Maricopa County	2.12	2.23	2.1	1.81

Source: U.S. Census Bureau

Population and Demographic Characteristics: Sub Areas

Table 10 and **Table 11** identify current and future subarea population and housing unit projections. Predictions show that in 2020, most of the approximately 380,000 planning area residents will be concentrated in three sub areas: Luke (149,437), I-10 Corridor (120,338), and Agua Fria (105,864). As such, these three sub areas will also experience most of the future growth in housing units.

Table 10: White Tank / Grand Avenue Planning Area: Sub-area Population Projections

Subarea	1995	2000	2005	2010	2015	2020
Northwest Valley	303	765	1,274	1,841	2,466	3,702
Grand Avenue Corridor	1,434	1,894	2,441	2,881	3,808	5,421
Agua Fria	43,615	52,929	63,383	71,837	87,513	105,864
White Tanks	959	1,091	1,317	1,638	2,613	4,847
Luke	68,091	85,143	102,549	110,974	125,576	149,437
I-10 Corridor	15,147	23,941	34,135	44,035	71,413	120,338

Source: US Census Bureau; Maricopa Association of Governments

Table 11: White Tank / Grand Avenue Planning Area: Sub-area Residential Housing Units

Area	1995	2000	2005	2010	2015	2020
Northwest Valley	114	313	539	793	1,076	1,645
Grand Avenue Corridor	543	746	965	1,157	1,556	2,262
Agua Fria	22,401	26,668	31,214	35,218	43,047	52,215
White Tanks	364	414	511	671	1,196	2,416
Luke	30,702	37,563	45,157	49,047	55,045	65,877
I-10 Corridor	4,242	7,892	12,280	16,853	27,497	49,137

Source: U.S. Census Bureau

Land Use

Existing Land Use and Development

The White Tank and Grand Avenue planning area is large and diverse. Density and land use patterns vary from urban to rural and from public to private ownership, since detailed analysis could be very complex. To help simplify this potentially complex analysis, several issues are examined:

1. Land Development Patterns
2. Zoning Regulations
3. Public Land Ownership
4. Public Facilities and Utilities
5. Special Planning Concerns

Land Development Patterns

Figure 4—Planned Land Use illustrates the diverse land use patterns that exist within this region. Near the center is Luke Air Force Base and surrounding farmland. With approximately 4,200 acres, Luke is the largest fighter training base in the world employing approximately 8,000 military and civilian personnel. In fact, Luke has such a large contingent of aircraft that if it were a sovereign nation it would possess the 5th largest air force in the world.

Surrounding Luke and the adjacent farmland are the communities of Litchfield Park, El Mirage, Glendale, Peoria, Surprise, Goodyear, Buckeye, and Youngtown. Once relatively small, these rapidly growing communities are becoming important residential, commercial, and employment centers.

Also near Luke are the unincorporated communities of Sun City and Sun City West. These communities are available only to people with at least one member of a household that is 55 or older, and are considered “active adult communities” because they contain numerous recreation amenities.

North and west of the urban areas are large tracts of natural Sonoran Desert and low density residential development. These areas contain important public open space and recreation amenities, including White Tank and Lake Pleasant Regional Parks. These areas also contain extensive federal and state land holdings.

Zoning Regulations

The planning area includes a variety of zoning districts that Maricopa County enforces through its adopted zoning ordinance. Established zoning district categories, along with zoning maps, are found in *Appendix B–Generalized Existing Zoning*.

Public Land Ownership

Figure 5 – Land Ownership identifies publicly held property in the White Tank and Grand Avenue planning area. Public property includes areas managed by the federal government, State of Arizona, and Maricopa County.

A. Federal Land

The United States Department of Interior, Bureau of Land Management (BLM) and Bureau of Reclamation administer all of the federal land in the planning area. A majority of the approximately 65,000 acres of BLM land is located north of State Route 74 and in the vicinity of White Tank Regional Park. Most BLM land is undeveloped and in its natural condition, although mining and grazing claims are found in some areas.

Much of the BLM land in the area is administered through a Resource Management Plan, as directed by the 1976 *Federal Land Policy and Management Act*. This law declared it is the policy of the United States to retain public lands in federal ownership unless it is determined, through a land use plan, that disposal of a particular parcel will serve the national interest. Such parcels can be made available for sale if they meet one of three criteria: 1) they are scattered, isolated tracts that are difficult or uneconomical to manage; 2) they were acquired for a specific purpose and are no longer needed for the original purpose; or 3) disposal of the land serves important public objectives such as community or economic development.

B. State Land

The Arizona State Land Department administers approximately 119,000 acres of State Trust land throughout the planning area. Development will likely occur in these areas when the State Land Department provides lease contracts or offers land for sale. All of the State Trust land in the White Tank and Grand Avenue Planning area is subject to the 1998 Arizona Preserve Initiative (API). The API is designed to encourage preservation of select parcels of State Trust land, in and around urban areas, for open space. State law details a process by which Trust land can be leased for up to 50 years or sold for conservation purposes. Leases and sales must occur at public auction.

Conservation is defined in the Arizona Preserve Initiative as "protection of the natural assets of State Trust land for the long-term benefit of the land, the beneficiaries, lessees, the public, and unique resources such as open space, scenic beauty, protected plants, wildlife, archaeology, and multiple use values." Under Arizona Revised Statutes §37-312, the only State Trust land eligible for conservation are those located within:

- One mile of incorporated municipalities with a population of less than 10,000 people
- Three miles of incorporated municipalities with a population equal to or greater than 10,000 people
- Ten miles of incorporated municipalities with a population equal to or greater than 10,000 people that are located within counties with a population of greater than 500,000 people.

C. Maricopa County Land

Maricopa County manages two large regional parks in the planning area. White Tank Regional Park covers 23,667 acres and offers mostly passive recreation opportunities. Lake Pleasant Regional Park—only a portion of which is in the planning area—offers additional open space and recreational opportunities.

Public Facilities and Utilities

This section reviews the various public and private utilities and facilities in the White Tank and Grand Avenue planning area. This assessment is not intended to provide a detailed, in-depth
analysis of operations or specific service programs. Rather, it provides an overview of existing conditions to help determine how current services can help support increased development.

This review is organized into seven subsections:

A) Water Distribution Systems
B) Sanitary Sewer System
C) Sheriff's Department
D) Fire Protection
E) Educational Facilities
F) Parks and Open Space
G) Landfills

A. Water Distribution System

In addition to the numerous municipal water companies, various public and private distributors supply domestic water for the White Tank and Grand Avenue planning area. Domestic and agricultural water comes from both ground and surface supplies. Groundwater overdraft, primarily in the central planning area, has long been a historical concern due to land subsidence and the associated earth fissure phenomenon. The Arizona Water Bank program may help provide a future solution as Colorado River Water is directly recharged into the appropriate aquifers.

Although water quality is generally good, there are concerns regarding the impacts that prolonged agricultural fertilizer use may have on water quality.

B. Sanitary Sewer System

Sewer system availability varies throughout the planning area. Most areas in and adjacent to municipalities and large unincorporated communities (e.g. Sun City and Sun City West) are served by public or private sanitary utilities. Areas outside of the *Urban Service Area* operate primarily on septic tank, although the use of package treatment plants for larger developments is becoming a common practice.

C. Sheriff's Department

The Maricopa County Sheriff's Department, located at 102 West Madison Street in downtown Phoenix, serves the unincorporated areas of Maricopa County. Sheriff's Department protective services are provided through substations located in Surprise, Avondale, Wickenburg, and Buckeye. Each of the nine municipalities has its own police department (See **Figure 6—existing facilities and utilities**).

D. Fire Protection

Numerous fire districts operate in the planning area. Sun City, Sun City West, and the various municipalities have their own fire districts, while most other areas are served primarily by Rural Metro Corporation and other fire districts in unincorporated communities.

E. Elementary & High School Districts

Numerous elementary and high school districts are located in the planning region. Although unique circumstances exist, most students attend one of the following elementary and high school districts:

Elementary Districts	Stand Alone Districts	Union High School Districts	Unified School Districts
Litchfield	Morristown	Buckeye	Wickenburg
Avondale	Nadaburg	Agua Fria	Peoria
Liberty	Ruth Fisher		Dysart
Buckeye			Deer Valley

As in other parts of the metropolitan area, rapid population growth has a significant impact on capacity and construction financing in several of these school districts. As such, many new developments are being required to dedicate land for future schools and/or assist in school construction.

F. Post-Secondary Facilities

In addition to elementary and high school districts, the planning area also contains numerous post-secondary educational facilities that attract citizens from around the phoenix metropolitan area. These facilities include:

- Estrella Mountain Community College (Avondale)
- Sun Cities Lifelong Learning Center of Rio Salado College (Surprise)
- Wayland Baptist College (Luke Air Force Base)
- Park College (Luke Air Force Base)
- Rio Salado College (Luke Air Force Base extension)

G. Parks and Open Space

The following are park and open space facilities in and adjacent to the White Tank and Grand Avenue planning area:

- White Tank Mountain Regional Park

  White Tank Mountain Regional Regional Park is managed by the Maricopa County Parks Department and generally serves people within a one hour travel distance. This 26,337 acre park has very distinct peaks, which rise sharply from its base at 1,400 feet to over 4,000 feet at the highest point. White Tank Mountain Regional Park has an extensive hiking and equestrian trail system, as well as camping and picnic facilities.

- Lake Pleasant Regional Park

  Located in the City of Peoria, the 23,662 acre Lake Pleasant Regional Park is managed by the Maricopa County Parks Department. The park is dominated by the 10,000 acre Lake Pleasant where visitors enjoy boating, water and jet skiing, sailing, and fishing. Lake Pleasant Park also includes picnic areas, hiking and riding trails, concessions, and camping facilities.

- Estrella Mountain Regional Park

  The Estrella Mountain Regional Park, located in Goodyear, is also managed by the Maricopa County Parks Department. This 19,840 acre park includes a variety of amenities including 65 acres of grass with covered ramadas, picnic tables, grills, restrooms, playground equipment, lighted ballfields, an 18-hole golf course, and a rodeo arena. Camping, hiking, biking, and horseback riding facilities are also available.

F. Landfills

The most significant landfill in the planning area is the Northwest Valley Landfill, located near Deer Valley Road and 195th Avenue. Recent estimates show that this large landfill has enough capacity for approximately 75 years.

Special Planning Concerns

The White Tank and Grand Avenue planning area is both large and diverse. These conditions, combined with rapid physical growth, make compatibility a very important consideration. This is especially true in areas around noise generating facilities like Luke Air Force Base and the associated auxiliary bases, as well as around the Daimler-Chrysler and Volvo Proving Grounds. Preparing for orderly, timely, and compatible growth around these facilities is an important component of the White Tank and Grand Avenue Area Plan. Discussions regarding development around Luke Air Force Base are included in the section titled "Westside Military Airbase Area Land Use Plan."

The area's large retirement population is another important planning concern. Because more than half of the region's population is over 55, it is important to provide services and facilities to meet this group's needs. Such facilities and services include medical and healthcare, as well as recreation and leisure. The White Tank and Grand Avenue Plan addresses this issue in several different sections.

As with the retirement population, meeting the needs of rural residents is also important. Most critical is the need for access to medical and other day-to-day services. Balancing the need for these services while maintaining rural lifestyles poses a significant challenge for policymakers. However, specific goals and policies relating to these needs are included to help achieve the necessary balance.

With rapid growth comes other concerns such as traffic congestion, air pollution, and environmental degradation. To help counter these effects, Maricopa County considers master planned communities (i.e. development master plans) as a desirable type of development. Development master plans (DMPs) are generally large-scale developments that provide mixed land uses. *Eye to the Future 2020,* the Maricopa County Comprehensive Plan, supports the use of DMPs to promote balanced growth as well as innovative and creative design techniques. In addition to mixed land uses, development master plans can offer a range of housing choices, open space and recreational opportunities, and an appropriate multi-modal transportation system. The land uses, densities, and other elements of the DMP shall be evaluated on the circumstances of each case.

Westside Military Airbase Area Land Use Plan
On December 9, 1991, the Maricopa County Board of Supervisors adopted the *Westside Military Airbase Area Land Use Plan* to ensure land use compatibility with the noise and accident potential of Luke Air Force Base. Many of the plan's elements are incorporated into the Maricopa County Zoning Ordinance and the updated White Tank and Grand Avenue Area Plan. However, increasing growth pressure in the Luke Air Force Base area has prompted some changes in various elements. These changes are reflected in the "Plan Elements" section of this report. As a result, the White Tank and Grand Avenue Area Plan takes precedence over this and other county plans in the planning area.

Future Land Use Definitions and Guidelines

Definitions and guidelines are included to give a better understanding of the land use discussions. In addition, for each land use designation the corresponding definitions and guidelines help assure consistent interpretation. Land use categories in the White Tank and Grand Avenue Area Plan are in agreement with the Maricopa County Comprehensive Plan, and the system of regional land use standards.

Future Land Use Analysis

An analysis of existing land use development patterns in the White Tank and Grand Avenue planning area follow each definition. While the goals, objectives, and policies are the basis of the area's desired future land use pattern, the ultimate development pattern is tempered by recognition of these existing development activities and established patterns. This includes consideration for land uses and features outside the planning area that might affect desired future development patterns. In addition, adopted municipal land use plans were considered during the analysis of land uses.

State law requires that any and all rezonings be consistent with the adopted county plan. As such, changes in zoning for specific areas or land parcels must be evaluated in relation to overall advancement of plan goals, objectives, and policies. Guidelines following the land use definitions are used to help ensure that the intent and integrity of the White Tank and Grand Avenue Area Plan is retained.

Open Space Land Use: Definitions & Guidelines

The preservation of open space in urban and rural areas is an important consideration in the White Tank and Grand Avenue Area Plan. In addition, the Growing Smarter Law of 1998 requires that Maricopa County plan for the acquisition and preservation of open space. This open space plan must include the following:

- An inventory of open space areas, recreational resources, and designated access points to open space areas.
- An analysis of forecasted needs, management and protection policies, and resources and implementation strategies to acquire additional open space areas.
- Policies and implementation strategies that promote a regional open space and recreational system, and consideration for existing regional open space plans.

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. Residential development up to one (1) dwelling unit per acre is permitted in certain open space areas,

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. The Maricopa County Comprehensive Plan defines two types of open space: Dedicated and Proposed.

Dedicated Open Space

Dedicated Open Space areas are those under public ownership—except state trust land—that have unique environmental and physical qualities which prohibit most physical development. These qualities include mountains and foothills, rivers and washes, canals, significant desert vegetation, wildlife habitat, and cultural resources. In Maricopa County, dedicated open space exists in the form of regional parks, wilderness areas, wildlife areas, and the Tonto National Forest. These open space areas, which cover nearly 2,000 square miles, provide residents with recreation and scenic opportunities. The most prominent Dedicated Open Space in the planning area is White Tank Regional Park and the land administered by the Bureau of Land Management north of State Route 74 and south of White Tank Park.

Proposed Open Space

Open spaces, if acquired for the public domain, are intended to be planned and managed to protect, maintain, and enhance their unique value for recreational, aesthetic, and biological purposes. Proposed Open Spaces, when combined with existing Dedicated Open Spaces, can help establish an interconnected system of protected natural open spaces. Within these areas, public access should be protected and environmental preservation encouraged. Significant mountain areas, major rivers and washes, upland Sonoran Desert vegetation, canals and trails, and archaeological sites will be considered for potential open space and recreational opportunities. All private and State Trust Land set forth herein as proposed open space may be developed at residential densities of up to one (1) dwelling unit per acre but without the necessity of amending this plan—subject to applicable planning and zoning regulations—unless it is added to the public domain or protected using other techniques that respect property rights.

The extent to which open space can be added to the public domain or otherwise be protected depends upon both the availability of specific preservation techniques (i.e. actions that can be used to acquire and protect open space) and the public's commitment to financially support such techniques. Techniques that could be utilized include:

- Fee simple purchase ("pay as you go")
- Conservation Easements
- Purchase of Development Rights
- Purchase of right-of-way easements
- Environmentally sensitive land ordinance
- Right of first refusal
- Density transfers
- Performance based zoning
- Dedications/donations
- Preservation easement
- Hillside ordinance
- Cluster development
- Conveyance of property to homeowners association
- Arizona Preserve Initiative
- Lease/use agreements

The feasibility of any of these preservation techniques should be evaluated on a case-by-case basis, but should not infringe on the property rights of any landowner.

Open Space Land Use: Analysis

A significant amount of land in the planning area is designated as open space. The largest concentrations of open space lands are located in the White Tank Regional Park and north of State Route 74. White Tank Park is owned and operated by Maricopa County and will remain as permanent open space. Most land north of State Route 74 is owned and administered by the Arizona State Land Department and the Bureau of Land Management. In the future, some of this land may be made available for sale or exchange, or may be retained as permanent open space. However, because of this area's scenic beauty the White Tank and Grand Avenue Area Plan encourages its preservation as much as possible. If the land is not acquired by the county, this plan recognizes the private property rights of those private land owners and of the State Land Department to develop their respective lands to a density of at least one residential dwelling unit per acre.

Other open space includes areas along State Route 74 and Grand Avenue (Wickenburg Highway). These transportation routes have specific zoning standards that preserve their unique scenic corridors and viewsheds.

Agriculture Land Use

The Agriculture Land Use category identifies lands that are suitable for cultivation, growing crops, and the production and maintenance of livestock. Certain agribusiness, commercial, and industrial activities may be allowed if deemed compatible with the safety and noise hazards of Luke Air Force Base.

Historically, agriculture has been one of the county's most important industries and has a long established presence in the White Tank and Grand Avenue planning area. Much of Maricopa County's agricultural land is being converted to urban uses, even though many West Valley residents believe that agriculture is an important activity. However, owners of agricultural property have the right to develop their land as they choose, subject to state laws and local planning and zoning guidelines. For those residents who wish to continue farming, Maricopa County should consider providing technical guidance to ensure agriculture viability. Such guidance could include:

- Transferring development rights to other areas where development may be more appropriate.
- Encourage infill development and directing high intensity development into Urban Service Areas.
- Establish land use buffers to mitigate the impact of agriculture and agricultural resources on nonagricultural development.
- Providing incentives to promote the preservation of agricultural lands, such as clustered development or community supported farms.

It should be noted that in 1999, the Arizona State Legislature passed agriculture preservation district legislation for the purpose of maintaining and encouraging existing agriculture uses and open space, without impairing private rights of ownership. Under this legislation,

voluntary participation in an agriculture preservation district is encouraged in relation to the purchase, transfer, or lease of ownership or development rights to property. Moreover, an agriculture preservation district may encourage participation by landowners through the use of regulatory and tax incentives.

Residential Land Use: Definitions and Guidelines

Eye to the Future 2020, the Maricopa County Comprehensive Plan, outlines 24 land use categories, five of which are residential. The White Tank and Grand Avenue Area Plan contains three residential land use categories, although additional categories are permitted within Development Master Plans that allow higher density development. In addition, other "uses by right," such as schools and churches, are permitted in residential land use categories although special consideration should be given to their specific locations. 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.

In unincorporated Maricopa County, residential density within any given project is calculated based upon the overall gross acreage of the site.

Rural (0-1.0 Dwelling Units per Acre)

The Rural category identifies areas where single family residential development is desirable, but unique circumstances dictate lower density or urban services such sewer, water, schools, roads, and emergency services are limited or nonexistent. Suitability is determined based on location, access, existing land use patterns, and natural or human constraints. Densities greater than 1.0 dwelling unit per 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 1.0 dwelling unit per acre is maintained. Uses in this category include agriculture and single family residential.

Large Lot Residential (greater than 1.0 but less than or equal to 2.0 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 2.0 dwelling unit per 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 2.0 dwelling unit per acre is maintained. A community sewer and water system will be required for developments above 1.0 dwelling unit per acre and may be required for those below 1.0 dwelling unit per acre depending on preexisting conditions.

Small Lot Residential (greater than 2.0 but less than or equal to 5.0 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 5.0 dwelling unit per acre.

Densities greater than 5.0 dwelling unit per 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 5.0 dwelling unit per acre is maintained. A community sewer and water system will be required for development at these densities.

Residential Land Use: Analysis

Several significant principles guide residential development in the White Tank and Grand Avenue Area Plan. First, consideration is given to compatibility in order to protect public health, safety, and general welfare. This is especially important in areas around Luke Air Force Base and other significant noise operations such as the Daimler-Chrysler and Volvo Proving Grounds. Only residential development at rural densities (0-1 dwelling unit per acre) is intended for most areas near these facilities. Further, low-density development will help protect the continuous safe operation of these facilities.

Another guiding principle is the use of density transitions for residential land uses. Because high and low residential densities can be considered incompatible unless part of a well designed master planned community, density transitions are used throughout the planning area.

A final principle is the continuation of rural densities in those areas considered environmentally sensitive, where communities desire a rural lifestyle, and where urban services are not available. Since low density development can negatively impact land patterns and be an inefficient use of public resources, this designation is primarily located in regions outside of the Urban Service Area. Further, residents who choose a rural lifestyle, outside of a development master plan, should not expect urban services in the unincorporated area.

Development Master Plans

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 may be initiated by property owners and should consider having the following features:

- Creative and innovative designs.
- Mixed land use opportunities and a range of housing types.
- Mixed housing densities that are transitioned with spatial, structural, and visual buffers.
- Multi-modal transportation opportunities to reduce automobile dependency and increase access and mobility.
- Flexible standards for roadway design, transit facilities, pedestrian circulation, and bicycle lanes.
- Employment opportunities that contribute to a community's economic base while increasing the jobs/housing balance.

- Open space preservation to enhance economic value, visual character, wildlife and vegetation preservation, and residents' overall quality of life.
- Availability of urban services such as water and sewer systems, police and fire protection, schools (except in retirement communities), parks, and libraries if needed and not available within a reasonable distance.

Historically, DMPs have been allowed throughout the county, although appropriate development guidelines will vary depending on the individual circumstances of each DMP 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.

Development Agreements and DMPs
Development agreements are *voluntary* arrangements between local governments and developers concerning the design and construction of specific development projects. These agreements protect projects 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
The following commercial land use categories are allowed in the White Tank and Grand Avenue planning area. These commercial categories vary according to intensity and location. Direct access on an arterial street or freeway frontage road is an important consideration.

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 are 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 5,000 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 uses within this category are subject to plan review and approval.

Commercial Land Use: Guidelines
The following guidelines assist land use planning as it relates to the commercial land use designation:
- Commercial activities include appropriate service and retail uses. These uses may be permitted in neighborhood retail centers, but only on a scale compatible with adjacent residential development.

- All commercial development should be landscaped utilizing themes that are related to, and cohesive with, adjacent development. Landscaped easements along public rights-of-way using shrubs, trees, and/or earth berming will be provided and installed at the time of street construction. Both on-site and off-site signs should be controlled in terms of location and maximum size.
- Any and all commercial development along Grand Avenue (U.S. Highway 60/89; State Route 93) shall conform to the development standards contained in the *Wickenburg Highway Scenic Corridor Plan Development Guide* and the Maricopa County Zoning Ordinance.
- Any and all commercial development along State Route 74 shall conform to the development standards contained in Article XXII-F of the Maricopa County Zoning Ordinance.

Commercial Land Use: Analysis

Given the significant number of highways and arterial streets in the White Tank and Grand Avenue planning area, it is likely that commercial development will increase as opportunities along these corridors become available. However, commercial development should be carefully planned so as not to negatively impact traffic patterns and adjacent land uses. Further, distinctions should be clearly made between the intended services provided by neighborhood retail centers and community retail centers. For example, while neighborhood retail centers should be supported within a master planned community, community retail centers should be encouraged to locate at major intersections where better access is available.

A unique challenge is presented in the Wittmann, Circle City, and Morristown areas where both neighborhood and community retail centers could be viable given their location along a major highway. However, because urban services are not readily available and because these communities are generally rural in nature, only neighborhood retail centers are encouraged at this time.

Future commercial development along Grand Avenue and State Route 74 should be carefully planned and designed. Indeed, there are regulations that govern commercial development design in both the Wickenburg Highway Scenic Corridor Plan and the Maricopa County Zoning Ordinance. As with higher density residential development, any commercial development should be discouraged unless and until it can be located in the Urban Service Area.

Employment Center Land Use: Definitions

The following are employment center land use categories allowed in the White Tank and Grand Avenue planning area. Each category varies according to intensity and impact on adjacent areas, and access to arterial roads and highways is an important consideration.

Industrial Employment Centers

The Industrial Employment Centers category identifies locations for major employment centers. Uses permitted 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.

Mixed Use Employment Centers
The Mixed-Use Employment Centers category identifies locations of major planning area employment centers, with emphasis on cohesive and comprehensive planned environments. Uses permitted in this category include offices, light industrial parks, business parks, research parks, government facilities, post secondary educational facilities, and major medical facilities. However, residential uses are not allowed in mixed-use employment centers. Compatibility with adjacent current and future land uses is an important consideration and developments are subject to plan review and approval.

Employment Center Land Use: Guidelines
The following guidelines help governing all land use planning as it relates to the Employment Center land use designation:

- Proposed uses must be appropriate for the type of employment center in which they are located.
- Uses identified in both the Industrial and Mixed Use categories shall be encouraged to locate along principal transportation routes such as highways and identified roads of regional significance. These uses may be required to provide appropriate landscaping to buffer from surrounding land uses, and adequate buffering, landscaping, and screening may also be required to minimize impacts on public views.

Employment Center Land Use: Analysis
The lack of existing employment centers is an important concern. Because this region will experience tremendous population growth over the next two decades, residents will require employment opportunities proximate to their homes. In addition, since geographical constraints prevent the addition of needed east-west roads, giving West Valley residents the opportunity to work near their homes will help reduce traffic congestion, reduce commuting times, increase worker productivity, improve air quality, and create more efficient land use patterns. Therefore, several employment cores are identified to help serve the needs of current and future residents.

Buffering and Transitional Land Use Guidelines
When two or more types of land use are shown on the White Tank and Grand Avenue Area 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 setbacks, or other recognized methods. Buffering is required for intensive uses where a less intensive use already exists, or where the White Tank and Grand Avenue Area Plan shows a less intense use adjacent to a more intense use. Situations which may require transitional land use include:

- Low density, single family residential development adjacent to multi-family development.
- Single or multi-family development adjacent to commercial or industrial land uses.

In cases where buffering is necessary, these and other methods may be considered:

- Landscaped open space
- Arterial or collector streets with landscaping
- Major landscaped transmission line easements
- Block walls, landscaping, earth berms,
- Any combination of the above

Facilities and Services
The White Tank and Grand Avenue planning area contains a variety of traditional urban, suburban, and rural developments. As such, the quantity and location of facilities and services varies. To encourage orderly, timely, and fiscally responsible growth, higher density development (greater than 1 dwelling unit per acre) will be required to locate in the *Urban Service Area.*

The Urban Service Area (USA) designation serves as a decision making guide to encourage coordinated physical development within the urbanizing area. The USA is based on the provision of infrastructure and services necessary to establish and maintain high quality urban development. 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 Urban Service Area is considered suitable for higher density development, as well as an area considered efficient to expend public infrastructure funds. A proposed development might be considered within an USA if it conforms to the relevant general/area plan, and utilities, infrastructure, and urban services can be provided.

For development outside the Urban Service Area, a range of facilities, infrastructure, and services may not be required and will be reviewed by the County on a case-by-case basis. Although each development must be considered on its own merits, **Table 12** provides reference guidelines that should be used when determining and sizing necessary facilities.

Table 12: Facilities Space Standards

Type	Space Requirements	Source
Parks and Recreation Facilities		
Minimal Park Standards	6¼ to 10½ acres/1,000[1]	National Recreation and Parks Individual Park Type *Standards*
Playlots	0.1 to 0.3 acres/1,000 persons	Ibid
Neighborhood Playground	2.0 acres/1,000 persons	
Neighborhood Park	2.0 acres/1,000 persons	
Community Playfield	1 acre/1,000 persons	
Major Community Park	5 acres for 1,000 to 10,000 persons	
Open Space	.75 to 1 acre/1,000 persons	
Baseball (youth)	1.2 acres/5,000 persons	
Basketball	7,280 sq. ft./5,000 persons	
Swimming Pool	2.0 acres/20,000 persons	
Libraries		
Regional Library	40-50,000 sq.ft./ 80-125,000 persons	Planning for Implementation For the Maricopa County Library District, 1990
Community Library	15-20,000 sq.ft./30-50,000 persons	Ibid.
Neighborhood Library	3-5,000 sq.ft./10-20,000 persons	Ibid
Educational Facilities[2]		
Elementary School	8-12 acres, 1 school per 1,500-5,000 persons	U.S. Department of Health Education and Welfare;Urban Planning and Design Criteria, 3d Edition
Junior High School	20-25 acres, 1 school/1,000-16,000 persons	Ibid
Senior High School	30-45 acres, 1 school/14,000-25,000 persons	Ibid

[1] Using the NRPA standard applied to the existing White Tank/Grand Avenue planning area population, a park system, at a minimum, is composed of total acreage of 6¼ to 10½ acres developed open space per 1,000 persons.

[2] Note: These standards are provided as a base reference for the Area Plan. Each of the respective school districts in the White Tank and Grand Avenue planning area determine standards for all facilities within the school district. Consultation with these school districts is recommended.

Transportation

Transportation System Plan

An appropriate County transportation network supports the safe and efficient movement of goods and people, is environmentally compatible with surrounding conditions, and is supportive of economic development activities. To fulfill these requirements, Maricopa County developed a flexible, comprehensive Transportation System Plan (TSP). The TSP helps evaluate regional transportation system impacts, helps identify funding and maintenance priorities, and organizes roadways under MCDOT's jurisdiction into primary, secondary, and local roads. These roadway classifications are an important part of the functional classification system, identified in **Figure 7–Proposed Long Range Functional Classification System**.

Primary Roadway System

According to the Maricopa County Transportation System Plan, primary roads consist of key facilities to serve regional travel. They are either MAG Roads of Regional Significance, or are of major importance to the county roadway system. Primary roads constitute a seamless system crossing jurisdictional boundaries. Approximately 40 percent of the existing primary road system is located in unincorporated Maricopa County.

The MAG Roads of Regional Significance system and municipal general plans serve as the basis for the primary road system. MAG identified Roads of Regional Significance based on their ability to relieve traffic congestion, provide continuity and improve air quality. General plans include additional guidance by defining significant roads within metropolitan planning areas. Other roads were added to address specific needs of Maricopa County. Any future updates to the Roads of Regional Significance or municipal general plans will be considered for inclusion in MCDOT's road system.

Roadway Level of Service (LOS)

Roadway level of service is used to determine the efficiency level of existing and future roads and intersections. Levels of service provide a comparative measure for traffic operation efficiency, and are usually identified with letter grades. These letter measurements include:

- *Service Level A:* Free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by highway features and driver preferences.

- *Service Level B:* Indicative of free flow, but the presence of other vehicles begins to have a noticeable impact on speeds and freedom to maneuver.

- *Service Level C:* Represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream, and to select an operating speed, is now clearly affected by the presence of other vehicles.

- *Service Level D:* Borders on unstable flow. Speeds and ability to maneuver are severely restricted because of traffic congestion.

- *Service Level E:* Operations at or near capacity, and are unstable.

- *Service Level F:* Forced or breakdown traffic flow.

Since most jurisdictions want service levels of D or higher on all roadways, those in the service level E and F range normally require further review and possible improvement. Where feasible, capacity improvements or other actions are usually recommended if service levels are worse than level D.

Few roads in the White Tank and Grand Avenue planning area are currently at or below service level D. Those that are below level D include:

- Grand Avenue from Thunderbird Road to Greenway Road
- Thunderbird Road from 99th Avenue to 107th Avenue
- Meeker Boulevard from 135th Avenue to R.H. Johnson Boulevard
- Litchfield Road from Northern Avenue to Olive Avenue

As future growth and development occur, other planning area roadways may reach unacceptable traffic levels and require modification. Anticipating and correcting potential problems is one of the purposes of the Northwest Valley Transportation Study.

Northwest Valley Transportation Study

In cooperation with West Valley municipalities, the Maricopa County Department of Transportation prepared an intensive study and plan for the region's transportation system. This plan is comprehensive in that all surface transportation modes within the region are analyzed and included.

The mission of the Northwest Valley Transportation Study is to support a safe and efficient transportation network for the movement of goods and people in the northwest Phoenix metropolitan area that is compatible with the surrounding environment and is supportive of economic development activities. This study produced a five-year capital program, a ten-year implementation plan, and a long-range (twenty-year) transportation program to support the transportation buildout network already adopted. To help ensure coordination and compatibility, the goals, objectives, and policies of the Northwest Valley Transportation Study are reflected in the White Tank and Grand Avenue Area Plan.

Southwest Valley Transportation Study

in 1995, the Maricopa County Department of Transportation, in cooperation with the communities of Buckeye, Avondale, Goodyear, Litchfield Park, and Tolleson initiated the *Southwest Valley Transportation Study (SWVTS)*. This study, which encompasses part of the White Tank and Grand Avenue planning area, developed a comprehensive, multimodal transportation plan consisting of short, medium, and long-range transportation improvements. The SWVTS identified several significant findings and recommendations, including:

- Between 2001 and 2020, completing 87 roadway improvement projects subject to adequate funding.
- Identifying funding resources for improved transit service.
- Supporting a coordinated, non-motorized transportation system, including bicycle and multi-use paths.

Rural Maricopa Transit Development Program

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

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

Capital Improvement Program

Roadway investment decisions by the Maricopa County Department of Transportation 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 Capital Improvement Program (CIP) to identify project funding priorities for the next five years. In other words, 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 CIP determines future road expansions and improvements. Several planning area projects are identified in the 1998-2002 Capital Improvement Plan, most notably the completion of Loop 303 from Grand Avenue to Lake Pleasant Road.

Scenic/Recreational Overlays

A series of scenic/recreational overlays are identified for segments of the County roadway system. These overlays help maintain scenic beauty, encourage orderly and sensitive development, and preserve the natural and cultural landscape.

The White Tank and Grand Avenue planning area currently has two designated scenic corridors: Highway 74 and Wickenburg Highway. These corridors have specific provisions and standards that are enforced in the Maricopa County Zoning Ordinance. As such, additional planning consideration must be given to these areas.

Public Transit Service

Public transportation in unincorporated Maricopa County is strongly influenced by population and land use patterns. Portions of the planning area have urban characteristics, while other areas are more rural. Current land patterns and lack of population density prevent significant transit service. However, providing public transit service for residents in rural communities is important to their mobility and quality of life, and viable rural transportation alternatives, both public and private, should be evaluated and encouraged.

Recent regional efforts have focused on ways to encourage development patterns that reduce the need for automobile travel. At a regional level, reduced auto usage may help improve air quality, preserve agricultural and open space, and build community identity. In addition, transit can be more effective when it is considered a cost-effective alternative to congested roadways, high vehicle operation costs, and limited parking options. In short,

transit should effectively serve both transit-dependent riders and so-called "transit by choice" riders.

Alternative Transportation Modes

In addition to public transit, alternative transportation modes must play an increasing role in Maricopa County's future transportation system. New growth and development must consider an integrated and balanced circulation system that contributes to an efficient regional transportation system. Facilities and services should be made available to both pedestrians and bicycle riders in order to make these transportation options efficient, safe, and cost-effective.

Environment

An important principle of the White Tank and Grand Avenue Area Plan is the maintenance and improvement of the physical environment. Therefore, a thorough understanding of major natural and cultural resources is necessary and will be accomplished by analyzing several environmental features.

Environmental Features

The following environmental features describe those natural and man-made elements that affect planning area growth and development:

- Physical Setting
- Topography
- Climate
- Soils
- Geology
- Air and noise quality
- Hydrology
- Vegetation
- Wildlife
- Archaeology

Physical Setting

The White Tank and Grand Avenue study area is located in the north and west portion of Maricopa County (see **Figure 1)**. The planning area extends north from the Gila River to the Yavapai County line, and west from the Agua Fria River to the western slopes of the White Tank Mountains. All or parts of nine municipalities—Buckeye, Goodyear, Litchfield Park, Avondale, El Mirage, Peoria, Glendale, Youngtown, and Surprise—are located in the study area, as are the unincorporated communities of Sun City, Sun City West, Wittmann, Circle City, and Morristown. In addition, the area also has many distinctive features including Luke Air Force Base, the Central Arizona Project Canal, McMicken Dam, White Tank Regional Park, and the Daimler-Chrysler and Volvo Proving Grounds.

The planning area encompasses approximately 760 square miles of varying landscapes. The central and southern areas are characterized by urban and suburban development patterns, while areas in the north and west are more rural in nature. Although significant growth is occurring, there are still vast areas of scenic, undisturbed Sonoran Desert.

Topography

As with landscape, topography also varies greatly. As illustrated in **Figure 8–Slope**, slopes range from less than 2% in much of the southern, central, and north-central region, to over 20% in the White Tank and Hieroglyphic Mountains. In addition, elevations range from approximately 900 feet above sea level near the Gila River, to approximately 4,000 feet at the peak of the White Tank Mountains. Much of the central planning area is relatively flat, which is why farming has been popular for several decades. In contrast, the western and northern areas are mountainous and offer both scenic beauty and recreational opportunities.

The area also has numerous water and drainage features, including the Agua Fria and Gila Rivers, as well as large desert channels and washes.

Climate

Hot and dry summers, and generally mild fall, winter, and spring seasons characterize the area's climate. Daytime temperatures reach or exceed 90° Fahrenheit about 180 days each year. From early June through mid-September the average daily maximum temperature exceeds 100° Fahrenheit. In November through March, the average daily temperatures range from the 60s to the 70s, and temperatures below 32° are not uncommon.

Precipitation averages between 7 and 8 inches annually, but can vary significantly from year to year. Most precipitation occurs in two definable seasons. The first season is from November through March when the area is impacted by storms from the Pacific Ocean. The second season occurs in the summer (July through September) when moist air from the Gulf of Mexico influences weather patterns. Storms in both seasons can create flooding and drainage problems depending on their intensity and duration.

Soils

Soil types and their location have a direct effect on potential land uses. Indeed, 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 normally categorized by *associations*. 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 usually named for the major soil it represents. There are thirteen major soil associations in the White Tank and Grand Avenue study area, and their characteristics are described later in this section. Because soil characteristics vary, 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. **Figure 9–Soils** shows the thirteen major soil associations in the planning area. All but one of the associations are formed as part of alluvial fans, valley plains, stream channels, and terraces. These soils and their characteristics are as follows:

A) *Gran-Rock Outcrop Lehmans Association:* Shallow to very shallow, well-drained soils existing on alluvial fans. Slopes range from 8 to 65 percent and annual precipitation from 8-12 inches. This association is characterized as a gravelly-clay loam with slow permeability.

B) *Tremant-Ebon-Pinamt Association:* Well-drained deep slowly to moderately permeable, fine, loamy, and clayey-skeletal soils formed in add mixed alluvium on old sands with slopes ranging up to 5 percent.

C) *Gachado-Rock-Outcrop-Quilotosa Association:* Shallow, gravelly, and loamy soils. Volcanic rock is present 4 to 20 inches below the surface. Slopes range from 7 to 65 percent and rainfall is 7 to 10 inches.

D) *Momoli-Carrizo-Denure Association:* Excessively drained and nearly level to gently sloping soils on slopes up to 10 percent.

E) *Carrizo Association:* Deep and excessively drained soil on floodplains and alluvial fans. Slopes range from 0 to 3 percent and permeability is very rapid.

F) *Gilman-Estrella-Avondale Association:* Well-drained soils consisting of deep, moderately permeable, coarse to fine, loamy material formed in mixed recent alluvium on floodplains, low terraces, and alluvial fans.

G) *Mohall-Carrizo-Denure Association:* Deep and well-drained soils characterized by moderate to moderately slow permeable, and fine to coarse-loamy material formed in old mixed alluvium on fans, valley plains, and terraces.

H) *Antho-Valencia Association:* Well-drained soils on nearly level sandy loams on valley plains and low stream terraces.

I) *Rillito-Gunsight-Perryville Association:* Well-drained soils on nearly level to moderately steep gravelly loams and loams on old alluvial fans and valley plains.

J) *Laveen-Coolidge Association:* Well-drained soil on nearly level sandy and clay loams on old alluvial fans and valley plains.

K) *Ebon-Pinamt-Tremant-Association:* Nearly level to gently sloping gravelly loams, very cobbly loams, and gravelly clay loams on old alluvial fans at the base of mountains.

L) *Casa Grande-Harqua Association:* Well-drained soils on nearly level to sloping, saline-alkali, sandy, and gravelly clay loams on valley plains.

M) *Cherioni-Rock Outcrop Association:* Well-drained soils on gently sloping to very steep, very gravelly loams and rock outcrop mountains, buttes, and low hills.

The four primary soil properties which effect development suitability are permeability, available water capacity, shrink-swell potential, and corrosivity.

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 limitation 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.

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 geologic character of the White Tank and Grand Avenue study area is quite diverse. Areas north of Grand Avenue consist of sedimentary and igneous rock. Sedimentary rocks (composed of silt, gravel, and conglomerate) are found in a majority of the area extending south from the Hieroglyphic Mountains. Igneous rocks (composed of schist, basalt, andesite, and rhyolite) are found as rock outcrops forming mountains in the northern area.

The central and southern portions of the area are situated on a broad alluvium filled valley. This alluvium consists of heterogeneous clay deposits, sand, silt, gravel, and boulders which derive from bedrock. The maximum depth of these alluvial deposits varies considerably, but in deeper parts of the basin are estimated to be 10,000 to 15,000 feet thick.

The White Tank and Estrella Mountains are primarily composed of consolidated igneous and metamorphic rocks. These include gneiss, granite, schist, rhyolite, basalt, and andesite, which are typical "hard rocks" and are similar to the "basement" rocks beneath the sedimentary fill of the area's alluvial valley.

Luke Salt Bed
One of the more unique geologic features is the Luke Salt Bed. For several decades, this major salt body has been mined commercially for use in water softening, cattle feeding, and other general products. The salt bed, estimated to contain between 15 and 30 cubic miles of halite, lies beneath an area just south and east of Luke Air Force Base. While its

origin is unknown, it may be the result of a long-standing saline lake that formed millions of years ago. Geophysical studies indicate that this deposit may extend to a depth of at least 6,900 feet, and perhaps to as much as 9,000 feet.

Although the Luke Salt Body does not generally yield water, it does have an effect on groundwater salinity, alluvial fill permeability, and on the ability of the underlying aquifer to convey water.

Land Subsidence and Earth Fissures

Land subsidence has been identified in several south-central Arizona locations. This phenomenon occurs when water is removed from underground reservoirs and the weight of the overlying material compresses, causing the land to settle. Once compressed, alluvial deposits take up less space than before and the ground surface sinks. The amount of subsidence varies according to study and location. For instance, Poland (1981) identified a 140 square mile area around Luke Air Force Base that subsided more than 3 feet by 1977. However, a separate report from the U.S. Geological Survey (Leake, 1999) identifies areas west of Phoenix that have sunk as much as 18 feet. The effects of subsidence can be significant, including damage to infrastructure (e.g. highways, railroads, utilities, irrigation systems, sewage disposal facilities, recreational facilities, and private residences), increased flooding, increased potential for groundwater pollution, and accelerated soil erosion. For example, the Dysart Drain—a 4½ mile drainage structure near Luke Air Force Base—lost a significant amount of its carrying capacity due to uneven subsidence. Once able to handle 1100 cubic feet per second of runoff, capacity was reduced to only 300 cubic feet per second. However, the Dysart Drain was recently modified to restore the original capacity and to account for the project subsidence in this area.

Land subsidence also creates another potential problem: earth fissures. Earth fissures are cracks in the ground surface that occur because of uneven or differentiated land subsidence. Earth fissures, found in several areas around Luke Air Force Base, usually occur along the periphery of subsidence areas and carry large volumes of surface water runoff. Depending on circumstances, fissures can form gullies as much as 50 feet wide and 10 to 15 feet deep. Once fissures begin, they tend to increase in number and length, spreading at uneven speeds and directions for several miles. **Figure 10—Land Subsidence and Earth Fissures** identifies both significant land subsidence and known Earth fissure activity areas.

Land subsidence and the accompanying earth fissures will probably occur in this area as long as groundwater overdraft continues. As such, there is increased potential for property damage since earth fissures can occur in previously unnoticed areas, although exactly when or where new earth fissures will occur is unknown and hard to predict.

Air and Noise Quality

Air quality is affected by various activities, and sources of air pollutants may be mobile or stationary. One significant source of mobile air pollution is motor vehicle use. Such vehicle-generated emissions include carbon monoxide, nitrogen oxides, and hydrocarbons. The pollutant of greatest concern is carbon monoxide because, under certain atmospheric and topograhic conditions, concentrations accumulate which are hazardous to health under prolonged exposure. Stationary sources of air pollution come from roads, agricultural

fields, vacant lots, and construction sites where wind-borne particulates such as dust and microscopic debris originate. One pollutant that originates from both mobile and stationary sources is ozone. While carbon monoxide and wind-borne particulates usually come from a known source, ozone originates from atmospheric chemical reactions between nitrogen oxides, hydrocarbons, and ultraviolet light. Particulate matter is also a concern, and is generally caused by agricultural production and automobiles on unpaved roads. As urban growth continues motor vehicle emissions may further diminish air quality.

Another potential problem is noise pollution. Without question, the effects of noise from airport and highways can be significant. Depending on decibel levels and the length of exposure, significant noise can affect health, sleep, and learning patterns. Prolonged exposure to loud noise can cause general community annoyance and reductions in property values. In the White Tank and Grand Avenue planning area, the three primary sources of noise are airports, highways, and vehicle test facilities.

State law is clear in its requirement that Maricopa County adopt land use plans and zoning ordinances that preserve the public health, safety, and general welfare, and are compatible with military airport operations. such statutes include:

- ARS §11-806b — requires the commission to prepare and recommend to the board a comprehensive plan that promotes the public health, safety, convenience, and general welfare.
- ARS §11-829a — requires all zoning and rezonings to be consistent with the adopted county plan.
- ARS §28-8481a — requires land use plans and zoning regulations to be compatible with military airport operations.
- ARS §28-8481c — requires zoning variances to be compatible with military airport operations.

In addition to state laws, the Maricopa County Comprehensive Plan also addresses the need for compatible land use planning around Luke Air Force Base and other noise generating operations. Specifically, Policy L4.3 encourages development patterns and standards compatible with the continuing operation of military and civilian airports, and other noise generating employment centers.

Westside Joint Land Use Study

To help protect the military mission of Luke Air Force Base and mitigate noise impacts on surrounding areas, the Maricopa Association of Governments (MAG) completed the Westside Joint Land Use Study (JLUS) in 1988. In this study, MAG identified specific areas (i.e. contours) around the base where significant aircraft noise would impact land use (see **Figure 11—Noise Contours)**. These "Overlay Zones" are based on recommendations for average day-night sound decibel levels (Ldn). In addition to existing zoning districts, Maricopa County recognizes four Airbase Overlay Zones that establish unique guidelines. These zones include:

- Zone 1: Area within the 80 and above Ldn noise contour, but not within any other Airport District
- Zone 2: Area within the 75 to 80 Ldn noise contour, but not within any other Airport District

- Zone 3: Area within the 70 to 75 Ldn noise contour, but not within any other Airport District
- Zone 4: Area within the 65 to 70 Ldn noise contour, but not within any other District

State law also notes that political subdivisions located in a county of 1.2 million or more people use the 1988 JLUS noise contours in relation to sound attenuation standards. For consistency, Maricopa County uses the JLUS noise contours for both sound attenuation and planning and zoning purposes.

Air Installation Compatible Use Zones

The United States Department of Defense developed the air installation compatible use zone (AICUZ) program to help protect operational capabilities at its installations by promoting compatible land use and development patterns. The information contained in this report is intended to assist local communities and serve as a tool for future planning and zoning activities. The AICUZ report, updated approximately every 10 years, is also designed to help protect the health, safety, and welfare of people within these communities.

Maricopa County, planning area municipalities, Luke Air Force Base, and private developers should acknowledge that military aircraft noise and flight patterns are not confined to areas within either the JLUS or AICUZ contours (see **Figure 12—Luke Flight Patterns**). As such, these groups should work together to mitigate regional noise impacts.

Territory in the Vicinity of a Military Airport

In addition to noise contours, state law recognizes a larger area around Luke Air Force Base. Known as the *territory in the vicinity of a military airport*, this district extends ten miles to the north, south, and west, and four miles to the east parallel from the center of the main runway at Luke. Within this area, ARS §28-8481A requires that Maricopa County adopt and enforce planning and zoning regulations to assure development compatible with the high noise and accident potential from military aircraft.

While noise around Luke Air Force Base is an important consideration, there are other noise generating operations that should be recognized. Two of these are the Daimler-Chrysler and Volvo Proving Grounds. While both are located in areas that currently have little population, rapid residential growth does have the potential to conflict with their operations. Therefore, compatible land uses around these facilities should be encouraged.

Hydrology

In this arid region, water is a vital resource. Physically, socially, economically, and politically, water impacts peoples' lives to the point where they are conscious of its importance. As such, water use, conservation, drainage, flooding, and supply must be considered in any growth plan.

Surface Water

The planning area includes the Gila River on the south and the Agua Fria River on the east. Historic flows of these rivers were primarily the result of upper watershed runoff and snowmelt. These natural flows are now controlled by dams and diversion structures built upstream from the area to provide irrigation water and flood protection. Today, both riverbeds are normally dry except during periods of local high seasonal runoff, or when the lack of upstream storage capacity requires water release.

The Agua Fria River, which forms a portion of the eastern planning area boundary, has a watershed of approximately 2,340 miles which includes the New River as a tributary. The New Waddell Dam, completed in 1993, controls 1,459 square miles of the upper Agua Fria River and will contain most of the runoff generated upstream of the dam, thus reducing the volume and peak flood flows in the river. South of the Agua Fria/New River confluence, flooding is due primarily to New River. Additionally, there are localized areas of surface water in the river due to irrigation practices and discharges from wastewater treatment plants.

The Gila River normally has no flows, except during periods of high seasonal runoff, or when the lack of upstream storage capacity requires water releases. The upstream contributing watershed area is approximately 39,700 square miles, which includes the Salt and Verde Rivers as tributaries. The largest storage facility in this system is the Roosevelt Dam, which controls 5,800 square miles of the Salt River. However, the Verde and Gila River will still cause significant flood flows.[1] In addition, there are localized areas of surface water in the river due to localized high ground water table, irrigation practices, and discharges from wastewater treatment plants in the planning area.

The planning area also receives localized stormwater runoff from the area below New Waddell Dam from the north, and from the White Tank Mountains to the west. However, various stormwater retention structures help reduce the impact of flooding. One of the most significant flood control projects is the McMicken Dam which drains east into the McMicken Dam outlet channel, then south to the McMicken Dam outlet wash before flowing into the Agua Fria River. Other significant flood and drainage control structures include the Deer Valley Road Channel, Bell Road Channel, Dysart Drain and retention basin, Litchfield Park detention facility, Beardsley Canal Wash, Tuthill Dike Wash, Jackrabbit Trail Wash, ADOT retention basins, Bullard Wash, and the White Tanks Flood Retention Structures #3 and #4. Other significant water canals include the Central Arizona Project (CAP) which runs west to east through the center of the planning area, and the Beardsley Canal, which runs east to west alongside McMicken Dam and parallels the McMicken Dam outlet channel.

The Flood Control District of Maricopa County has completed two Area Drainage Master Studies (Wittmann Area Drainage Master Study and White Tanks/Agua Fria Area Drainage Master Study) for the planning area. Both studies delineate existing floodplains, help develop corrective measures to potential flooding problems, and proposed stormwater management plans. In addition, the Flood Control District is updating the White Tanks/ Agua Fria Area Drainage Master Study, which should be complete in 2001.

Groundwater

A primary source of water in the planning area is groundwater. Underground reserves are supplemented by natural river flows, impounded diversions, treated sewage effluent, and groundwater imports via canals. The withdrawal and use of future groundwater is governed by the 1980 Arizona Groundwater Management Act. In addition, the entire study area is located within the Phoenix Active Management Area (AMA), which means the Arizona Department of Water Resources establishes additional restrictions.

[1] Gila River Basin, Arizona – Section 7 Study for Modified Roosevelt Dam, Arizona; Hydrologic Evaluation of Water Control Plans – Salt River Project to Gila River at Gillespie Dam, March, 1996.

The recently enacted Arizona Water Bank program could affect future groundwater use. Designed to store unused Colorado River water underground, the Water Bank may provide a reserve water supply to cities if Arizona's future Colorado River water allocation is ever reduced. The program is showing progress, as the Arizona Department of Water Resources reports that in 1997 the Water Bank recharged approximately 330,000 acre feet of CAP water.

An important concern is the rapid depletion of groundwater reserves. While groundwater reduction is occurring in several parts of the planning region, significant depletion is taking place in areas surrounding Luke Air Force Base. Well testing shows that water levels in this area have declined anywhere from 300 to over 550 feet (Schumann, Genualdi, 1986). The result is that the aquifer system is compacting, creating large areas of land subsidence and earth fissures.

Vegetation

The White Tank and Grand Avenue Planning Area is located in the Sonoran Desert, where Palo Verde-Saguaro, Creosote, and Desert Saltbush are the native plant communities. The Palo Verde-Saguaro Community is found primarily in the northeastern and White Tank Mountain portions of the planning area, and is the most scenic of the Sonoran Desert Plant Communities. This vegetative community provides scenic quality that enhances the overall area and should be protected wherever possible. The Palo Verde-Saguaro community is composed of small trees such as Palo Verde, Acacia and Mesquite; shrubs such as Creosote and Bursage; and Cacti, including the Giant Saguaro, Fishhook, Hedgehog, opuntia (prickly pear) and several other species.

The Desert Saltbush Community is found mainly along the Agua Fria and Gila Rivers, but is also located between Luke AFB and Interstate 10. In this community, Desert Saltbush is the dominant plant. This gray, 2 to 5 foot tall shrub grows in thick stands along with seep weed and pickle weed. Saltbush species such as chasimo may also be present. Mesquite is a common subordinate species, but Saguaro Cactus is rare. Areas that support the Desert Saltbush community are uniform in both appearance and vegetation composition.

The Creosote Community distinguishes the majority of the area. Creosote Bush is the dominant plant and is often accompanied by white bursage or a coarse buchgrass called big galleta. The even stature and spacing of plants, along with their appearance, produces a uniform landscape over large areas. Larger shrubs, cacti, and trees are absent, except along washes where Ironwood, Mesquite, Palo Verde, and Catclaw may grow.

There may be particular native plant species which, by law (Arizona Revised Statutes, Title 3, Chapter 7, Article 1) 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:

Cacti:

Hedgehog Beehive
Prickly Pear
Night Pin Cushion
Needle "Mulee"
Blooming Cereus
Saguaro Cholla

Trees and Shrubs:
Flannel Bush
Agave (Century Plant)
Desert Holly
Desert Spoon
Yucca
Ocotillo

Wildlife
A diversity of wildlife exists in the White Tanks and Grand Avenue planning area, although many traditional habitats have been altered. Common desert species are present to some extent in all natural plant communities. Agricultural cropland and urban areas also provide habitats for certain adaptable species.

Large animals are not generally found in this area, although undeveloped mountain areas in the north and east encourage migration of larger animals from outside the region. Mule deer and javelina are commonly found in the Hieroglyphic Mountains, and intermittently in other parts of the planning area. Important predator, small game, and nongame species are also present, including coyotes, fox, cottontail rabbits, gambel quail, morning and white-winged doves, and various raptors and migratory songbirds.

Areas of agriculture or intense urban development usually have limited wildlife, although some species do flourish under these conditions. Moreover, cropland provides food and nesting areas for numerous species of songbirds, such as redwinged and brewers black-birds, cowbirds, sparrows, and meadowlarks, as well as a variety of game birds.

Very few threatened or endangered species depend wholly on planning area habitats. Of particular note, however, is the desert tortoise (Gopherus Agassizii) which is found throughout the planning area, but especially in rocky foothills. The desert tortoise is identified on the Wildlife of Special Concern in Arizona list. Therefore, special consider-ation should be given to its protection.

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. For the protection of the resource, 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.

Although no systematic reconnaissance field survey of the county has been conducted, preliminary studies indicate high potential for significant archaeological resources in portions of the planning area, including the White Tank Mountains and the Agua Fria and Gila River basins. 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. 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.

Policy Implications

This section summarizes important natural resource issues in the White Tank and Grand Avenue Planning Area Plan.

Physical Characteristics

Some planning area soils have characteristics that limit the safe use of septic and sewage treatment facilities. Slopes greater that 15 percent occur primarily in mountains and foothills, and can pose significant environmental, economic, and engineering constraints.

Noise levels from Luke Air Force Base, auxiliary bases, automotive proving grounds, and current and future highways could reach levels deemed incompatible with particular land uses. As such, existing and future noise levels will influence land use patterns over portions of the planning area.

Geologic formations and conditions also pose certain hazards to development. The Luke Salt Body may cause earth fissures and lead to increased groundwater salinity. Land subsidence and earth fissures may damage structures, affect groundwater supply, and even change local drainage patterns.

High concentrations of total suspended particulates will be an air quality concern due to farming, construction activity, and increased traffic on both paved and unpaved roads.

Hydrology

Adequate amounts of potable groundwater may be a problem for future development. However, the extent of problems will depend on a variety of factors, including the future of the Arizona Water Bank program and future farming activities.

Several flood control projects are located in the planning area. Major drainageways like the Agua Fria and Gila Rivers, may be preserved as parks or open space.

Vegetation and Wildlife

Undisturbed plant communities exist in various locations. Special habitats for rare or endangered species also exist and require additional concern and attention.

Archaeology

The potential exists for numerous cultural resources. Such areas warrant special attention due to their unique historic, cultural, and educational value.

Economic Development

Social and Economic Characteristics

The social and economic characteristics of the White Tank and Grand Avenue Planning Area are described in the following five sections:

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

Area Economy/Economic Base

Two types of markets provide income and employment within any economy. The local market, or the 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 purports that a region must produce and export goods and/or services to an outside market in order to increase local income.

The Federal Reserve Bank of San Francisco reports that the Phoenix area is the 15th largest labor market in the nation with a labor force of 1.25 million workers.[1] The area's economy also benefits from business operating costs that on average are nearly 20% less than other U.S. metropolitan areas. In addition, the Phoenix metropolitan area is ranked 83rd among major metropolitan areas for state and local tax burdens, and has one of the lowest primary property tax rates in the nation. However, the area does face relatively high business property taxes.

The planning area economy is closely linked to the larger Phoenix metropolitan area. Major local employers provide a variety of jobs although many residents work outside the West Valley. Nevertheless, the White Tank and Grand Avenue area enjoys a healthy economic base. Among the area's industries are those in high-tech/aerospace, distribution/transportation, and manufacturing. **Table 13** shows some of the area's primary employment activities.

Overall, the Phoenix and West Valley business climate is considered quite good. A 1998 *Greater Phoenix Economic Council (GPEC)* survey of business media showed that the Phoenix area economy ranked second out of 25 communities in overall business climate.[2] This places Phoenix ahead of other southwestern cities like Los Angeles and Las Vegas, and comparable with other fast growing regions like Austin, Dallas, Denver, Houston, Portland, and Salt Lake City.

While the GPEC survey found that the area's business climate is considered good, the survey also identified several concerns that could negatively affect economic growth. Among survey respondents, 55% identified urban sprawl as one of the greatest obstacles to regional economic growth, while 42% identified traffic congestion. In addition, because

[1] Federal Reserve Bank of San Francisco, http://www.frsb.org

[2] Greater Phoenix Economic Council. *Survey of Business Media, 1998*

the positive perception of the region's business climate is not very secure, policymakers must be aware that these obstacles could be perceived as negatively affecting the area's quality of life, and thus negatively affecting its business climate.

Table 14: White Tanks / Agua Fria Planning Area: Primary Employment Activities

EMPLOYMENT ACTIVITY

	Health Care	Farm Equipment Production	Military	Agriculture	Construction/Manufacturing	Retail/Commercial Services	Technology/Telecommunications	Warehouse/Distribution	Chemicals	Aerospace	Resort
COMMUNITY											
Avondale	x	x	x								
El Mirage			x	x	x	x					
Glendale			x		x	x	x	x	x		
Goodyear			x		x			x		x	x
Litchfield Park			x			x					x
Peoria			x			x	x				
Sun City	x					x					
Sun City West	x					x					
Surprise				x	x	x					
Buckeye				x		x					

Agriculture
While only a small percentage of total employment is in agriculture, this does not reflect the importance of farming and related activities. Historically, farming has been a significant part of both the economy and culture. Even today, the central and southern portions of the planning area retain large tracts of agricultural land for crops like cotton, citrus, flowers, and vegetables. However, significant portions of agricultural land have been converted to other uses, primarily residential developments. Because of this and other associated trends, the potential for a West Valley agriculture preserve now exists due to the recent passage of agriculture preserve legislation by the state legislature.

Luke Air Force Base
One of the area's largest employers is Luke Air Force Base. As the world's largest fighter-pilot training base, Luke has considerable economic impact on the West Valley, the Phoenix metropolitan area, and the State of Arizona. A recent Arizona State University West study concluded that Luke Air Force Base annually generates approximately $2 billion in total economic impact and as many as 24,923 direct, indirect, and induced jobs. However, urban encroachment may threaten Luke's future mission which could prove economically detrimental to the region and state. A recent Arizona Department of Commerce report notes that, based on similar experiences at other deactivated military bases, it could be 15 to 20 years before enough economic growth occurred to replace the economic loss of Luke.

Economic Development Corridors
The White Tank and Grand Avenue planning area is also attractive to business and industry because of its proximity to major markets. Interstate 10, Grand Avenue (Highway 89-93), and the Burlington Northern Santa Fe Rail line provide access to markets in the Phoenix metropolitan area, California, and the southwestern United States. In particular, the Interstate 10 corridor is becoming attractive to businesses and industries looking to utilize its proximity to both markets and travelers.

Housing
Over the last several years, growth in the Phoenix metropolitan and planning area housing market has been strong. Home prices are still considered relatively affordable, although housing costs are increasing rapidly. Although home prices continue to increase, the West Valley remains more affordable than other valley locations.

While reasonably priced in relation to other major metropolitan areas, housing affordability for low-income residents is becoming a problem. This is due not only to a significant increase in home prices, but also because the availability of affordable rental units has decreased. In addition, financing credit for construction and rehabilitation of quality, affordable rental and owner-occupied housing is lacking. This is an important consideration because approximately 12% of Maricopa County residents live below the federal poverty line.

Residential, Commercial, and Industrial Demand:
Using countywide averages and basing land use demand on projected population, the following calculations have been made for land absorption in *both* the incorporated and unincorporated planning area.

Residential Demand

Based on resident housing unit projections, it is estimated that there will be 174,361 housing units by 2020. It is also estimated that there were approximately 64,236 housing units in 1995. Based on these figures, 110,125 additional units will be required by 2020. Predicting how much land is necessary to accommodate these additional units is difficult due to uncertainties in future land use and density patterns. However, assuming a density rate of 4 dwelling units per acre, approximately 27,500 additional acres will be needed to accommodate residential demand over the next 20 years. Predicting residential distribution patterns among incorporated and unincorporated areas is also difficult to predict due to future annexations. However, given the current trend of residential development occurring mostly within municipalities, it is assumed that incorporated areas will receive most of the residential housing units.

Commercial/Industrial Demand

Table 15: Recommended Commercial / Industrial Land Use Ratios

Land Use	Acres of Land Per 1000 people
Commercial:	10.5
Retail:	5.5
General:	5.0
Industrial:	8.0

Source: Maricopa County Subdivision Regulations–Administrative Guidelines, 1990

Estimated commercial land use demand is based on projected resident population increase. As noted earlier, Maricopa Association of Government projections show an estimated 380,000 planning area residents by the year 2020. Based on this projection and using the ratios listed in **Table 14**, it is estimated that a minimum of approximately 4,000 acres of retail and general commercial land will be needed to support area population.

Demand for industrial land is calculated using the same method as commercial land. Based on a year 2020 resident population projection of 380,000, a minimum of approximately 3,040 acres of industrial land will be required.

As with residential demand, estimating the quantity and location (e.g. incorporated vs. unincorporated areas) of commercial and industrial land is difficult due to the uncertainty of future annexations, density patterns, and economic conditions. However, current patterns dictate that industrial and commercial activity is attracted to areas in and near municipal population cores. Therefore, a majority of these uses will likely be established in incorporated areas.

The White Tank and Grand Avenue Area Plan uses a variety of criteria to identify locations for future planning area employment centers. Such criteria include:

- Access to transportation networks and markets
- Compatibility with surrounding areas
- Sufficient areas of vacant land
- Matching sites to different types of employment needs
- Availability of utilities
- Access to labor force
- Location choices
- Public visibility
- Appropriate terrain

Economic Base Potential

Because of its significant size, the planning area's economic potential varies according to location. Therefore, a brief examination of these locations is warranted.

South

The southern portion of the planning area has considerable economic potential due to the proximity of Interstate 10. This area has experienced a marked increase in demand for both industrial and commercial/retail development along the freeway. Because of the access this freeway provides to southwestern United States markets, it will likely attract additional manufacturing and distribution activities.

Another important economic feature is the Phoenix-Goodyear Municipal Airport, where much of the southern planning area's economic base is focused. Several large employers, including McDonnell Douglas, Dimension Aviation, Airline Training Center Arizona, Lufthansa German Airline, and Lockheed Martin are located at or near this airport, making it an important part of the West Valley economy.

West-Central

The economic base of the west-central region is primarily focused around Luke Air Force Base. Luke is the largest fighter pilot training base in the world, and recently added additional command units. Currently, there are a limited number of major employers located near Luke, although the area does have potential to sustain an employment core similar to the Phoenix-Goodyear Municipal Airport. Aircraft noise limits the types of land uses that can successfully coexist with Luke. However, manufacturing, business, trade, and agriculture operations are compatible with base operations, which means the possibility exists for the base to "anchor" an important multi-use commerce center. The area also benefits from its close proximity to Loop 303 and Interstate 10.

The other prominent economic activity is agriculture, which has historically been a vital part of the West Valley economy. Therefore, maintaining its viability for those individuals and industries that want to continue agribusiness operations is a responsibility that must be done on a region-wide basis.

North-West
The economic base in the northwest planning region is centered along Grand Avenue. Grand Avenue was initially constructed in 1888 as a link from Phoenix to the then-farming centers of Glendale and Peoria. As urbanization has taken place, Grand Avenue's diagonal orientation creates certain problems for planning area communities. Nonetheless, Grand Avenue remains an important route for statewide travel and commerce. Grand Avenue connects with U.S. Highway 93 in Wickenburg and extends northward to Kingman and Interstate 40. Further, U.S. 93 connects with Interstate 15 in Las Vegas, which is why it is being considered as part of the CANAMEX Corridor for NAFTA. These strategic advantages mean that Grand Avenue will likely play a key role in the West Valley's future economic prosperity.

Areas north of State Route 74 are currently beyond urban influences and should remain that way for the next several years. However, increased growth pressure will likely occur after that time.

As previously discussed, economic activities are classified into two categories: basic and non-basic. Much of the area's employment is in basic sector employment, including military employment and manufacturing and agricultural production. However, as growth continues the need to create a balanced economy will result in additional job opportunities.

Western Maricopa Enterprise Zone
Another important economic feature is the Western Maricopa Enterprise Zone (WMEZ). The WMEZ is a state-authorized program/alliance of 14 political jurisdictions, established to generate employment through incentives and tax credits. The WMEZ covers a 5,600 square mile area of western Maricopa County, including the entire White Tank and Grand Avenue planning area. The WMEZ can play an important role in any comprehensive economic development strategy.

Policy Implications

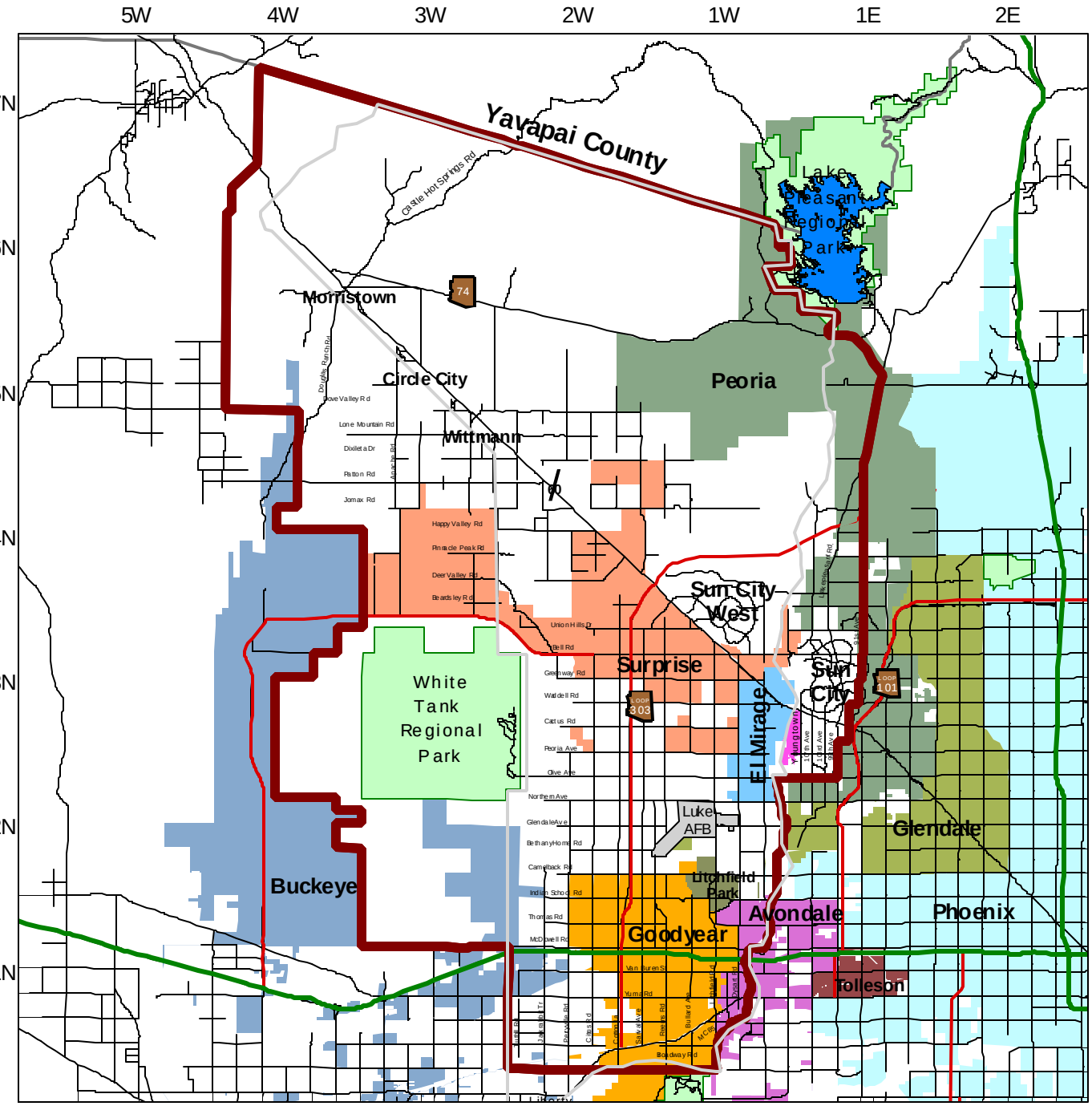
During data analysis, Maricopa County identified several important economic and social considerations that are addressed in the Area Plan:

Retirement Population
The area's demographic composition differs from other parts of the County. Specifically, a majority of the residents are over 55 with a median age of 71. As such, consideration must be given to providing this population with access to needed healthcare, commercial, and recreation services.

Employment Corridors
As growth and development increase, appropriate locations for future employment corridors will need to be identified, and should provide diverse employment opportunities to create a better jobs/housing balance. Employment corridors should also take advantage of the area's strategic location and transportation system which provides competitive access to local and regional markets.

Residential Development
Continued residential development will also impact the region's environment and character. As such, policies and land use guidelines should be developed to encourage suitable locations for new residences. In addition, a variety of incentives, such as transfer of development rights, density and floor area ratio bonuses, flexible standard agreements, and development agreements can be used to both preserve sensitive areas and reward developers.

Coordinated & Comprehensive Economic Development Strategy
To successfully expand and diversify the area's economy, cooperative and coordinated strategies are necessary. Maricopa County should actively participate in and support such strategies and programs.

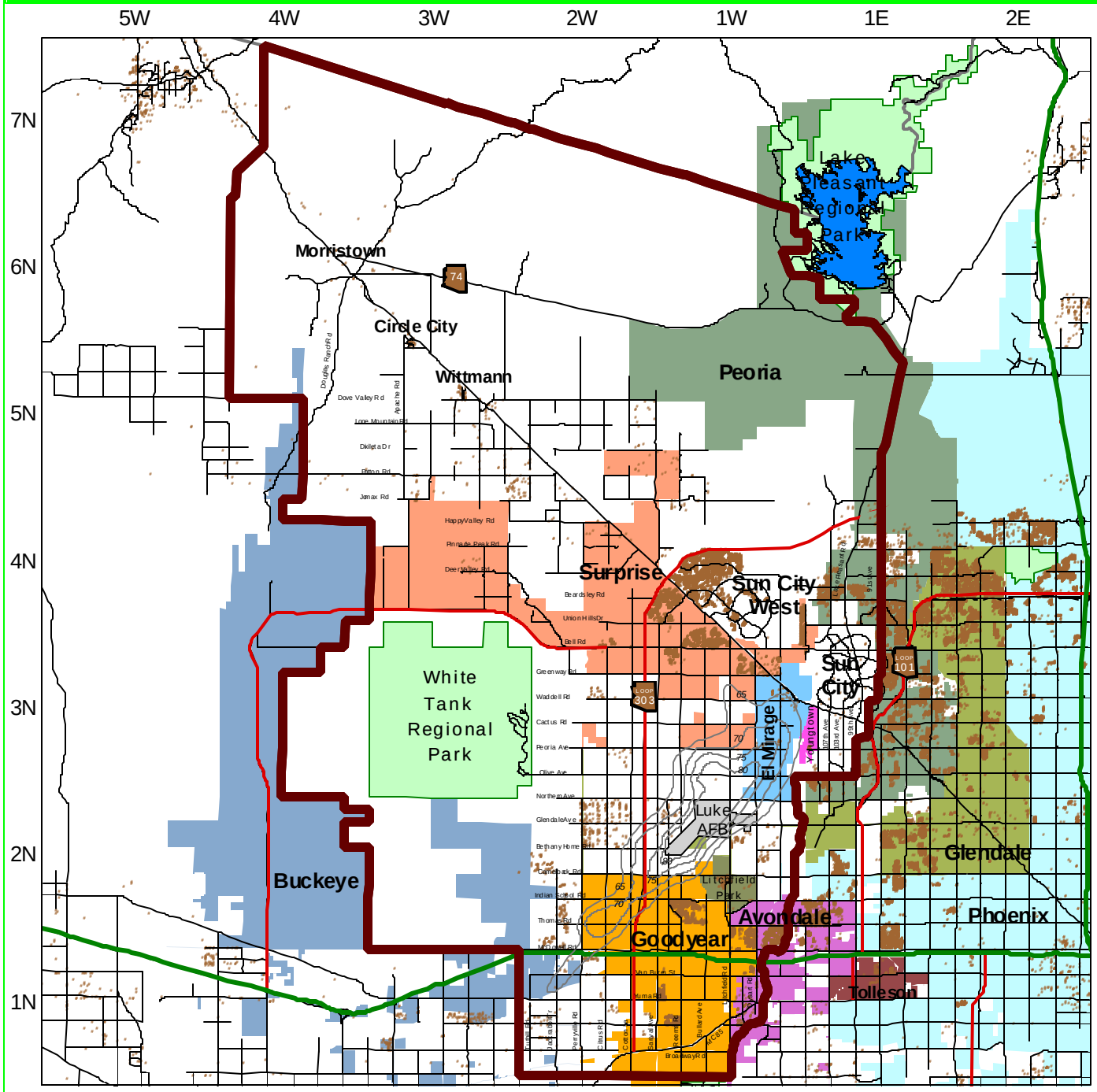


Original Plan Boundary
New Plan Boundary
County Park
Interstate
Future Freeway
Arterial Street

Original Plan Boundary

Figure 2

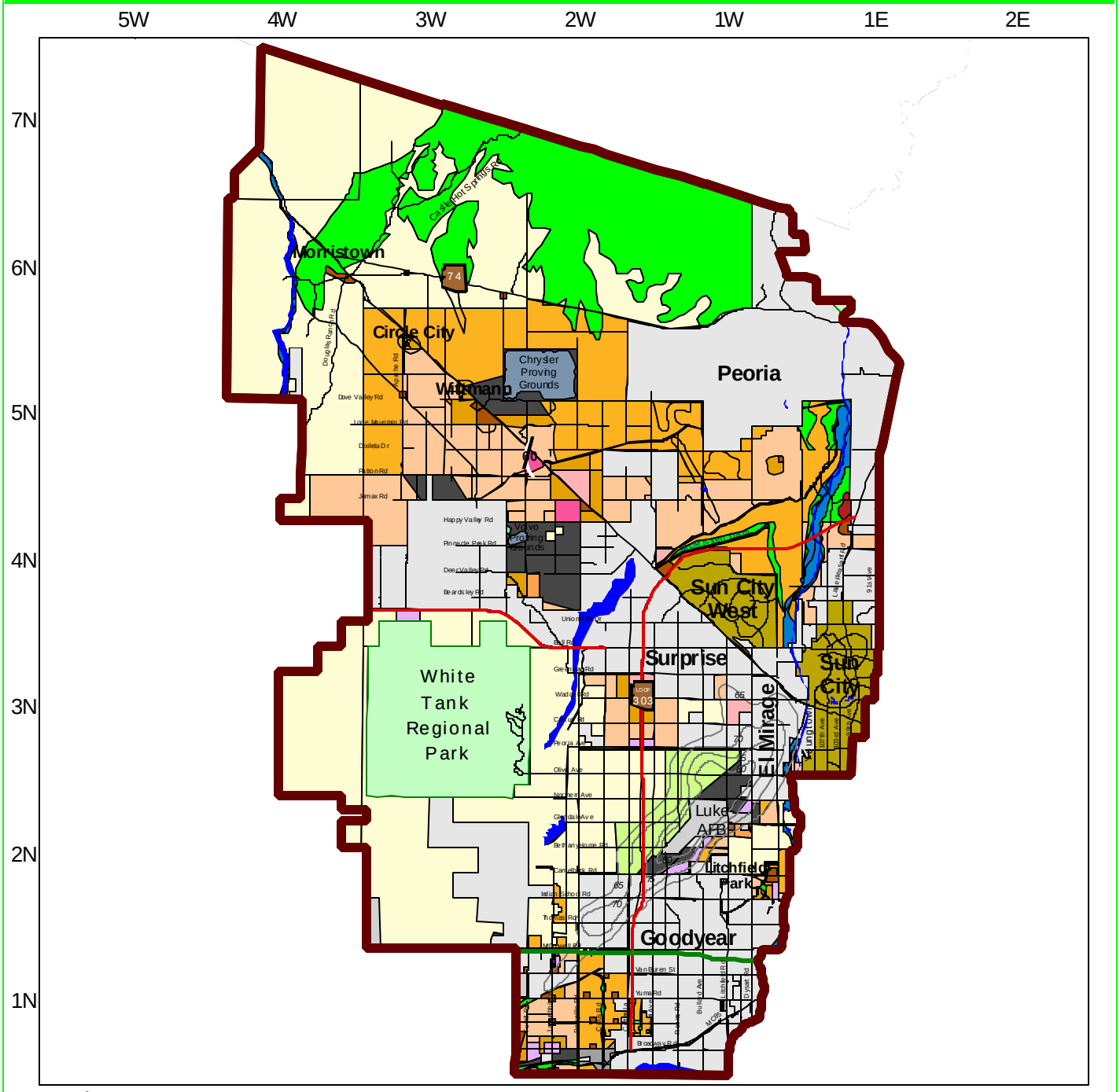
2 0 2 4 Miles



Residential Completions

1990 - 1998

Figure 3



Land Use

- Agriculture
- Airport
- Business Park
- Community Retail Center
- Dedicated or Non-developable Open Space
- Educational
- High Density Residential
- Hotel, Motel or Resort
- Industrial
- Institutional
- Large Assembly Area
- Large Lot Residential
- Medium Density Residential
- Mixed Use
- Neighborhood Retail Center
- Office
- Public Facility
- Recreational Open Space
- Regional Retail Center
- Rural
- Small Lot Residential
- Transportation
- Unknown
- Warehouse/Distribution Center
- Planning Area Boundary
- Luke AFB Noise Contours
- Water Channel
- Incorporated Area
- Interstate
- Future Freeway
- Arterial Street

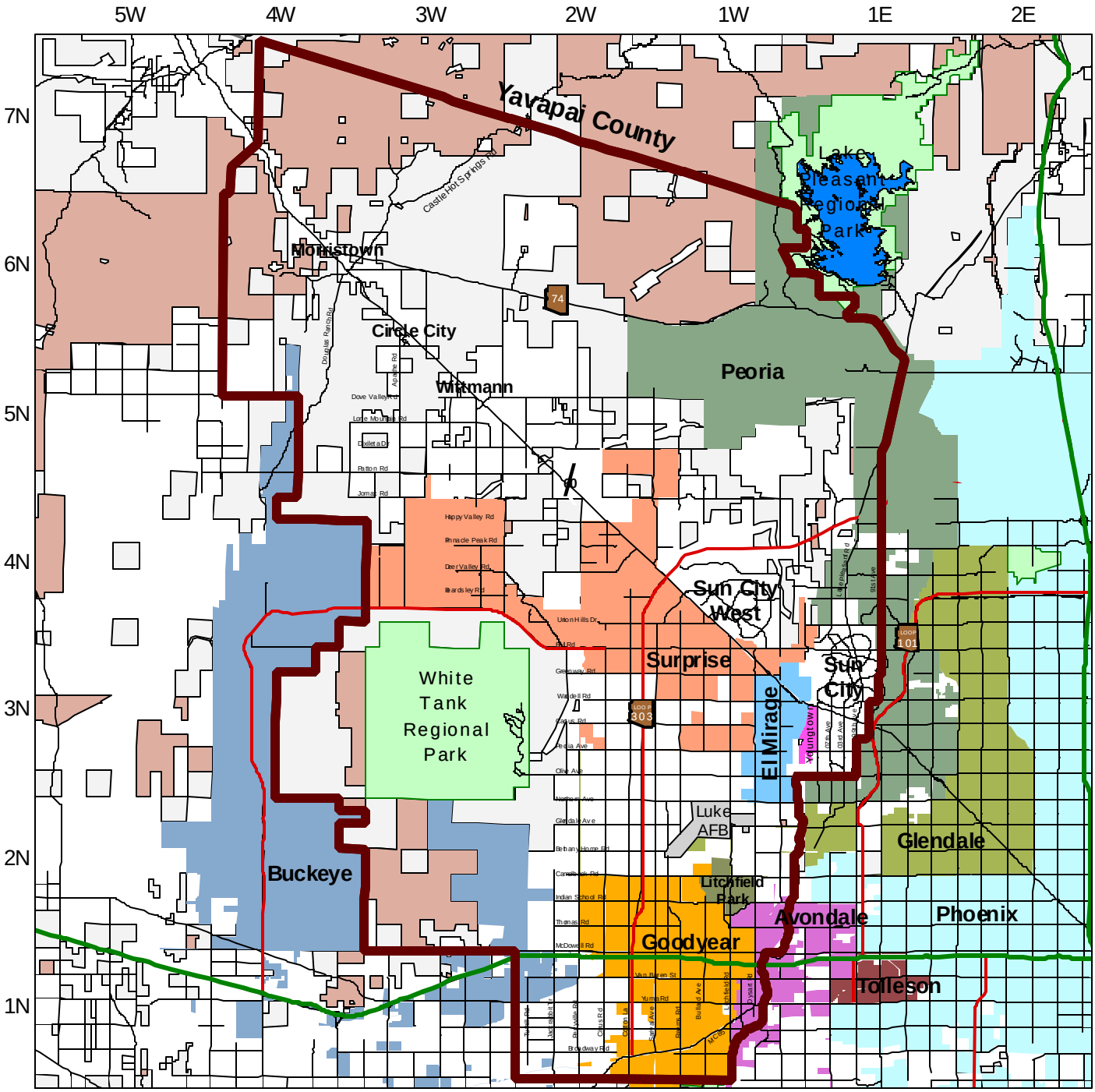
1 0 1 2 3 4 5 6 Miles

Planned Land Use

Figure 4

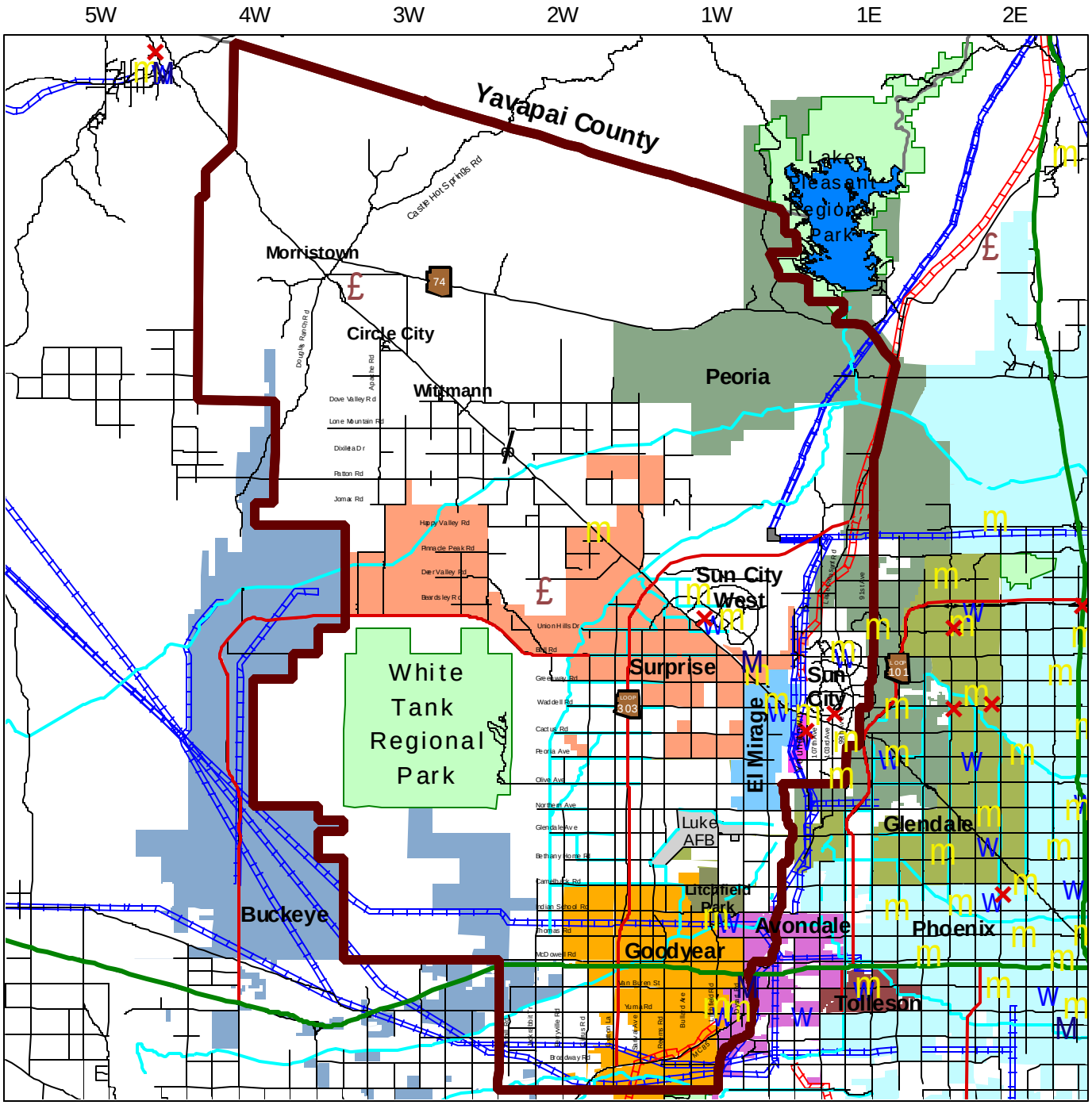
White Tank / Grand Avenue Area Plan

Source: Maricopa Association of Governments, Maricopa County, and municipal general plans



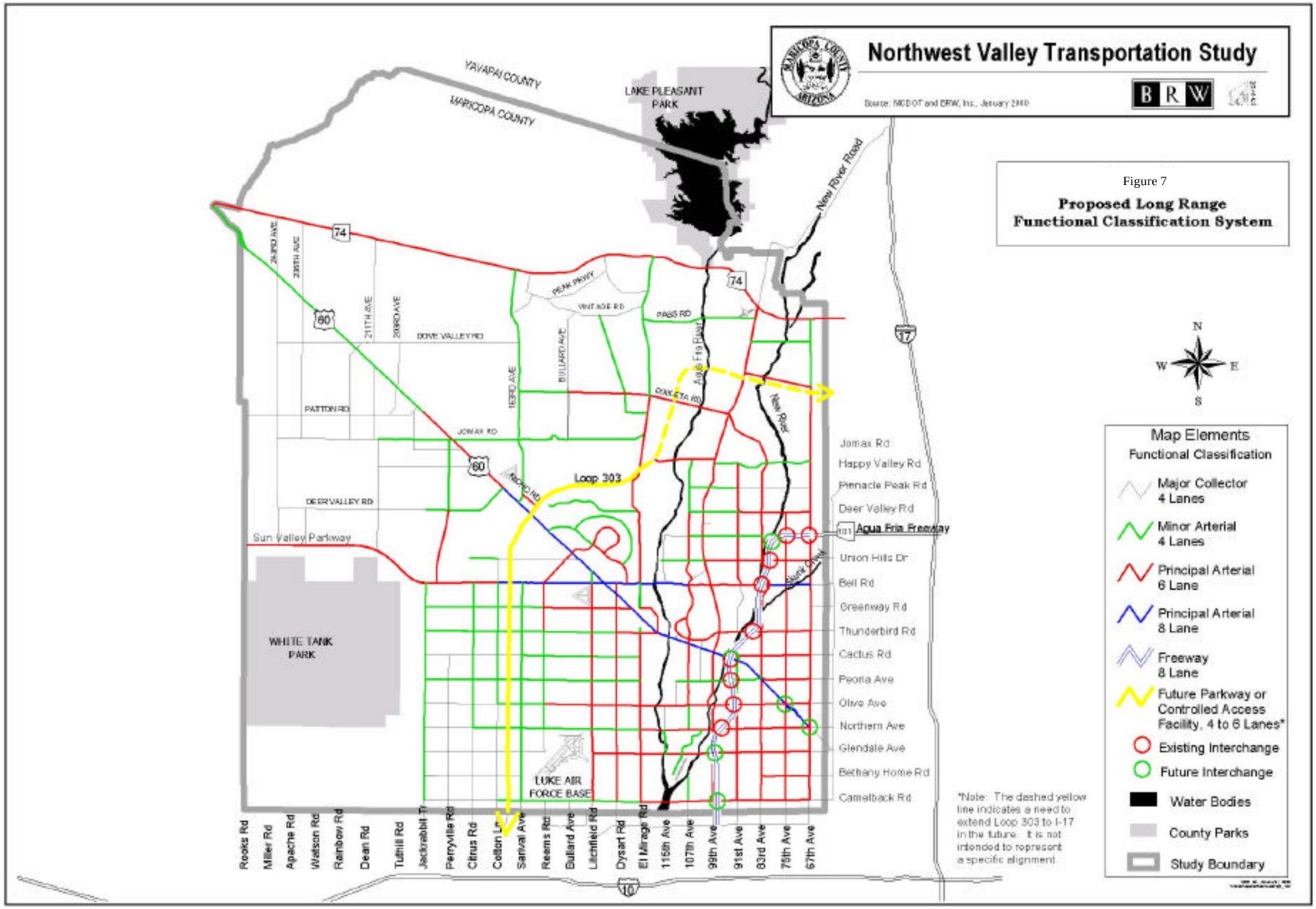
Land Ownership

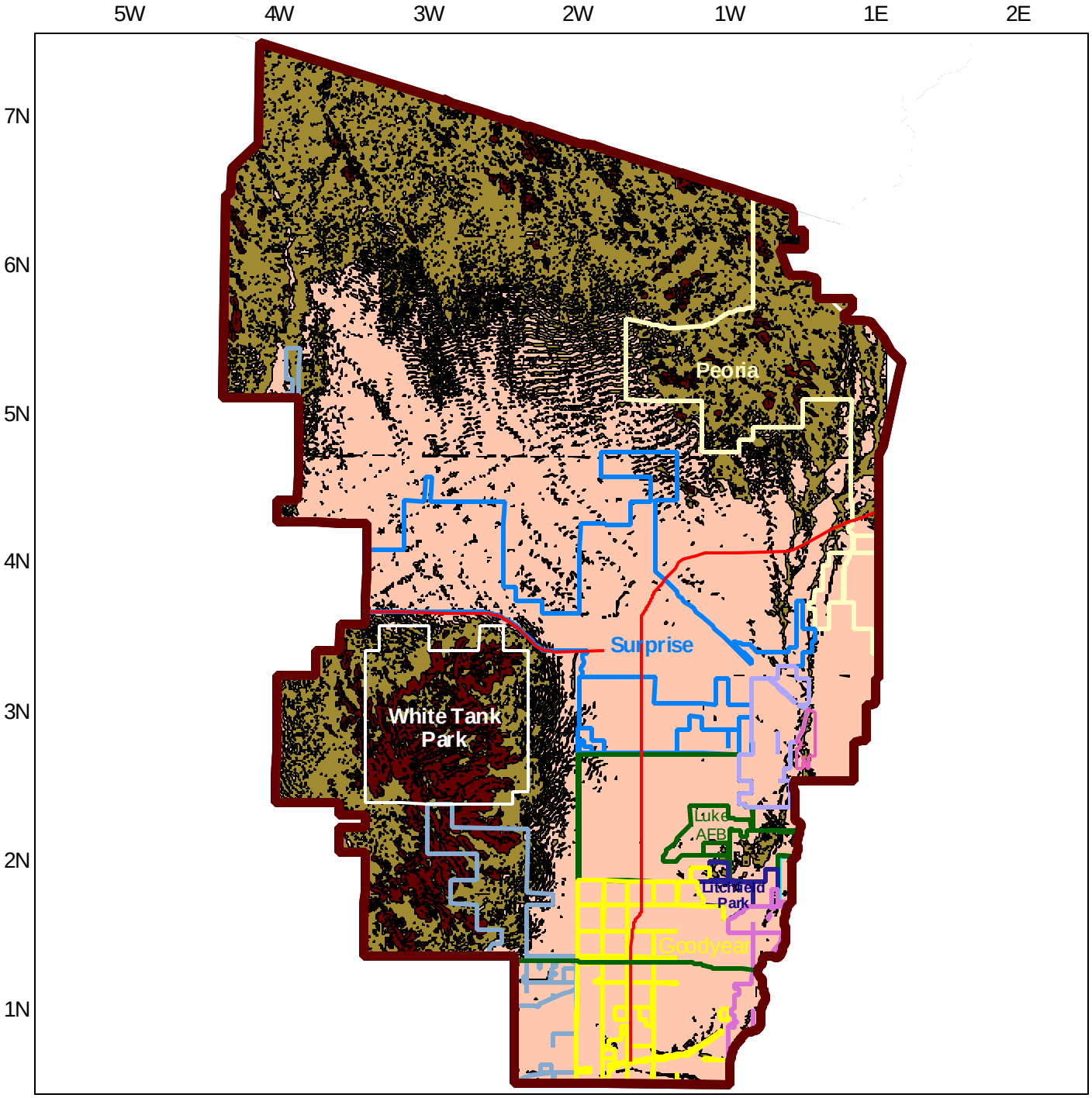
Figure 5



Existing Facilities & Utilities

Figure 6


Northwest Valley Transportation Study
Source: MCDOT and BRW, Inc., January 2000
BRW
Figure 7
Proposed Long Range
Functional Classification System
YAVAPAI COUNTY
MARICOPA COUNTY
LAKE PLEASANT PARK
New River Road
Loop 303
Sun Valley Parkway
WHITE TANK PARK
LUKE AIR FORCE BASE
DOVE VALLEY RD
PATTON RD
JOMAX RD
DEER VALLEY RD
PEAK PKWY
VINTAGE RD
PASS RD
BULLARD AVE
TEGRO AVE
211TH AVE
209TH AVE
236TH AVE
242ND AVE
Jomax Rd
Happy Valley Rd
Pinnacle Peak Rd
Deer Valley Rd
Agua Fria Freeway
Union Hills Dr
Bell Rd
Greenway Rd
Thunderbird Rd
Cactus Rd
Peoria Ave
Olive Ave
Northern Ave
Glendale Ave
Bethany Home Rd
Camelback Rd
Rooks Rd
Miller Rd
Apache Rd
Watson Rd
Rainbow Rd
Dean Rd
Tuthill Rd
Jackrabbit Tr
Perryville Rd
Citrus Rd
Cotton Ln
Sarival Ave
Reems Rd
Bullard Ave
Litchfield Rd
Dysart Rd
El Mirage Rd
115th Ave
107th Ave
99th Ave
91st Ave
83rd Ave
75th Ave
67th Ave
*Note: The dashed yellow line indicates a need to extend Loop 303 to I-17 in the future. It is not intended to represent a specific alignment.
Map Elements
Functional Classification
Major Collector 4 Lanes
Minor Arterial 4 Lanes
Principal Arterial 6 Lane
Principal Arterial 8 Lane
Freeway 8 Lane
Future Parkway or Controlled Access Facility, 4 to 6 Lanes*
Existing Interchange
Future Interchange
Water Bodies
County Parks
Study Boundary



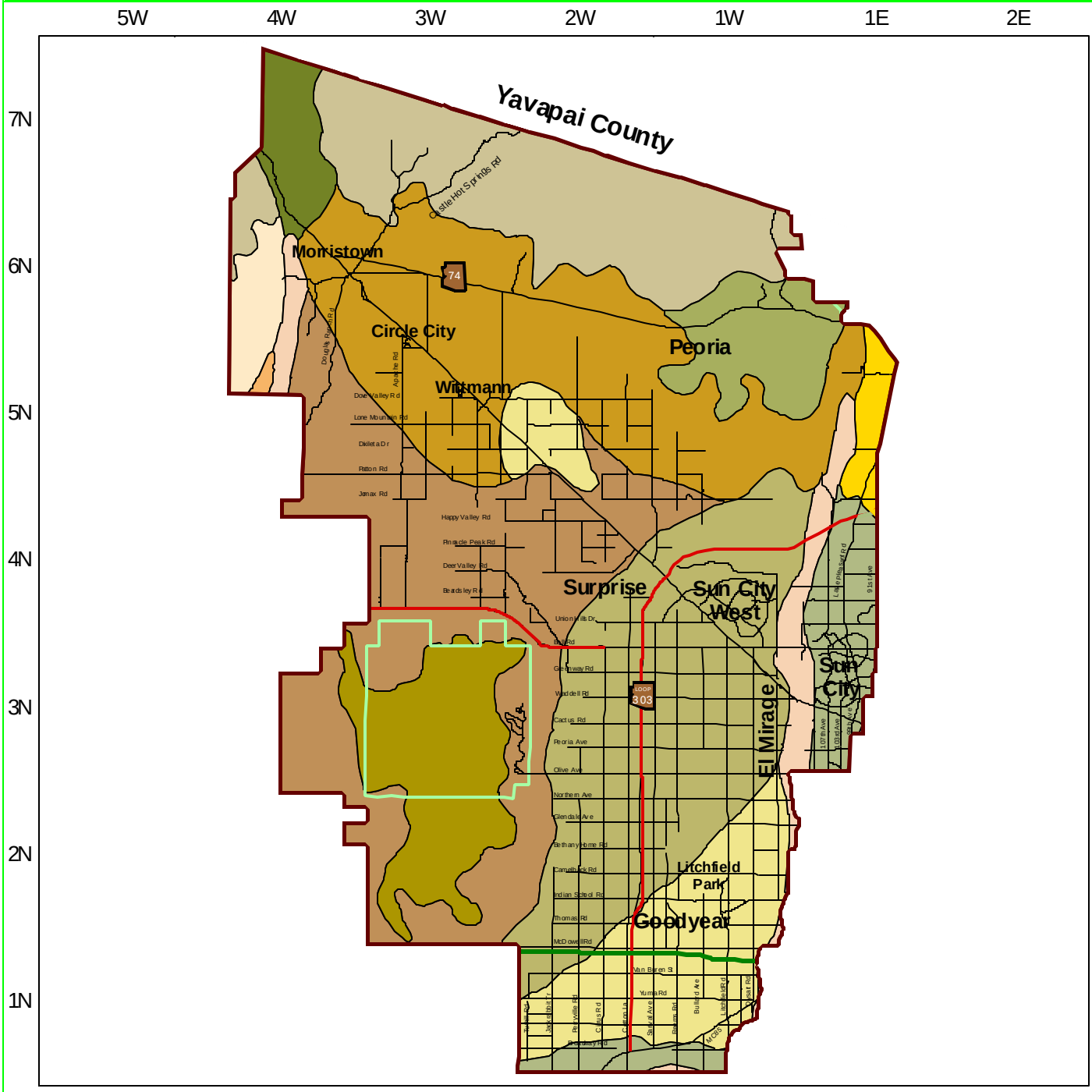
Slope
- 0% - 1%
- 1% - 15%
- 15% >

- Planning Area Boundary
- Interstate
- Future Freeway

1 0 1 2 3 4 5 6 Miles

Slope

Figure 8



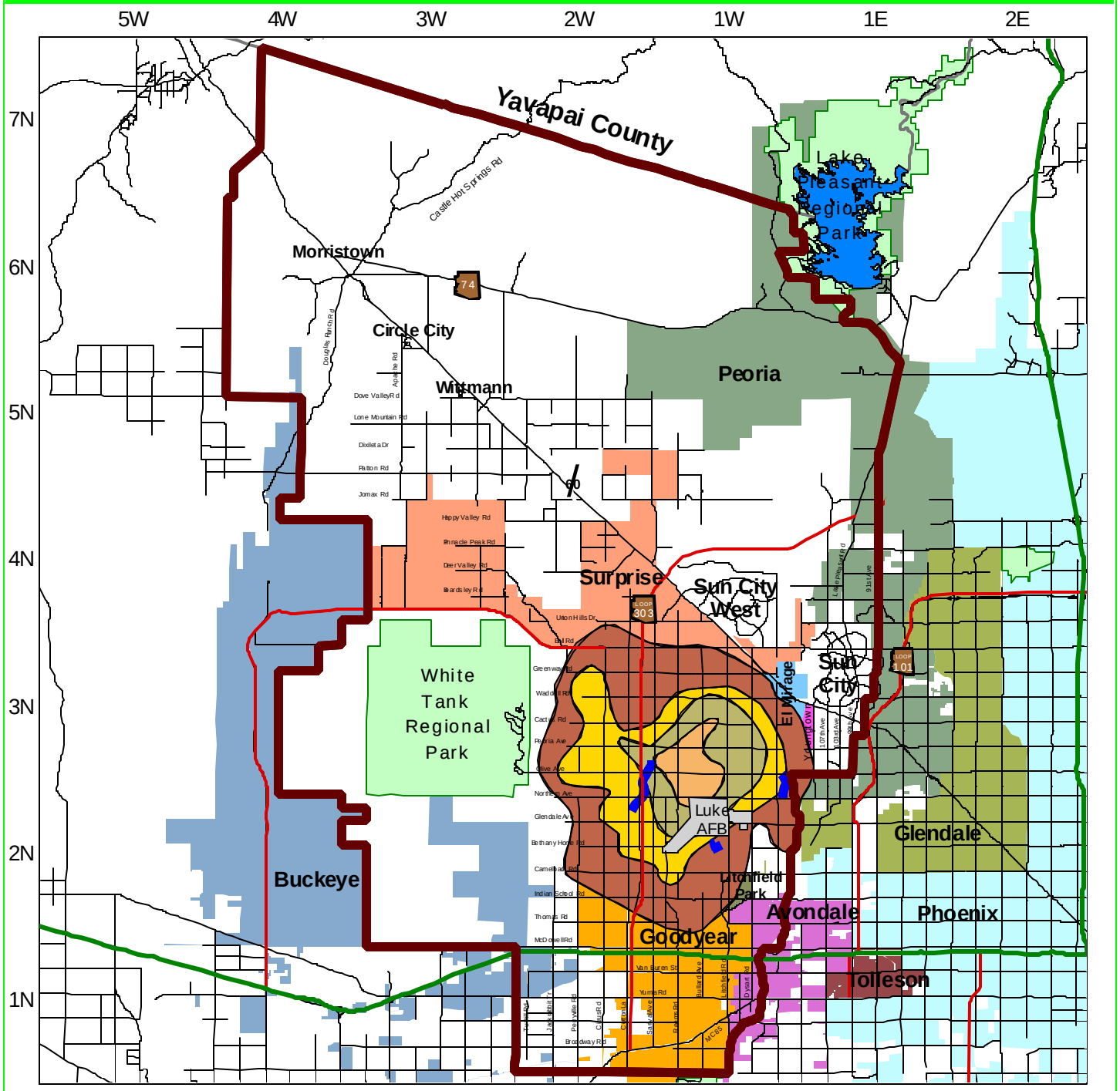
Soils
- Granitic Hills, Volcanic Hills
- Limy Upland (Deep)
- Limy Upland, Clay Loam Upland, Limy Slopes
- Limy Upland, Clayey Upland
- Limy Upland, Sandy Bottom, Limy Fan
- Loamy Upland, Clay Loam Upland, Limy Fan
- Loamy Upland, Limy Fan
- Sandy Bottom, Limy Fan

- Planning Area Boundary
- County Park
- Interstate
- Future Freeway
- Arterial Street

1 0 1 2 3 4 5 6 Miles

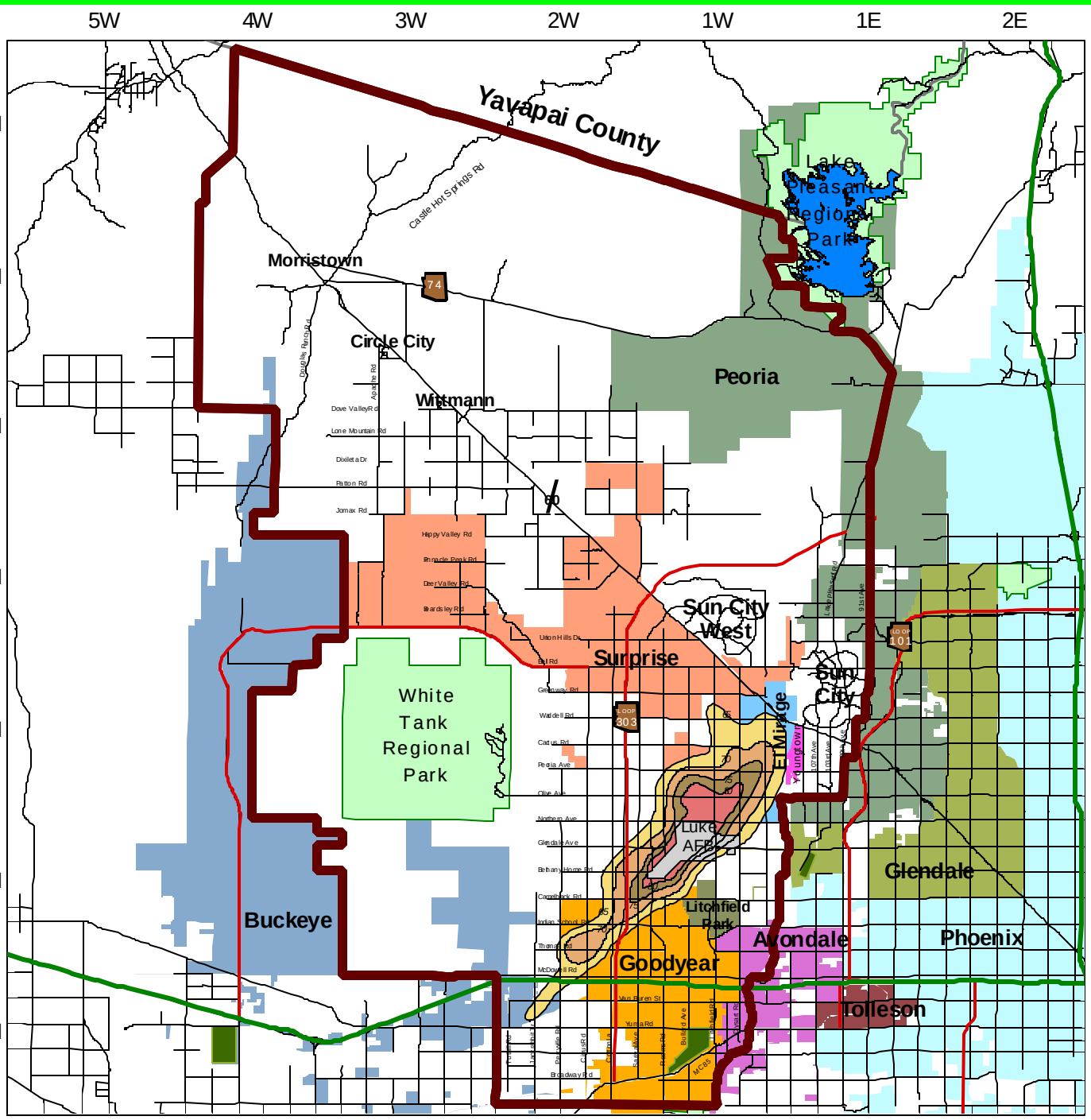
Soils

Figure 9



Land Subsidence / Earth Fissures

Figure 10



Noise Contours

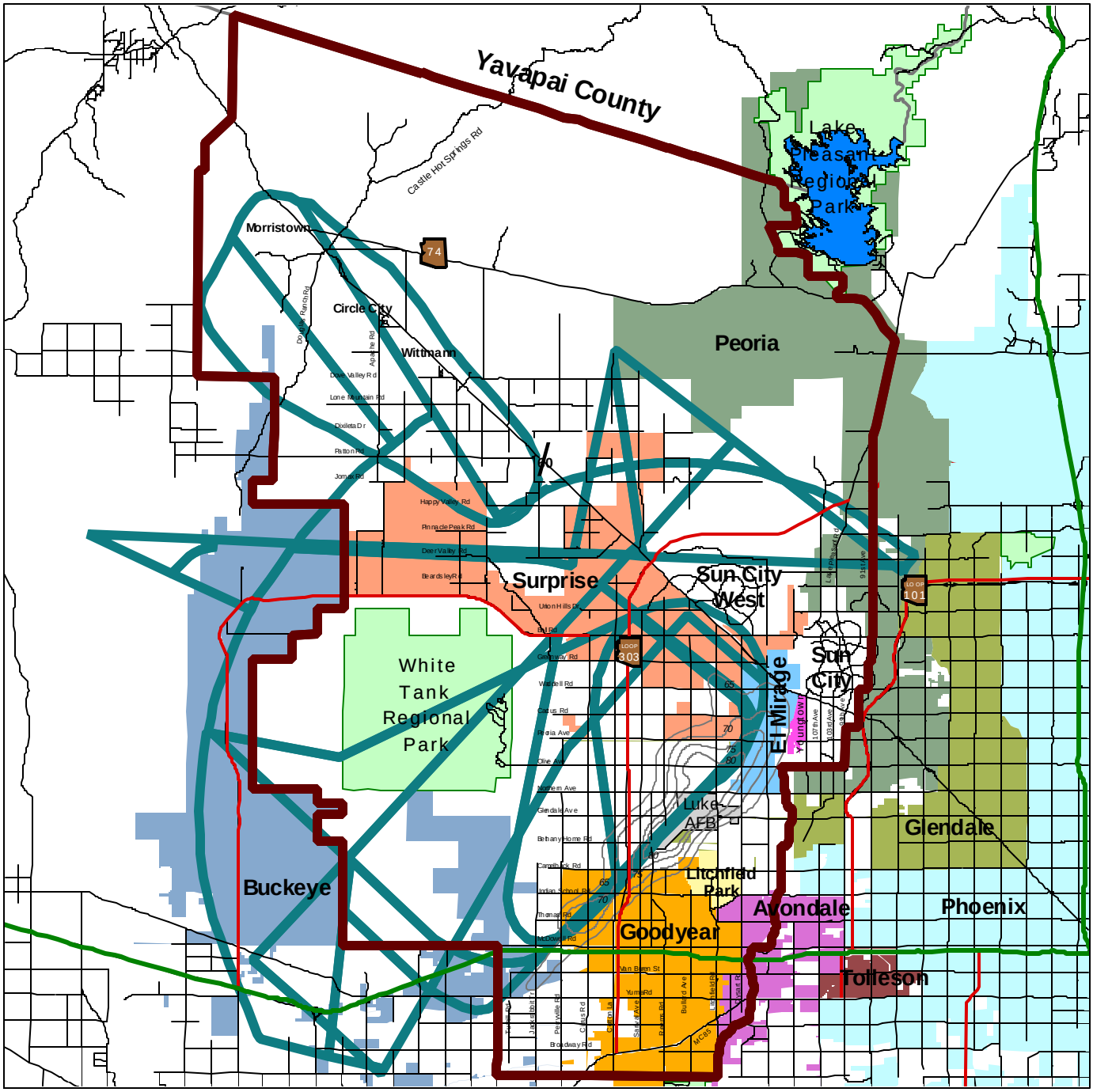
- 65 - 69 Ldn
- 70 - 74 Ldn
- 75 - 79 Ldn
- 80+ Ldn

- Planning Area Boundary
- County Park
- Municipal Airport
- Interstate
- Future Freeway
- Arterial Street

2 0 2 4 Miles

Noise Contours

Figure 11



Luke AFB Flight Pattern
Plan Boundary
Noise Contours
County Park
Interstate
Future Freeway
Arterial Street

Luke AFB Flight Patterns

Figure 12

1 0 1 2 3 4 5 6 Miles

ISSUE IDENTIFICATION

Issue History

This section summarizes both past and current planning issues that were identified by West Valley residents.

White Tanks / Agua Fria Policy & Development Guide

The White Tanks/Agua Fria Citizens Planning Committee was appointed by the Planning and Zoning Commission in January, 1979, and held its first meeting that same month. Over a three year period, the committee prepared a general policy and development guide for the area. The Citizen Committee developed recommendations deemed necessary to fulfill the plan's purpose. These recommendations included:

- Requesting that municipalities and other government agencies adopt the White Tanks/ Agua Fria Policy and Development Guide.
- Encouraging the County and Luke Air Force Base officials to find a solution to the traffic congestion on Litchfield Road near the base. Potential suggestions included construction of an overpass or underpass, or change the alignment of Litchfield Road.
- Coordinating the development review process with all public and semi-public agencies and jurisdictions within the planning area.
- Ensuring that development proposals for public lands be reviewed in the same manner as proposals on private lands.
- Periodically reviewing Maricopa County's ordinances and regulations to ensure that they continue to protect the public interest and reflect the changing needs of development.
- Periodically reviewing the development regulations of local cities and towns to determine their consistency with those of Maricopa County. Consistent regulations help developers and property owners, and reduce conflicts upon annexation.
- Supporting implementation of the 1978 Military Airport Zoning Ordinance.
- Continue supporting the activities of the Maricopa Association of Governments.
- Considering establishment of a single agency or multi-jurisdictional authority for regulating development in flood-prone areas.
- Pursuing additional state legislation that ensures proper control of mining operations within the 100 year floodplain.
- Encouraging continuous coordination between various departments, agencies, boards, commissioners, and elected officials within County government.

Grand Avenue Corridor Area Land Use Plan

On January 30 and February 11, 1986, two Grand Avenue Corridor Community Issue Identification Workshops were held at Johnson Social Hall in Sun City West, and at the Nadaburg Elementary School in Wittmann. Residents, business people, property owners, Maricopa County Planning and Zoning Commissioners, and the Maricopa County Board of Supervisors were invited to attend the workshops. Approximately 250 people attended both workshops and identified specific issues and ideas they felt should be addressed. Participants identified ninety-one issues relating to land use, environment, transportation, and public utilities, and then prioritized these issues according to low, medium, and high importance. Fifty one issues were rated as high importance, and are identified in **Table 15**.

On January 27, 1992, Approximately 40 people attended a public meeting at Nadaburg Elementary School to discuss the updated and expanded Grand Avenue Corridor Land Use Plan. At this meeting, six additional issues were identified and are also listed on **Table 15**.

Summary of Resident Issues
As the inventory and analysis document was, several important issues emerged. Those issues related to many of the issues identified at the 1986 Community Issue Identification Workshop. These issues include:

Environment:
Residents of the Grand Avenue Corridor Area perceived eliminating dumping and open burning in the desert, controlling flooding, and promoting floodplain areas as open space as major environmental issues.

Land Use:
Sun City West and Wittmann residents perceived key land use issues differently. Sun City residents recognize the need to promote high quality development by using transitional land uses, buffer zones, and concentrated areas of commercial and industrial development. Wittmann residents, on the other hand, worked to maintain a rural lifestyle, develop a town commercial center, and preserve Bureau of Land Management land as open space areas. Additionally, Wittmann residents were concerned about future annexation by the City of Surprise.

Transportation:
Sun City West and Wittmann residents identified improving/widening Grand Avenue, improving existing roadways, and developing a public transit system as major transportation issues. Wittmann residents also expressed interest in developing alternatives to the Grand Avenue Expressway.

Public Utilities:
Residents of both communities expressed interest in improving existing public utilities, providing health care facilities, and adding park and recreation areas.

TABLE 16: Grand Avenue Corridor Resident Issue Identification

Issues Identified by Sun City West Residents

Environmental
- Air quality, pollution
- Water supply (use/quantity)
- Promote desert landscaping
- Promote floodplain areas as Parks & open space
- Control flooding

Transportation
- Improve / widen Grand Avenue
- Improve transportation timing
- Traffic control
- Develop public transit system
- Construct railroad underpasses and overpasses

Land Use
- Concentrate commercial activities
- Encourage transitional land uses/buffers
- Consolidate heavy industry
- Promote high development standards
- Stop mobile home/R.V. park development
- Limit developer control

Public Utilities
- No garbage collection/landfill
- Provide health services
- Provide park & recreation areas
- Coordinate landfill planning

Issues Identified by Wittmann Residents

Environmental
- Clean up community/desert
- "No dumping" signs
- Eliminate open burning

Transportation
- Control motorcycles
- Improve/Widen Grand Avenue
- Pave/oil local roads
- Provide alternatives to Grand Avenue
- Birdsong should not be designated as arterial
- Concern about future Right-of-Way

- Acquisition along Grand Avenue
- Five mile cutoff has been fenced off by 211th avenue

Land Use

- Maintain rural development areas
- Keep livestock in Chapparal area
- Access to horse trails
- Maintain greenbelts
- Retain BLM land as public park/open space
- More industrial development
- Encourage well-planned communities
- Develop town commercial center
- No two story development
- Encourage mixed uses
- Economic balance/housing mix
- Change five-acre mobile home lots to one acre
- Enforce one unit per lot rule
- Concerned about future annexationby Surprise

Public Facilities

- Improve/expand water company
- Need a high school
- Acquire park land
- Need health care facility
- Law enforcement

Current Issues 1998-1999

West Valley residents, focus group participants, project advisory committee members, and stakeholders were very helpful in identifying a variety of current issues and concerns. These issues—categorized according to the updated plan's four elements—are shown in **Table 17.**

Table 17: Current Issues

Land Use

- Plan/implement interconnected open space & trails system
- Ensure compatible land use
- Establish cohesive/mixed-use neighborhoods
- Encourage housing infill
- Create desert open space not in the mountains
- Maintain commercial uses in Wittmann
- Control growth around Wittmann & Morristown
- Protect Luke Air Force Base from urbanencroachment
- Maintain private property rights
- Standardize the Luke noise contours
- Identify desired growth areas
- Preserve agriculture land
- Prevent uncontrolled lot splitting
- City/county and city/city planning coordination in interface areas
- Design public facilities for multiple use
- Develop integrated communities where all residents participate and are stakeholders
- Elderly & low income lack access to needed services
- Careful, well thought-out growth patterns

Transportation

- Traffic congestion
- Grand Avenue intersections are toodangerous
- Complete Loop 303 to Interstate 10
- Move Loop 303 farther north of Sun City West
- Need additional road to Lake Pleasant
- Additional entrance to White Tank Park
- Improve transportation system links across the Agua Fria River
- Provide additional east-west connections
- Provide more bicycle routes
- Discourage truck cut-through traffic in Sun City
- Use railroad tracks along Grand Avenue as a light rail corridor

Environment

- Reduce air pollution
- Protect White Tank Park
- Ensure future water supply/quality
- Groundwater overdraft and land subsidence
- Proliferation of package wastewater treatment plants

Economic Development

- Need more employment opportunities
- Need commercial services in Wittmann and Morristown
- Create better jobs/housing balance
- Need more affordable housing
- Identify and plan employment corridors
- Expand educational opportunities
- Develop an appropriate economic "image" for the planning area
- Implement a comprehensive economic development strategy
- Capitalize on the area's strategic transportation system and access to local/regional markets
- Diversify the area's economy

Other issues

- Need regional medical facility
- Need additional community college
- Mitigate impacts of growth on older neighborhoods

Issue Analysis

Many of the issues, concerns, and attitudes expressed in the 1992 Grand Avenue Area Plan remain the same. Residents and stakeholders are still worried about the impact of rapid growth on the environment and land use. Moreover, they are concerned with quality development that creates more enjoyable communities. A summary of these attitudes and concerns follows.

Land Use

Residents and stakeholders express a genuine anxiety about the area's future appearance and functionality. They are concerned about a negative perception of the region, and want to develop an image that contrasts it from other parts of the metropolitan area. Many said they like the attractions and amenities they currently have, especially White Tank and Lake Pleasant Regional Parks, Luke Air Force Base, and open space areas, and want these protected from potential disruption. Numerous citizens and stakeholders also note that private property rights must be acknowledged and protected.

Although growth is an important concern, most view it as an inevitable part of life in the area. Interest is now focused on slower, more carefully planned development and land use patterns. many people express that this can only be accomplished through coordinated and cooperative efforts between the public and private sectors.

Transportation

Residents and stakeholders are primarily concerned about issues regarding access, mobility, and uncertainties related to the future road network. Most believe that traffic congestion is getting progressively worse, especially along Bell Road. Many are also worried that future development and expansion of Loop 303 and Grand Avenue will have a negative, rather than positive effect on the area. This is especially true in the Morristown/ Wittmann/Circle City area where residents generally expect the expansion of Grand Avenue (U.S. Highway 60) to have a significantly negative impact on residents' quality of life.

As the area's road network is expanded and upgraded, residents and stakeholders are concerned that the associated increase in traffic will disrupt communities. This is especially important to Sun City and Sun City West residents who view potential "cut-through" traffic as a safety hazard and an annoyance.

Environment

Residents and stakeholders are disturbed by the consequences of rapid growth on desert and open spaces, and want careful analysis of future development to help preserve selected areas. They also want existing regional parks (i.e. White Tank and Lake Pleasant Parks) protected and preserved. Residents and stakeholders are also apprehensive about water shortages and air pollution caused by growth.

Economic Development

the main concern among residents and stakeholders is the lack of jobs in the West Valley. Many believe there is a significant disconnect between where people live and where they work. As such, creating employment corridors is an important consideration. In addition to a perceived lack of jobs, employment diversity is considered important to allow citizens with varying skills, education, and interests to meet their needs. And while many are satisfied with the area's housing quality, they express a desire for more variety in terms of price and design. To meet these concerns, residents and stakeholders want coordination on a comprehensive economic development strategy for the planning area. Such a strategy would include various public agencies, as well as private and non-profit businesses and organizations.

PLAN ELEMENTS

The White Tank and Grand Avenue Area Plan establishes comprehensive goals, objectives, and policies that are derived from numerous public, focus group, project advisory committee, and partnering meetings. These goals, objectives, and policies help support and implement *Eye to the Future 2020*, the Maricopa County Comprehensive Plan. This area plan should be read and used in conjunction with *Eye to the Future 2020*, the Maricopa County Comprehensive Plan.

Using the Comprehensive Plan's format, the Area Plan elements are organized within four subject areas.

- Land Use
- Transportation
- Environmental
- Economic Development

Several general definitions should be used to help understand these four subject areas:

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 White Tank and Grand Avenue 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 the timely and orderly expansion of Urban Service Area.

Policy L1.1.1: New development outside of the Urban Service Area will be discouraged, unless part of a development master plan.

Policy L1.1.2: New residential development with gross densities greater than 1.0 dwelling unit per acre shall be located within the Urban Service Area. Maximum gross densities will be determined based on proximity to urban services and infrastructure, and compatibility with adjacent land uses.

Policy L1.1.3: Encourage incentives for development within the Urban Service Area.

Policy L1.1.4: Encourage federal, state, and local agency coordination on growth management strategies.

Policy L1.1.5: Encourage interdepartmental and interjurisdictional cooperation, coordination, and communication for area planning efforts.

Policy L1.1.6: Cooperate and coordinate with other Maricopa County departments and communities to analyze opportunities for the creation of an Adequate Public Facilities Ordinance (APFO).

Objective L1.2: Encourage the use of planned communities that provide a variety of land uses, housing types, employment opportunities, and offer a safe and pleasant living and working environment.

Policy L1.2.1: Provide incentives, such as density and floor area ratio (FAR) bonuses, for planned communities that exceed the recommended land use ratios defined in the Maricopa County Development Master Plan Guidelines.

Policy L1.2.2: Provide incentives, such as density bonuses, for planned communities that set aside at least 20% of the total single family residential units for affordable housing, which shall be defined as single family housing that is 25% lower than the median sales price of existing homes in the Phoenix metropolitan area, as determined by the most recent National Association of Realtors report.

Policy L1.2.3: Internal streets in residential areas shall be designed to discourage cut through traffic.

Policy L1.2.4: Encourage the use of flexible planning and design techniques.

Policy L1.2.5: Encourage developers to cooperate and communicate with residents and homeowners associations during any development review process for construction near the property holdings of those residents and homeowners associations.

Objective L1.3: Encourage high quality commercial centers and well-designed office, business, and industrial parks that are properly located proximate to populated areas and transportation facilities.

Policy L1.3.1: Encourage planned commercial centers, offices, and business parks that maximize vehicle circulation and pedestrian safety.

Policy L1.3.2: Identify suitable sites for a wide variety of industrial, business, and office parks.

Policy L1.3.3: Maintain high standards for commercial centers, as well as industrial, business, and office parks.

Policy L1.3.4: Discourage commercial or industrial developments in locations specified for rural density land uses.

Policy L1.3.5: Encourage low profile signage on the site for which it pertains, and discourage off site advertising signs.

Goal L2: *Protect the public health, safety, and welfare in areas around Luke Air Force Base and other noise generating centers.*

Objective L2.1: Prevent land use conflicts

Policy L2.1.1: New development in the Accident Potential Zones (APZ) 1 and 2 shall be prohibited.

Policy L2.1.2: New residential and commercial development in the 80+ Ldn noise contour, as defined by the 1988 Maricopa Association of Governments Westside Joint Land Use Study, shall be prohibited. New industrial uses may be allowed, provided the number of employees is limited to a maximum of one (1) employee per each 3,500 square feet of net lot area.

Policy L2.1.3: New development in the 75-80 Ldn noise contour, as defined by the 1988 Maricopa Association of Governments Westside Joint Land Use Study, shall be administered according to the following guidelines:

New residential development shall be strongly discouraged in the 75-80 Ldn noise contours. If it is determined that there is a need for new residential development within the 75-80 Ldn noise contours, then residential development densities, on contiguous land that is under one (1) ownership on the effective date of this plan and exceeds eighty (80) acres in area, is limited to one (1) dwelling unit per each eighty (80) acres plus one (1) dwelling unit for any acreage in excess of the minimum required acreage.

Residential density on contiguous land under common ownership existing as of the effective date of this plan, which is less than eighty (80) acres, is limited to one (1) dwelling unit per the total or combined ownership.

Noise sensitive commercial and employment center uses shall be prohibited. Other commercial and employment center uses may be allowed as part of a Plan of Development.

Policy L2.1.4: New development in the 65-75 Ldn noise contour, as defined by the 1988 Maricopa Association of Governments Westside Joint Land Use Study, shall be administered according to the following guidelines:

> New residential development shall be strongly discouraged within the 65-75 Ldn noise contours. If it is determined that there is a need for new residential development within the 65-75 Ldn noise contours, then residential development densities of up to one (1) dwelling unit per acre could be allowed.

Policy L2.1.5: Facilities for large public and private assembly, such as schools and hospitals, shall be prohibited in the 65 and higher noise contours.

Policy L2.1.6: All new development within the 65+ noise contours shall have occupied areas noise attenuated according to applicable laws.

Policy L2.1.7: Noise attenuate new residential structures outside of the 65 Ldn, yet within the *Territory in the Vicinity of a Military Airport.*

Policy L2.1.8: Notification that property is located within the *Territory in the Vicinity of a Military Airport* shall be included on all final plats, in home sales offices, and in all future covenants, conditions, and restrictions.

Policy L2.1.9: Support public awareness programs of the noise contours and their importance for compatible land use planning in the vicinity of Luke Air Force Base area.

Policy L2.1.10: Encourage the Air Force to minimize flights after 10:00 p.m. or before 7:00 a.m.

Policy L2.1.11: Support and encourage efforts to preserve agriculture and open space around Luke Air Force Base.

Objective L2.2: Encourage development patterns and standards compatible with the continuing operation of military and civilian airports, automotive proving grounds, and racetracks.

Policy L2.2.1: Discourage the intrusion of new incompatible or unrelated land uses into existing residential areas.

Policy L2.2.2: Maricopa County shall evaluate all new development within the White Tank and Grand Avenue planning area to help ensure compatibility with operations at Luke Air Force Base, auxiliary fields, civilian airports, automotive proving grounds, and racetracks. Gross densities within new residential developments located in the Territory in the Vicinity of a Military Airport shall be determined based on compatibility with Luke Air Force Base operations.

Policy L2.2.3: Maricopa County should support and encourage all municipalities to adopt land use plans that are compatible with the continuing operation of Luke Air Force Base.

Policy L2.2.4: Encourage land use and development that is compatible with existing agriculture activities.

Policy L2.2.5: Support efforts to determine the necessity of noise contours around automotive proving grounds and Air Force auxiliary fields.

GOAL L3: *Define future policies for subareas (**Figure 13—Subareas).***

Objective L3.1: Encourage development that is compatible with existing and future freeways, as well as other prominent land use features within the Interstate 10 Corridor Subarea.

Policy L3.1.1: Support commercial and employment center type uses within a half-mile of Interstate 10 and the Loop 303.

Policy L3.1.2: Encourage development that is compatible with the Perryville State Prison Complex.

Policy L3.1.3: Encourage agriculture and/or other compatible uses in areas within the 65 and higher Ldn noise contours.

Policy L3.1.4: Encourage and support development that is compatible with the continuing growth, expansion, and operation of Phoenix-Goodyear Municipal Airport.

Policy L3.1.5: Encourage and support efforts to preserve the Agua Fria River as a recreation corridor.

Policy L3.1.6: Encourage planning cooperation & coordination between Maricopa County, Luke Air Force Base, and the cities of Buckeye, Goodyear, Litchfield Park, and Avondale.

Policy L3.1.7: Encourage land use and development that is compatible with agriculture activities.

Objective L3.2: Within the White Tank Subarea, encourage development that is compatible with White Tank Regional Park, automotive proving grounds, and is consistent with the Urban Service Area.

Policy L3.2.1: Maintain and enhance opportunities for recreation offered by the White Tank Regional Park.

Policy L3.2.2: Support orderly and timely development along Sun Valley Parkway that is consistent with the Urban Service Area.

Policy L3.2.3: Encourage development that is compatible with the visual character of White Tank Regional Park.

Policy L3.2.4: Support development that is compatible with the Volvo Proving Grounds and Luke Auxiliary Base.

Policy L3.2.5: Encourage planning cooperation and coordination between Maricopa County and the City of Surprise, Town of Buckeye, Arizona State Land Department, and Bureau of Land Management.

Objective L3.3: Promote orderly growth within the Grand Avenue Corridor Subarea that maintains scenic viewsheds, promotes community identity in Wittmann, Circle City, and Morristown, and is compatible with automotive provinggrounds.

Policy L3.3.1: Along Grand Avenue (U.S. Highway 60), maintain adherence to the development guidelines and standards of the Wickenburg Highway Scenic Corridor Plan and Maricopa County Zoning Ordinance.

Policy L3.3.2: Support policies and efforts to maintain the rural character of Wittmann, Circle City, and Morristown.

Policy L3.3.3: Support development that is compatible with the continuing operation of automotive proving grounds.

Policy L3.3.4: Support compatible land uses adjacent to the Northwest Valley Landfill.

Policy L3.3.5: Encourage planning cooperation and coordination between Maricopa County and the Cities of Surprise, El Mirage, and Youngtown.

Objective L3.4: Preserve the scenic and rural character of the Northwest Valley Subarea.

Policy L3.4.1: New residential development, including development master plans, north of State Route 74 and east of the Wickenburg Highway Scenic Corridor shall not increase the overall designated density above what is currently state law.

Policy L3.4.2: Support Bureau of Land Management policies to maintain areas north of State Route 74 as resource and conservation areas.

Policy L3.4.3: Establish and maintain scenic corridor overlay along Castle Hot Springs Road.

Policy L3.4.4: Encourage preservation of the Hassayampa River floodplain as a recreation and wildlife corridor.

Policy L3.4.5: Encourage planning cooperation and coordination between Maricopa County and the Cities of Surprise and Peoria, the Arizona State Land Department, and the Bureau of Land Management.

Objective L3.5: Encourage orderly, timely, and compatible growth patterns in the Agua Fria Subarea that provide a variety of land uses, especially employment opportunities.

Policy L3.5.1: Encourage residential development as part of a planned community with a mixture of housing types and densities.

Policy L3.5.2: Encourage & support the development of a commerce, business, and/or office park near the intersection of El Mirage Road and the Loop 303.

Policy L3.5.3: Support developments within Sun City and Sun City West that provide special service needs to their residents.

Policy L3.5.4: Support the use of the Central Arizona Project (CAP) and Beardsley Canals as a recreational corridors that link regional parks and wildlife areas.

Policy L3.5.5: Support the recommendations of Maricopa County's Lake Pleasant Road Corridor Study.

Policy L3.5.6: Encourage coordinated planning efforts to ensure development patterns are compatible with current and future noise and safety hazard operations.

Policy L3.5.7: Support and encourage efforts to preserve the Agua Fria River and major floodways as a recreation corridors.

Objective L3.6: Within the Luke Subarea, encourage development to be compatible with Luke Air Force Base and the Urban Service Area.

Policy L3.6.1: Support the development of employment centers in those areas identified on the White Tank and Grand Avenue Land Use Plan.

Policy L3.6.2: Support and encourage efforts to preserve agriculture areas around Luke AirForce Base through incentives such as transfer of development rights and lease agreements.

Policy L3.6.3: Support and encourage efforts to preserve the Agua Fria River as a recreation and wildlife corridor.

Policy L3.6.4: Review and evaluate new development to determine if it is located on or adjacent to known land subsidence and earth fissure areas. If so, analyze the results of the geotechnical report for potential land use conflicts.

Policy L3.6.5: Encourage planning cooperation & coordination between Maricopa County, Luke Air Force Base, and the communities of Glendale, Litchfield Park, El Mirage, Surprise, Youngtown, Goodyear, and Buckeye.

Objective L3.7: Preserve and maintain private property rights by allowing at least one residential dwelling unit per acre for any private or state land designated as proposed open space.

Transportation

Goal T1: *Improve the roadway network to meet future transportation needs, promote safety, and mitigate congestion.*

Objective T1.1: Determine the preferred location of new roadway connections and extensions for the next 20 years.

Policy T1.1.1: Preserve necessary rights of way to maintain and extend the grid system in response to future development.

Policy T1.1.2: Prepare a comprehensive corridor improvement plan for the Loop 303 corridor from Interstate 10 to Interstate 17, through a cooperative process including all the appropriate partners.

Policy T1.1.3: Preserve scenic corridors where appropriate and implement access management measures on primary roads.

Objective T1.2: Minimize traffic congestion on regional routes, state highways, and urban arterial roads.

Policy T1.2.1: Require all new collector and arterial roads extended into developing areas to meet the applicable Maricopa County or appropriate local roadway standards.

Policy T1.2.2: The construction of new roads that are designed to provide access to new development should be the responsibility of the developer(s). Upon completion of construction, roads that are of regional or community-wide significance should be dedicated to the local jurisdiction or Maricopa County, as appropriate.

Policy T1.2.3: Support MCDOT efforts to prepare an engineering corridor study and access management plan for Bell Road.

Policy T1.2.4: Maintain adequate access to White Tank Regional Park and Lake Pleasant Recreation Area.

Policy T1.2.5: Promote regional signal coordination through inter-jurisdictional cooperation and the use of intelligent transportation system (ITS) innovations and program advancements.

Policy T.1.2.6: Improve the level of service (LOS) on congested roads. promote a minimum stable flow level of LOS D as defined in this plan for arterial and major collector roads.

Objective T1.3: Determine the most appropriate corridor for a CanaMex route.

Policy T1.3.1: Support current efforts to designate an appropriate CanaMex route by means of a separate study.

Objective T1.4: Encourage the coordinated and timely development of new roadways.

Policy T1.4.1: Recommend standard or compatible roadway cross-sections for application by jurisdictions throughout the planning area.

Policy T1.4.2: Ensure that alignments and cross-sections of major roadways in new master planned communities are consistent with those adopted by the appropriate jurisdiction.

Policy T1.4.3: Review minimum street standards and subdivision requirements to ensure adequate access for emergency vehicles.

Objective T1.5: Provide alternatives to mitigate conflicts between commercial trucking and the interests of planning area residents.

Policy T1.5.1: Support efforts by local jurisdictions to concentrate through trucks on the arterial street system.

Policy T1.5.2: Support the truck traffic and noise mitigation study being conducted by the City of Peoria and Maricopa County.

Goal T2: *Encourage the use of transit and alternative transportation modes, especially for short trips where these modes are more competitive with the private auto.*

Objective T2.1: Develop short and long range transit improvement plans for the planning area.

Policy T2.1.1: Identify and evaluate various rapid transit systems as alternatives for meeting long range transit needs, including high speed elevated transportation, regional commuter rail, light rail transit, and bus rapid transit.

Policy T2.1.2: Identify opportunities for community circulator transit routes to supplement and support regional routes.

Policy T2.1.3: Consider bus and light rail systems in the future on major roadways as warranted by demand.

Policy T2.1.4: Continue supporting long-range improvement concepts for Grand Avenue, incorporating transit and alternative modes.

Objective T2.2: Develop and implement strategies to improve senior citizen transportation using the existing transit and alternative mode concepts, as well as other modes to serve special needs of senior citizens.

Policy T2.2.1: Support the development and improvement of regional transit programs to appeal to senior citizens and ensure their sense of safety during their transportation experience.

Policy T2.2.2: Support the development of local transit program that may include dial-a-ride, shuttle service, and other services that appeal to senior citizens and will ensure their sense of safety and well-being during their transportation experience.

Objective T2.3: Develop and implement strategies to improve vehicle and pedestrian safety at specific railroad crossings in the Grand Avenue corridor.

Policy T2.3.1: Pedestrian access across Grand Avenue and adjacent railroad tracks should be considered in future studies and plans regarding this roadway.

Policy T2.3.2: Pedestrian access across Grand Avenue and adjacent railroad tracks should be considered in future studies and plans regarding development of new roads that will provide vehicle crossings over Grand Avenue and the railroad tracks.

Objective T2.4: Develop and implement strategies to provide safe equestrian crossings of new and existing roadways in areas where such crossings are necessary.

Policy T2.4.1: Equestrian crossings and access should be considered in roadway projects in the vicinity of existing and planned equestrian trails and riding areas.

Policy T2.4.2: Encourage new developments to avoid or mitigate trail access through their properties.

Objective T2.5: Improve golf cart access and safety in retirement communities.

Policy T2.5.1: Promote the development of design standards that better accommodate golf carts on collector streets.

Objective 2.6: Coordinate the bikeway planning that has been completed and develop an integrated regional bike network throughout the planning area, with an emphasis on system continuity and connection of residential areas to activity centers.

Policy T2.6.1: Coordinate and integrate the bikeway plans of the various planning area jurisdictions, with an emphasis on system continuity and connection of residential areas to activity centers.

Policy T2.6.2: Considering that many trips are shorter than three miles, provide local pathways to encourage the use of non-motorized vehicles and walking for short trips.

Environment

Goal E1: *Promote development that considers adverse environmental impacts on the natural and cultural environment, preserves highly valued open space, and remediates areas contaminated with hazardous materials.*

Objective E1.1: Encourage developments that successfully coexist and are compatible with significant natural features.

Policy E1.1.1: Continue supporting the hillside development standards in the Maricopa County Zoning Ordinance.

Policy E1.1.2: Encourage land uses and development designs that are compatible with environmentally sensitive areas such as floodplains, hillsides, wildlife habitat, scenic areas, and unstable geologic and soil conditions.

Policy E1.1.3: Discourage small lot residential and commercial development on land with hillside slopes of 10% or greater.

Policy E1.1.4: Adequate control of on and off-site drainage should be required prior to development.

Policy E1.1.5: Control land use and development within the 100-year floodplain to minimize the threat to life and property.

Policy E1.1.6: Discourage the location of structures which increase water ponding and sheetflow in floodprone areas.

Objective E1.2: Preserve significant natural and cultural resources

Policy E1.2.1: Preserve the scenic quality of the Hieroglyphic, White Tank, Estrella, and other surrounding mountains in the review of applications for land development, and develop other preservation programs and strategies as necessary.

Policy E1.2.2: Support regional efforts to promote and preserve open space.

Policy E1.2.3: Encourage efforts to establish an open space trails system between Estrella Regional Park, White Tank Regional Park, and Lake Pleasant Regional Park.

Policy E1.2.4: Support regional and statewide efforts to implement effective groundwater management programs.

Policy E1.2.5: To help reduce water use, irrigation of golf courses, neighborhood and community parks, roadway right-of-ways and other large common areas shall be accomplished entirely with treated effluent.

Policy E1.2.6: Proof of adequate future water supply will be required prior to development approval.

Policy E1.2.7: Support and foster federal, state, and local groundwater quality management programs.

Policy E1.2.8: Support and encourage local and region-wide efforts to preserve air quality.

Policy E1.2.9: Prior to development, excavation, or grading, require the applicant to submit a letter from the Arizona State Historic Preservation Officer stating that the proposed land development will have no effect on historical or cultural resources.

Objective E1.3: Preserve significant existing open space and habitat areas for wildlife and desert plant species.

Policy E1.3.1: Encourage the protection of threatened or endangered plant and animal species.

Policy E1.3.2: Encourage the use of replacement vegetation that is primarily indigenous to the Palo Verde-Saguaro plant community for any land development that disturbs that community. In addition, promote active efforts that discourage establishment and proliferation of on and off-site noxious weeds.

Objective E1.4: Support adequate opportunities for outdoor recreation that are sensitive to the environment.

Policy E1.4.1: Enhance opportunities for outdoor recreation offered in Maricopa County parks and recreation areas.

Policy E1.4.2: Support the use of canals and floodplains as recreation corridors.

Policy E1.4.3: Encourage developers to provide outdoor recreation facilities and amenities in their projects, including linear parks which provide for the joint use of flood control facilities.

Policy E1.4.4: Support establishing a scenic corridor overlay on Castle Hot Springs Road from State Route 74 to the Maricopa/Yavapai County border.

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: Expand quality employment opportunities by supporting efforts that encourage business formation and expansion.

Policy ED 1.1.1: Support, foster, and participate in efforts with cities, chambers of commerce, the Greater Phoenix Economic Council, WESTMARC, and other business organizations to promote a comprehensive economic development strategy in the White Tank and Grand Avenue planning area.

Policy ED 1.1.2: Encourage development of a wide range of employment industries, especially basic sector industries.

Policy ED 1.1.3: Continue participation in, and encourage the reauthorization and continuation of, the Western Maricopa Enterprise Zone.

Policy ED 1.1.4: Support the location of planned distribution and warehouse centers along major highways and roads.

Policy ED 1.1.5: Encourage, support, and coordinate employment in growth clusters, especially manufacturing/distribution, commercial services, retirement industries, biomedical/medical, aviation/aerospace, and agriculture/agribusiness.

Policy ED 1.1.6: Support economic incentives, such as floor area ratio bonuses, for planned industrial and mixed-use office/business parks.

Policy ED 1.1.7: Support rezoning efforts in areas designated for mixed use employment and business parks.

Policy ED 1.1.8: Foster and support public/private partnerships that promote economic development in the White Tank and Grand Avenue planning area.

Policy ED 1.1.9: Support development of an employment core around Luke Air Force Base.

Policy ED 1.1.10: Support agribusiness activities around Luke Air Force Base.

Policy ED 1.1.11: Support the continued operation of the Daimler-Chrysler and Volvo Proving Grounds.

Policy ED 1.1.12: Support the development of a regional medical facility to serve a wide range of healthcare needs.

Objective ED1.2: Help increase the jobs to residents ratio.

Policy ED 1.2.1: Utilize Maricopa County's recommended land use ratios to help ensure employment opportunities proximate to housing.

Objective ED1.3: Encourage a wide range of commercial activities at the intersections of roads of regional significance and where roads of regional significance intersect major freeways.

Policy ED 1.3.1: Encourage commercial development when demand can be justified and with the provision that construction on the proposed facilities will be completed within a specified period of time.

Policy ED 1.3.2: Support development of special facilities that attract visitors to the area.

Policy ED 1.3.3: Encourage development of commercial cores in planned communities.

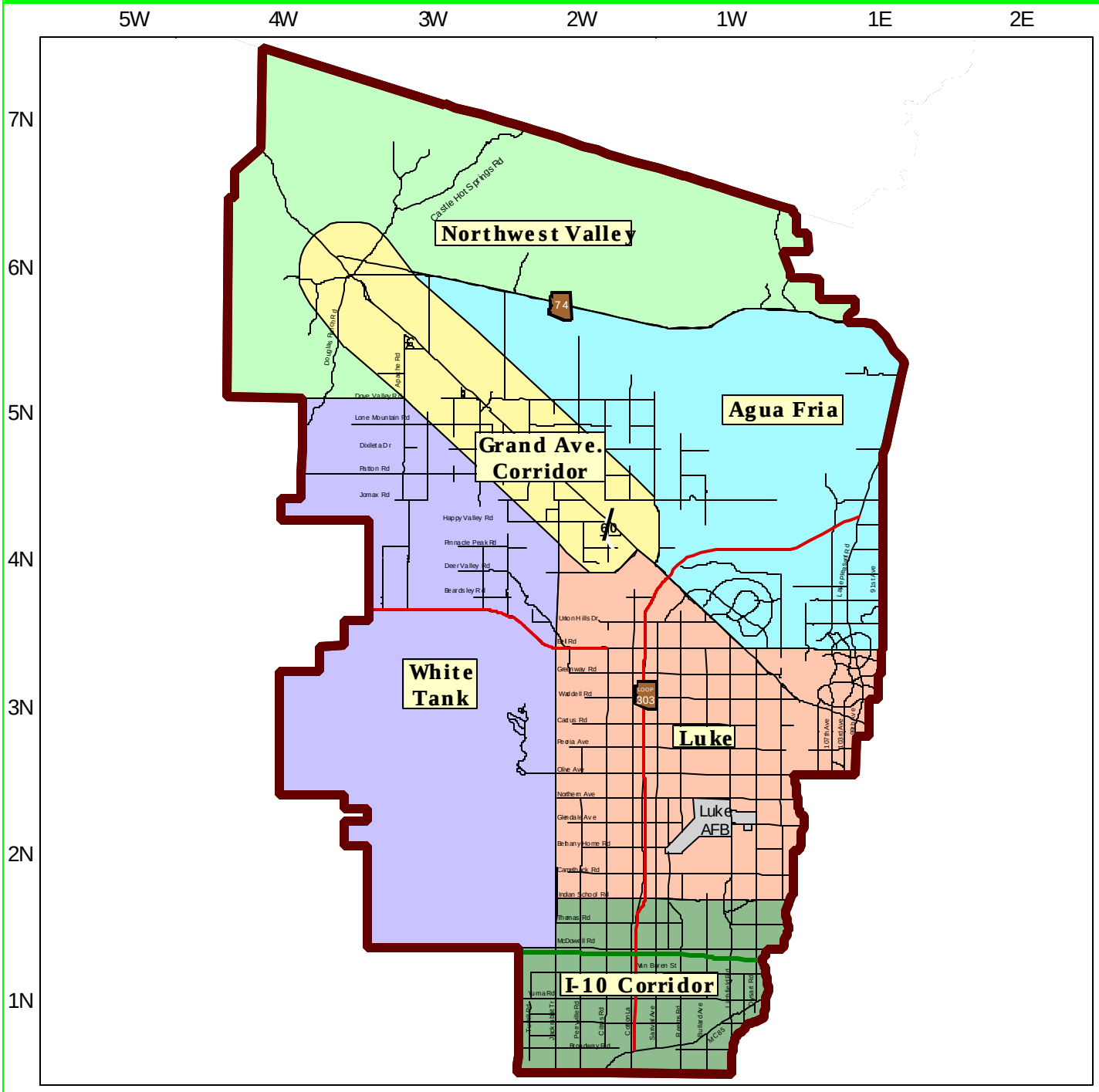
Objective ED1.4: Expand educational and job training opportunities for planning area residents.

Policy ED 1.4.1: Support creation of an additional community college in the White Tank and Grand Avenue planning area.

Objective ED1.5: Improve housing conditions in unincorporated communities.

Policy ED 1.5.1: Promote efforts to preserve and enhance housing quality in Sun City.

Policy ED 1.5.2: Promote, encourage, and participate in housing rehabilitation and neighborhood improvement programs.



Planning Area Boundary

Future Freeway

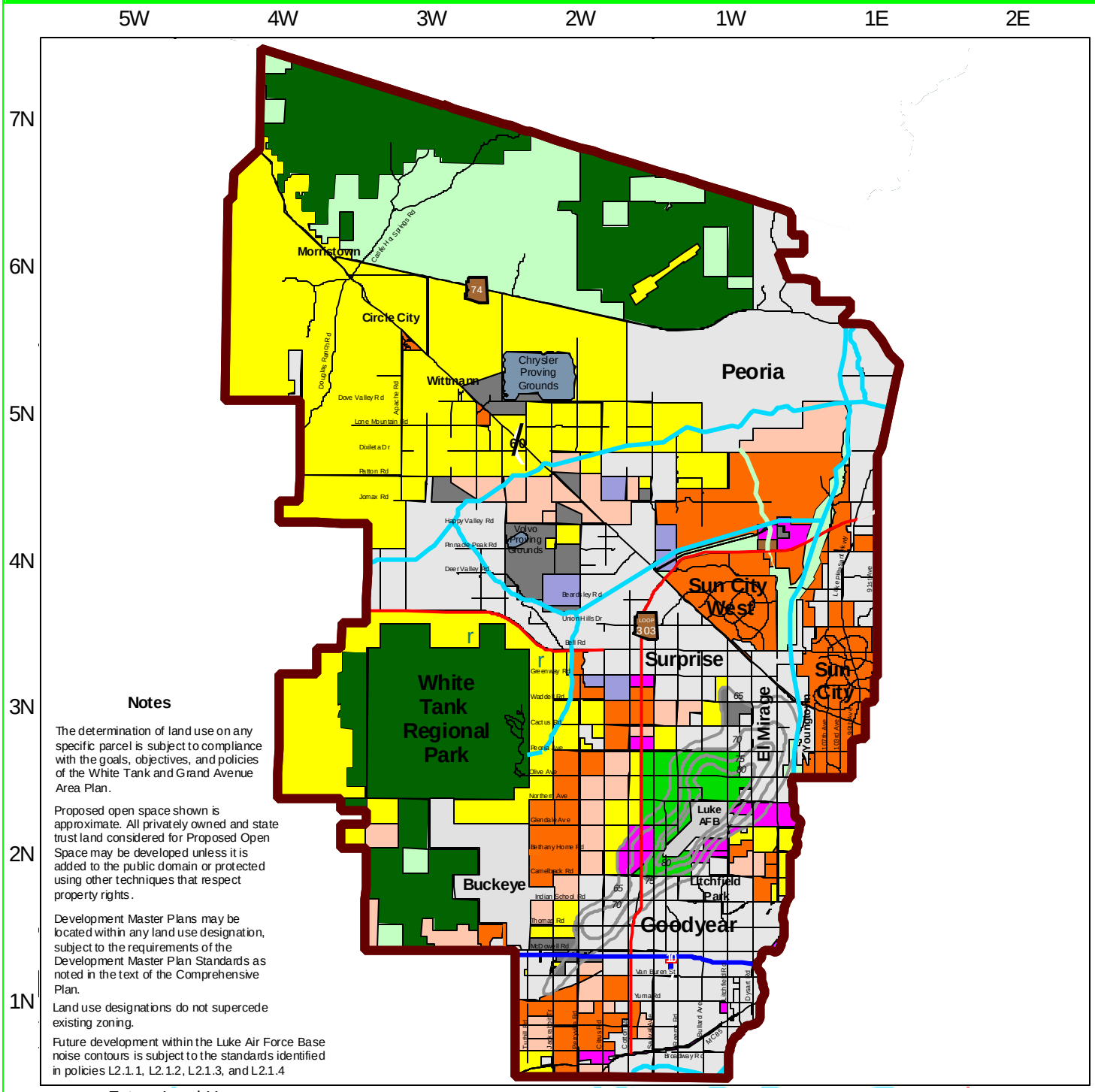
Interstate

Arterial Street

1 0 1 2 3 4 5 6 Miles

Subareas

Figure 13



Future Land Use

Figure 14

AGENDA FOR ACTION

Purpose

The White Tank and Grand Avenue Area Plan promotes efficient and pleasant communities by encouraging growth in areas suitable for development, and by creating an efficient transportation system, a healthy environment, and diverse economy. However, ensuring plan success requires an effective implementation program.

The White Tank and Grand Avenue 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 17** details the White Tank and Grand Avenue Action Plan, and is organized as follows:

Action	Lists actions necessary to implement the Area Plan
Description	Describes the process for issue resolution
Elements Involved	Lists the elements of the Area Plan involved in the action
Timeline	Details when particular actions will take place
Department / Agency	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
MCCDD	Maricopa County Community Development Department
MCESD	Maricopa County Environmental Services
FCDMC	Flood Control District of Maricopa County
AZDOC	Arizona Department of Commerce
MC HEALTH	Maricopa County Health Department
MC PARKS	Maricopa County Parks Department
COMM DEV.	Maricopa County Community Development
MUNICIPALITIES	Municipalities within the White Tank and Grand Avenue planning area
CITIZENS	Interested residents & landowners in the White Tank and Grand Avenue planning area
PRIVATE AGENCIES	Includes private and non-profit organizations such as chambers of commerce, interest groups, homeowners associations, civic organizations, etc.
DEVELOPERS	Homebuilders and related organizations operating within the planning area
STATE LAND DEPT	Arizona State Land Department
BLM	Bureau of Land Management

Table 18 Action Plan

Action	Description	Plan Element	Participants	Timeline 5 years				
Revise DMP Guidelines	Revise DMP guidelines to achieve compatible, efficient, and consistent land development	All	MCP&DD MCDOT FCDMC					
Growth Guidance Around Luke AFB	Convene regular West Valley interjurisdictional meetings to review future development near Luke AFB, and coordinate strategies to protect its future operations, public safety, and private property rights	All	MCP&DD MCDOT municipalities Luke AFB Private Agencies Citizens Developers					
Open Space/Trails System	Develop and implement open space trails system plan from Estrella Regional Park to White Tank Regional Park and Lake Pleasant Regional Park	Land Use Environment	MCP&DD MC PARKS Municipalities Citizens Private Agencies BLM State Land Dept FCDMC					
Cooperative Planning Techniques	Convene regular West Valley interjurisdictional meetings to discuss current and long range planning strategies and techniques	All	MCP&DD MCDOT Municipalities Private Agencies State Land Dept BLM					
Public Outreach Program	Meet regularly with citizen groups, agencies, Homeowner Associations, etc. to discuss planning and growth related issues	All	MCP&DD MCDOT Citizens Private Agencies					
Economic Development Strategy	Convene regular interjurisdictional meetings to identify and implement coordinated West Valley economic development strategies	Econ. Dev.	MCP&DD Municipalities Private Agencies AZDOC					
Medical/Healthcare	Convene forum(s) to identify future healthcare planning issues, including opportunities for a regional medical facility	Land Use Econ. Dev. Other	MCP&DD MC Health Private Agencies Municipalities Citizens					
Senior Citizen Communities/Issues	Convene forum(s) to identify current and future issues relating to senior citizens and senior communities	All	MCP&DD MC Health Private Agencies Citizens Comm Dev					

Action Plan cont.

Action	Description	Plan Element	Participants	Timeline 5 years				
Update Area Plan	Periodically review White Tank and Grand Avenue Area Plan to maintain functionality	All	All					
Adequate Public Facilities Ordinance (AFPO)	Convene meeting(s) with other County agencies to identify the potential development of an AFPO	All	All Maricopa Co.					
Scenic Corridor Zoning Review	Review/update existing scenic corridor zoning ordinances. Identify additional scenic highway corridors, including Castle Hot Springs Road, and incorporate into the Maricopa County Zoning Ordinance.	Land Use Environment	MCP&DD MCDOT					
Update White Tanks/Agua Fria Technical Guide	Update existing White Tank/Agua Fria Technical Guide to ensure accuracy and to help guide planning and development decisions.	All	All					

AMENDMENTS

Amending the Area Plan

Area Plan amendments may be filed with or without rezoning requests or Development Master Plan applications. Arizona Revised Statutes §11-829A states that all applications for zoning changes must be in compliance with the County's Comprehensive Plan and/or adopted Area Plan.

Plan amendments should not occur in an uncontrolled manner, and 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.

Proposed amendments will be evaluated based on the following criteria:

1. Whether the amendment constitutes an overall improvement to the White Tanks and Grand Avenue Area Plan, and is not solely for the good or benefit of a particular land-owner 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 White Tanks and Grand Avenue Area Plan.

4. The extent to which the amendment is consistent with the specific goals and policies contained in this Area Plan.

The requirements and guidelines necessary for Area Plan amendments are the same as those for *Eye to the Future 2020*, 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.

APPENDIX

Appendix A – Glossary of Terms

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

Adequate Public Facilities Ordinance (AFPO): Mechanism that ties or conditions development approvals to the availability and adequacy of public facilities. An AFPO primarily prescribes the timing, and not the location or quality of development.

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.

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.

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_{10}.

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_{10}: Airborne particulate matter of 10 microns or less in diameter. PM_{10} 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).

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.

Suburban: When used in the context of a Maricopa County Area Plan, suburban includes residential uses at generally two to three single family units per acre and accompanying nonresidential and public development.

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 of three or more residential units 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.

Appendix B – Generalized Existing Zoning

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

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. *Manufactured House Residential Overlay (MHR):* Provides for housing which is similar to conventional on-site-built housing in subdivisions or on individual lots where manufactured housing is appropriate.

3. *Senior Citizen Overlay (SC):* Provides for planned residential development designed specifically for residency by older populations.

4. *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.

5. *Special Uses (SU):* Allows a class of uses that are otherwise prohibited by the Ordinance.

6. *Temporary Uses (TU):* Allows a class of uses for a specific period of time.

7. *Conditional Uses (CU):* Allows a class of uses based on unique circumstances.

8. *Unit Plans of Development (UPD):* Provides for large scale development where variations in lot size, dwelling type and open space is warranted due to topographic or other considerations.

9. *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.

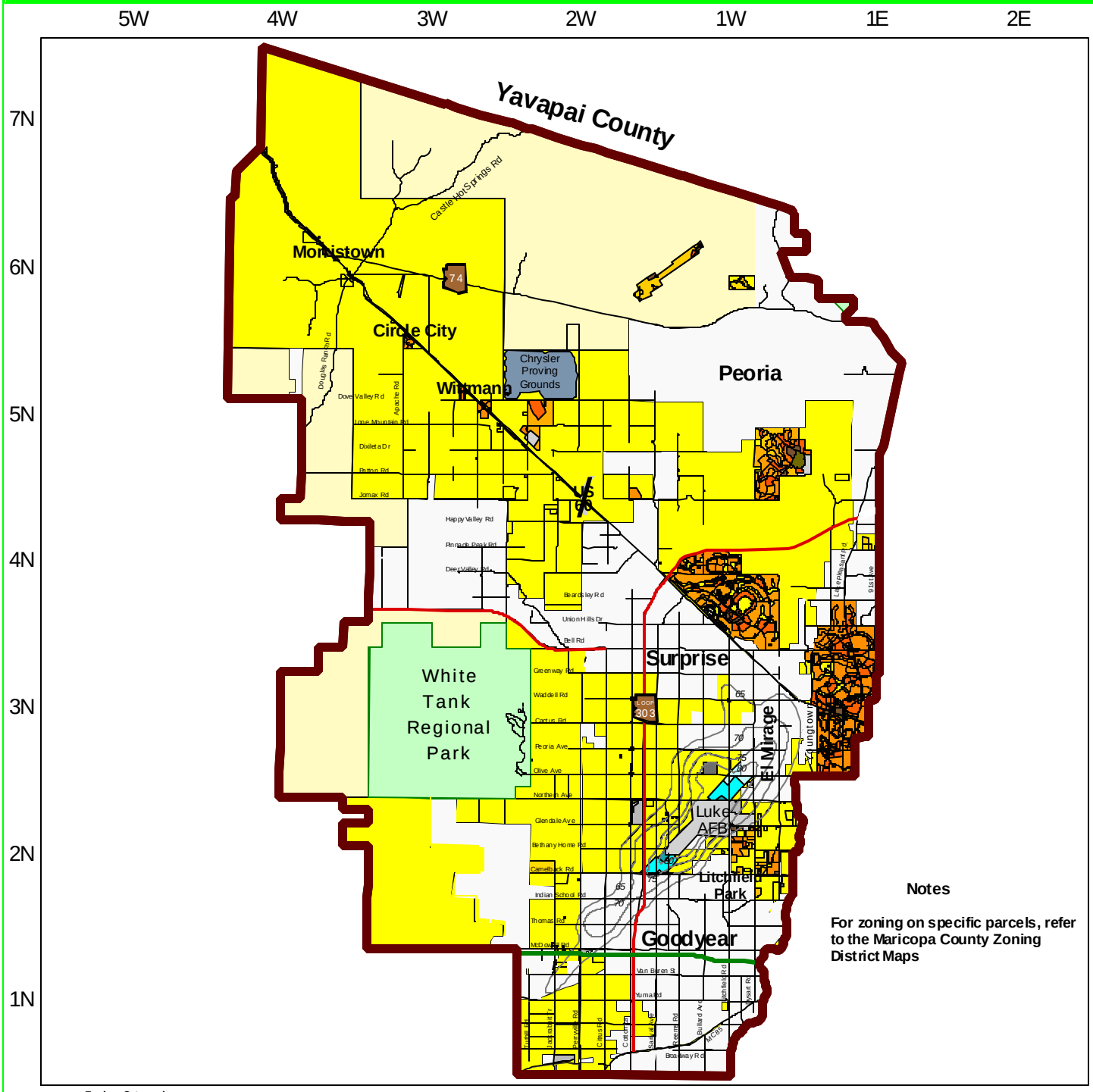
10. *Uniform Building Code (UBC):* Establishes standards for building construction and site preparation.

11. *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.

12. *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.

Appendix D – Acronyms

ADOT	Arizona Department of Transportation
AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
API	Arizona Preserve Initiative
APFO	Adequate Public Facilities Ordinance
A.R.S.	Arizona Revised Statutes
BLM	Bureau of Land Management
BOS	Board of Supervisors
CAP	Central Arizona Project
CC&R	Covenants, Conditions, and Restrictions
CIP	Capital Improvement Program
CRC	Community Retail Center
DMP	Development Master Plan
FAR	Floor Area Ratio
FCDMC	Flood Control District of Maricopa County
GPEC	Greater Phoenix Economic Council
JLUS	Joint Land Use Study
MAG	Maricopa Association of Governments
MCCD	Maricopa County Community Development
MCDOT	Maricopa County Department of Transportation
MCESD	Maricopa County Environmental Services Department
MCP&DD	Maricopa County Planning and Development Department
NWVTS	Northwest Valley Area Transportation Study
NRC	Neighborhood Retail Center
RDA	Rural Development Area
RPTA	Regional Public Transportation Authority
SHPO	State Historic Preservation Office
TSP	Transportation System Plan
USA	Urban Service Area
WMEZ	Western Maricopa Enterprise Zone



Zoning Categories

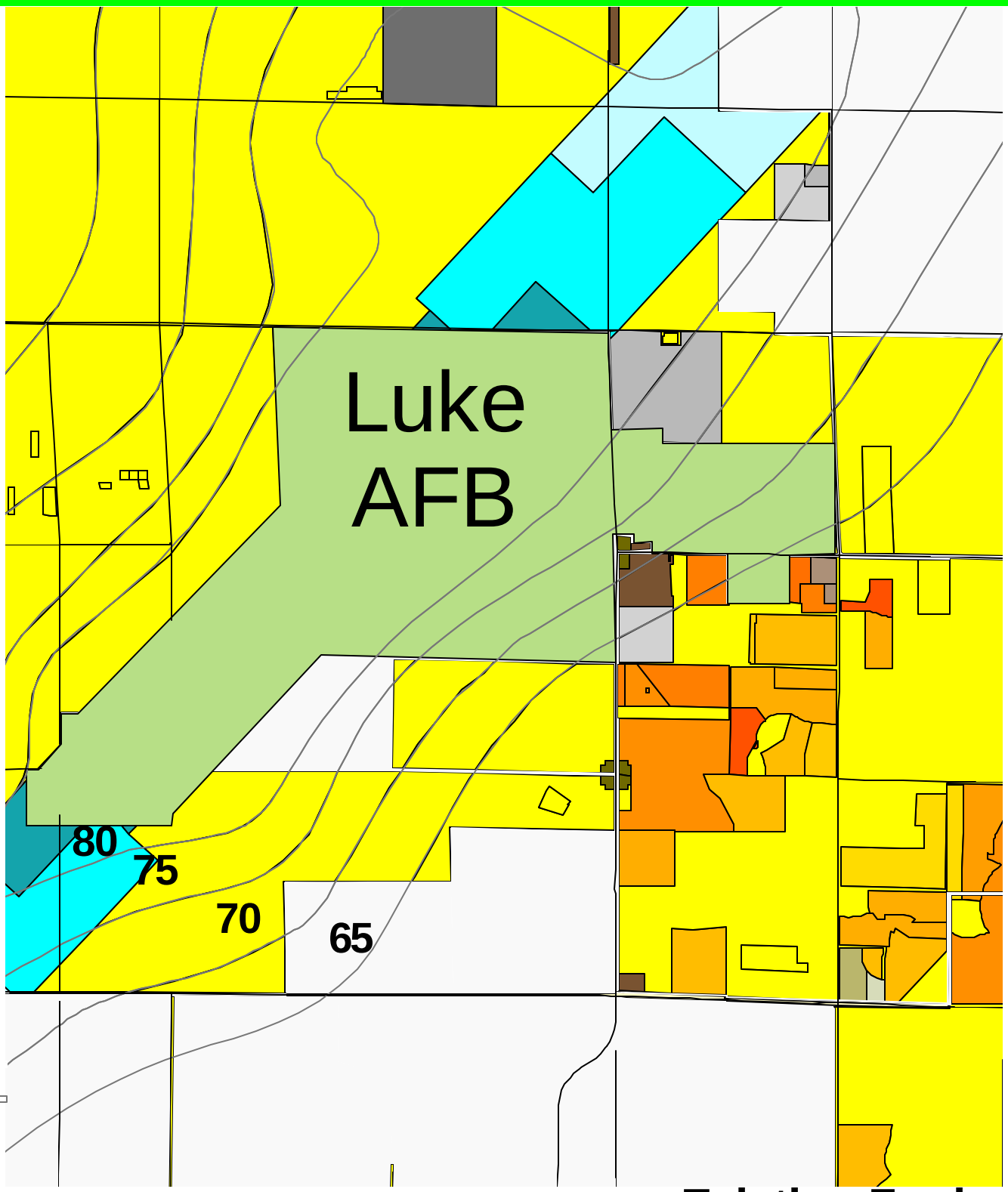
- R-2
- R-3
- R-4
- R-5
- R1-6
- R1-7
- R1-8
- R1-10
- R1-18
- R1-35
- RURAL-43
- RURAL-70
- RURAL-190
- AD-1
- AD-2
- AD-3
- C-0
- C-1
- C-2
- C-3
- CS
- IND-1
- IND-2
- IND-2p
- IND-3
- IND-3p

- Plan Boundary
- Interstate
- Future Freeway
- Arterial
- Luke AFB Noise Contours
- County Park
- Incorporated

1 0 1 2 3 4 5 6 Miles

Existing Zoning

Figure 15



EXISTING ZONING

Residential: R-2, R-3, R-4, R-5, R1-6, R1-7, R1-8, R1-10, R1-18, R1-35, RURAL-43, RURAL-70, RURAL-190

Commercial: C-0, C-1, C-2, C-3, CS

Industrial: IND-1, IND-2, IND-2p, IND-3, IND-3p

Airport District: AD-1, AD-2, AD-3

0 1 Miles

Existing Zoning Luke AFB Area

Figure 16