

**GRAND
AVENUE
CORRIDOR**

LAND USE PLAN

MARICOPA COUNTY

A901.969

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MARICOPA COUNTY LAND USE PLAN

GRAND AVENUE CORRIDOR PLANNING AREA

Adopted October 7, 1991



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INTRODUCTION

This introduction provides an overview of the process used to prepare the Grand Avenue Corridor Land Use Plan as part of the Maricopa County Comprehensive Land Use Plan. The "Introduction" is presented in three sections:

Area Plan Development
Organization of the Grand Avenue Corridor Land Use Plan
Annual Update Process

AREA PLAN DEVELOPMENT

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

For each specific area, the County requested that the provided professional services include collection and analysis of existing data leading to specific goals and policies to guide general land development. Each specific study area was also to include a land use plan.

Throughout the planning process, community participation was emphasized through a number of means. Three public workshops for the Grand Avenue Corridor Planning Area were held to solicit 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 the project progress. Thorough coverage by the news media was also encouraged to create further awareness of the workshops and participation by the general public in the planning process.

ORGANIZATION OF THE GRAND AVENUE CORRIDOR LAND USE PLAN

This document presents the results of the planning process for the Grand Avenue Corridor Planning Area and is organized corresponding to the major work tasks.

"Inventory and Analysis," is a presentation and analysis of the data elements that describe existing conditions in the Grand Avenue Corridor Planning Area.

"Resident Issue Identification," summarizes the major land development issues raised by the residents of the Grand Avenue Corridor Planning Area.

"Goals and Policies," defines specific goals and policies which the County has adopted with regard to growth and development in the Grand Avenue Corridor Planning Area.

"Grand Avenue Corridor Land Use Plan," presents the land use plan for the area with definitions for each land use category and discussion of the land use plan, which will be implemented, in part, through the application of the policies as presented in the "Goals and Policies" Section.

ANNUAL UPDATE PROCESS

Each year the Grand Avenue Corridor Land Use Plan is revised to reflect changes in information and data. The Maricopa County Planning and Development Department updates each land use plan using the most current Maricopa Association of Governments' (MAG) data. This data is compiled by MAG's Transportation and Planning Office. As each update is completed, it will be considered at public hearings before the Planning and Zoning Commission and Board of Supervisors. During 1990, the northern boundary of the Planning Area (Highway 74) was extended north by one mile, from Castle Hot Springs Road to the Agua Fria River. The Planning Area now encompasses 171 square miles.

INVENTORY AND ANALYSIS

Development of the **Grand Avenue Corridor Land Use Plan** hinges on a thorough understanding of the various physical, social, and economic aspects of life in the immediate and surrounding area. This chapter of the land use plan identifies and describes the following elements:

- Natural Resources
- Social and Economic Characteristics
- Existing Land Use and Zoning

The "Inventory and Analysis" chapter of this Land Use Plan presents an analysis of data that describes existing conditions in the planning area. Population projections are also presented as part of the "Inventory and Analysis" so that the community, elected and appointed public officials, and planning staff have a thorough understanding of the anticipated growth in the planning area.

NATURAL RESOURCES

In describing natural resources in the Grand Avenue Corridor Planning Area, the following five elements are identified:

- Physical Characteristics
- Hydrology
- Vegetation and Wildlife
- Archaeology
- Policy Implications

The purpose of this section of the Grand Avenue Corridor Land Use Plan is to describe the physical setting, to identify existing groundwater characteristics and flood control measures, to locate habitat areas, to note any archaeological resources, and to identify policy implications.

Physical Characteristics:

The "Physical Characteristics" section describes key features of the natural and man-made environment which affect growth and development in the Grand Avenue Corridor Planning Area. "Physical Characteristics" is presented in the following six sections:

- Physical Setting
- Soils
- Topography
- Geology
- Visual Features
- Air and Noise Quality

Each of the above factors will, to some extent, dictate the quality, character and direction of development in the planning area. The purpose of this section is to formulate an understanding of the environmental characteristics which are affecting, and continuing to affect, growth and development in the planning area.

a) Physical Setting

The Grand Avenue Corridor Planning Area is located in the north central portion of Maricopa County, south of the Hieroglyphic Mountains, north west of the Town of Surprise and west of the Agua Fria River as illustrated on **Figure - 1**. Elevations within the planning area range from 1,150 feet above sea level along the eastern boundary to 2,372 feet above sea level near the northern boundary (Saddleback Mountain). Terrain within the planning area ranges from rock outcrops in the northeastern portions, to alluvium found in the remaining western and southern portions.

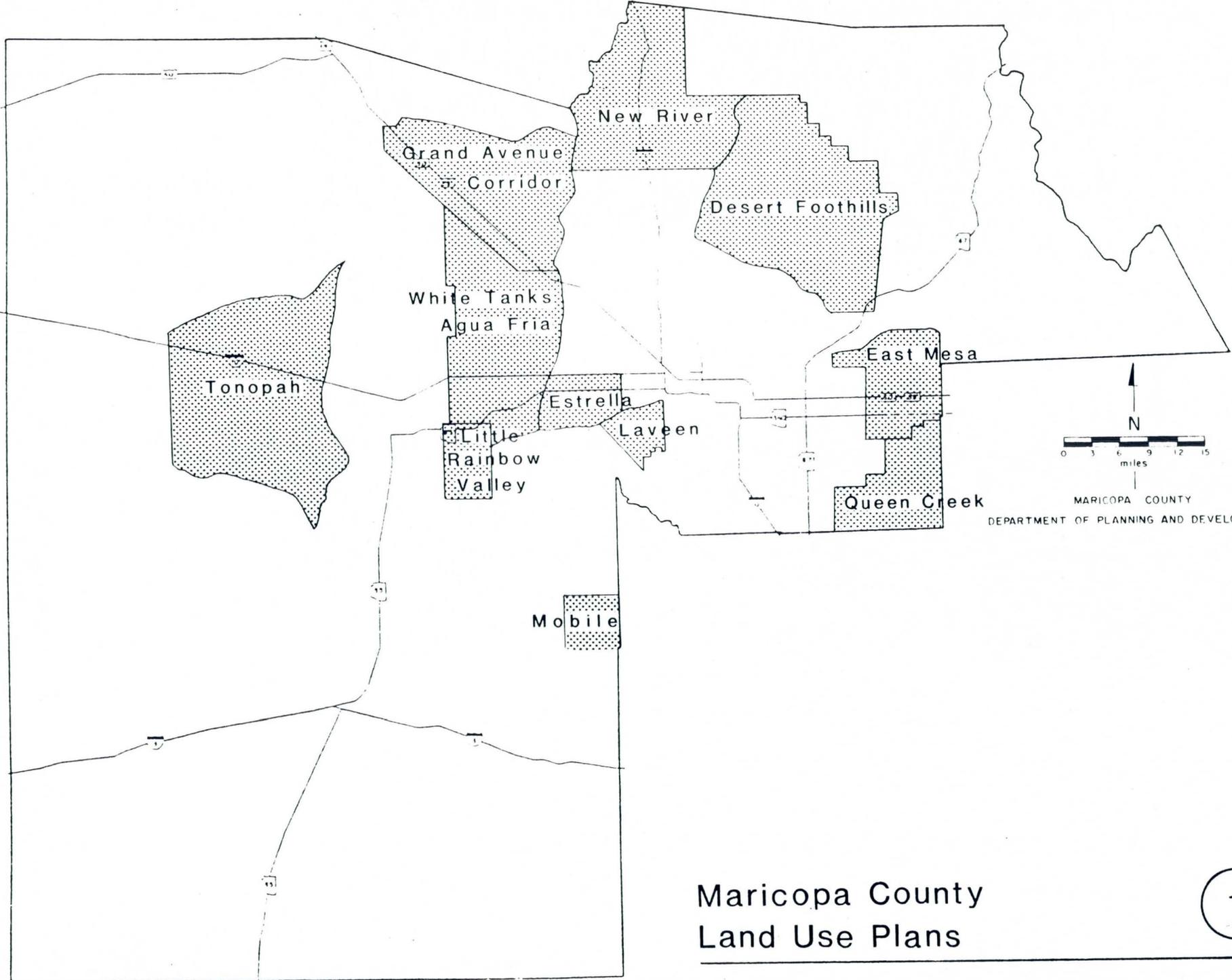
In the Grand Avenue Corridor Planning Area, which encompasses approximately 171 square miles, a majority of the landscape is characterized by natural desert scenes while some urban scenes are also found. Most of the urban scenes are composed of single-family housing. The natural scenes are composed of desert lowlands where Creosote habitat is found and desert foothills where Palo Verde-Saguaro habitat is found.

Climate in the planning area is similar to the rest of the Phoenix area with generally mild fall, winter, and spring weather; and hot, dry summer weather. **Table-1**, "Average Monthly Weather Characteristics", summarizes monthly temperature and precipitation levels in the planning area.

b) Soils

Six major soil associations, as illustrated on **Table-2**, are located within the planning area. The Gachado Association covers the northeast portion of the planning area. The Tremant-Ebon-Pinamt Association covers the remainder of the area in the north. The Momoli-Carrizo-Denure Association covers an area extending north from the intersection of the Central Arizona Project Canal and Grand Avenue. The Carrizo-Brios Association covers the area along the Agua Fria River from Bell Road to the Central Arizona Project Canal. The Gilman-Estrella-Avondale Association covers an area in the central portion extending from the Central Arizona Project Canal to the Beardsley Canal and extends south to Sun City West. This association can also be found in a small area along the western boundary. The Mohall-Laveen Association covers the remainder of the southern portion of the planning area.

The Tremant-Ebon-Pinamt Association is well drained and consists of deep slowly to moderately permeable, fine, loamy, and clayey-skeletal soils formed in add mixed alluvium on old sands with slopes ranging



Maricopa County
Land Use Plans

MARICOPA COUNTY
DEPARTMENT OF PLANNING AND DEVELOPMENT

TABLE - 1
Average Monthly Weather Characteristics

Month	Average Daily Maximum Temperature (F)	Average Daily Minimum Temperature (F)	Average Total Precipitation (Inches)
January	66.9	35.0	0.76
February	70.9	38.6	0.72
March	76.4	42.0	0.83
April	84.5	48.3	0.38
May	93.4	55.7	0.07
June	102.4	65.2	0.11
July	106.3	74.7	0.82
August	103.5	73.1	1.05
September	99.2	66.2	0.63
October	88.1	52.8	0.73
November	77.1	42.0	0.52
December	67.8	35.6	1.03
<hr/>			
Total	86.3	52.4	7.63

Information based on a thirty year average.
Average Total Snow, Sleet and Hail Annually: Trace
Source: Arizona Department of Commerce

TABLE - 2
DEVELOPMENT CONSTRAINTS BY SOIL ASSOCIATION

	<u>Tremant- Ebon- Pinamt</u>	<u>Gachado- Rock- Outcrop- Quilotosa</u>	<u>Momoli- Carrizo- Denure</u>	<u>Mohall- Laveen-</u>	<u>Gilman- Estrella- Avondale</u>	<u>Carrizo- Brios</u>
Septic Tank Absorption Fields	Slight	Severe	Severe	Moderate to Severe	Slight to Moderate	Severe
Dwellings Without Basements	Slight	Severe	Severe	Moderate to Severe	Moderate	Severe
Dwellings With Basements	Slight	Severe	Severe	Moderate to Severe	Moderate	Severe
Local Roads and Streets	Severe	Severe	Severe	Slight	Moderate to Severe	Slight
Small Commercial Buildings	Slight	Severe	Severe	Severe	Moderate	Severe
Lawns and Landsca- ping	Severe	Severe	Severe	Moderate	Moderate	Severe

Source: U.S. Department of Agriculture Soil Conservation Service, "Soil Survey: Aguila-Carefree Area," and "Soil Survey of Maricopa County, Arizona, Central Part."

up to 5 percent. The Gachado-Rock Outcrop-Quilotosa Association has slopes of 5 to 55 percent and consists of 65 percent rock. The Momoli-Carrizo-Denure Association is excessively drained and nearly level to gently sloping with slopes up to 10 percent. The Carrizo Association is a deep and excessively drained soil on floodplains and alluvial fans. Slopes range from 0 to 3 percent and permeability is very rapid. The Gilman-Estrella-Avondale Association is well drained and consists of deep, moderately permeable, coarse to fine, loamy soils formed in mixed recent alluvium on floodplains, low terraces, and alluvial fans. The Mohall-Carrizo-Denure Association is deep and well drained, and is moderately to moderately slowly permeable, fine to coarse-loamy soils formed in old mixed alluvium on fans, valley plains, and terraces. All, but one of the associations, are formed as part of alluvial fans, valley plains, steam channels, and terraces.

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

Permeability refers to the rate at which water moves through the soil and is usually determined by the texture of the soil. Soils with a 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. Approximately 30 percent of the soils in the Grand Avenue Corridor Planning Area pose severe restrictions for the use of septic tank absorption fields.

Available water capacity is the amount of water a soil can hold which is available for plants. The ability of soil to hold water, in part, determines the type of plants that can be used for landscaping and lawns. All of the soils in the Grand Avenue Corridor Planning Area have very low available water capacity. It should be noted that these soil limitations do not prevent the use of imported topsoil for landscaping purposes; provided, the topsoil has a high available water capacity.

Shrink-swell potential refers to the capacity of a soil to expand or shrink as the moisture content is increased or decreased. Generally, soils with a high percentage of clay have a tendency to have a high shrink-swell capacity. Soils with a high shrink-swell capacity can contribute to structural problems for buildings and roads. Soils in the Grand Avenue Corridor Planning Area do not have high shrink-swell characteristics.

Corrosivity refers to a soil's capacity to induce chemical

reactions that will corrode or weaken metals and concrete. Most soils in the Grand Avenue Corridor Planning Area are highly corrosive to steel. Soils with a high corrosivity may create potential problems for underground utilities, if installed unprotected.

The characteristics of each soil association as related to development is illustrated in **Table-2**. **Figure-2**, "Soils," illustrates the approximate location of each soil association with the planning area. Because of the locational variability of each soil type within the associations, soil testing should take place prior to actual development, particularly in an area that might contain soils which can pose severe problems for septic tank use, building, and foundation placement.

c) Topography

The Grand Avenue Corridor Planning Area encompasses portions of the Hieroglyphic Mountains to the north. Desert foothills are found around these mountains in the northeast, while desert plains are found in the remaining area. The highest point in the planning area is 2,372 feet above sea level in the mountains to the northeast, while the lowest point within the area is 1,150 feet, found along the southeastern planning area boundary.

Slope in the planning area is illustrated on **Figure-3**. The area generally slopes to the south. Slopes in the area range from less than 1 percent to greater than 15 percent. Approximately 65 percent of the area is between 0 to 2 percent, 20 percent between 2 to 15 percent, and 15 percent of the area indicates slopes of 15 percent or greater.

d) Geology

General geology within the Grand Avenue Corridor Planning Area consists of sedimentary and igneous rocks. 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.

e) Visual Features

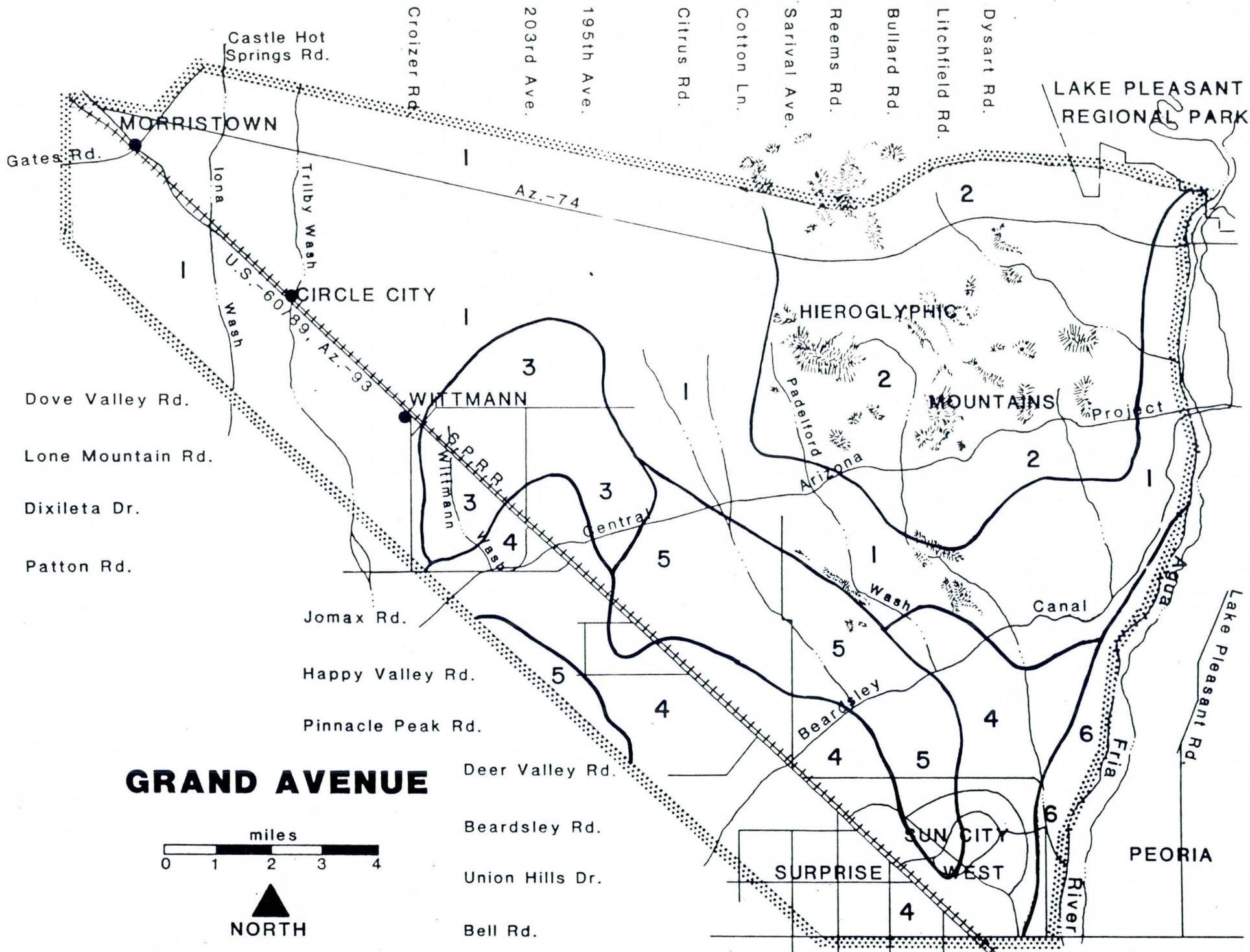
The visual character of the Grand Avenue Corridor Planning Area is dominated by views toward the surrounding mountains to the north and southwest. The Hieroglyphic Mountains to the north and the White Tank Mountains to the southwest are visible from all locations in the planning area.

Categories

- 1 Tremant-Ebon-Pinamt
- 2 Gachado-Rock outcrop-Quilotosa
- 3 Momoli-Carrizo-Denure
- 4 Mohall-Laveen
- 5 Gilman-Estrella-Avondale
- 6 Carrizo-Brios

Grand Avenue
Soil Associations

2

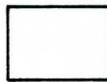


GRAND AVENUE

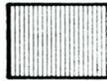


- Deer Valley Rd.
- Beardsley Rd.
- Union Hills Dr.
- Bell Rd.

Categories



0 - 1%



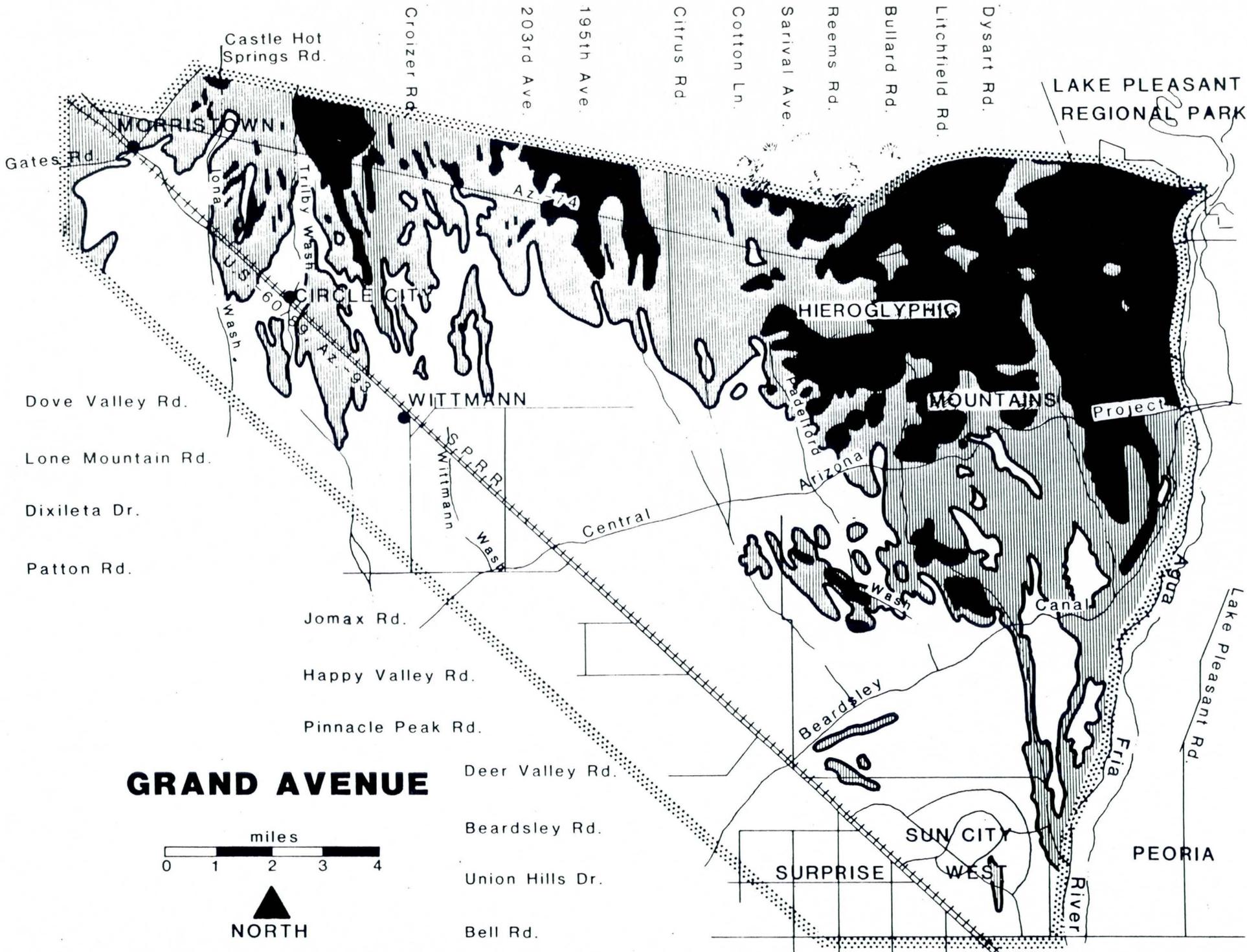
2 - 14%



15% and Greater

Grand Avenue
Slope

3



GRAND AVENUE



- Deer Valley Rd.
- Beardsley Rd.
- Union Hills Dr.
- Bell Rd.

LAKE PLEASANT REGIONAL PARK

HIEROGLYPHIC

MOUNTAINS

Project

SURPRISE

SUN CITY WEST

PEORIA

WITTMANN

MORRIS TOWN

CLE CITY

Arizona

Beardsley

Canal

Fria

River

Lake Pleasant Rd.

Castle Hot Springs Rd.

Croizer Rd.

203rd Ave.

195th Ave.

Citrus Rd.

Cotton Ln.

Sarival Ave.

Reems Rd.

Bullard Rd.

Litchfield Rd.

Dysart Rd.

Gates Rd.

Dove Valley Rd.

Lone Mountain Rd.

Dixileta Dr.

Patton Rd.

Jomax Rd.

Happy Valley Rd.

Pinnacle Peak Rd.

Deer Valley Rd.

Beardsley Rd.

Union Hills Dr.

Bell Rd.

U.S. Wash

W.B.S. Wash

S.P.R.R.

Central

Arizona

Wash

Agua

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f) Air and Noise Quality

Air quality is affected in a number of ways as a result of a variety of activities. Sources of air pollutants may be mobile or stationary. One mobile source of air pollution results from 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 topographic conditions, concentrations may 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 which comes 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.

The air quality monitoring station nearest the Grand Avenue Corridor Planning Area is located in Glendale. Because of the dramatic differences in development intensities, the air quality trends for Glendale may not be appropriate. However, if intense development occurs in the area, reduced air quality can be expected.

The effects of noise from airport and highway facilities are numerous. Noise, depending on the decibel level and the length of exposure, can affect health, disturb sleep, affect learning ability, task performance, and decrease property values. In addition, extended loud noise levels cause general community annoyance. Within the Grand Avenue Corridor Planning Area two general sources of noise have been noted. These sources are categorized as follows: 1) airport noise, such as that generated by Luke Air Force Base (AFB); and, 2) highway noise, such as that generated along Grand Avenue (US 89, SR 93) and the proposed Estrella Freeway (SR 303).

Airport noise, as noted, is generated by Luke AFB. To identify noise contours around Luke Air Force Base, the Maricopa Association of Governments completed the Westside Joint Land Use Study in May of 1988. As identified in this document, noise levels of 65 day/night sound level (Ldn) or greater do not occur within the planning area. However, there is the potential for numerous overflights in the area where some degree of noise will be noticeable.

Luke Auxiliary Field #1 is located at the intersection of Happy Valley Road and the Crosier Road alignment. This airfield is currently used very little and usually only for

emergencies. The airfield is for sale by the Department of Defense. Currently, there are little or no noise implications associated with this airfield.

Highway noise, as noted above, is generated from Grand Avenue, Bell Road and other major streets such as R. H. Johnson Boulevard. As traffic volumes increase with development, Grand Avenue, Bell Road, the Cotton Lane/Northwest Loop Freeway and other major arterial streets will begin to generate noise in excess of desired residential neighborhood noise levels. Mitigation of this problem should be addressed during development by requiring increase separation, berms, and/or walls between major arterials and adjacent residential development.

Along Grand Avenue, northwest of Sun City West, noise levels could exceed 65 Ldn as traffic volumes on the highway approach 10,000 vehicles per day. Noise generated by the traffic can be reduced to 65 Ldn or lower for distances beyond 110 feet from the highway centerline by placing 6 to 8 feet high perimeter walls along the right-of-way.

Hydrology:

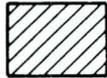
a) Surface Water

One of the flood control projects within the southern portion of the Grand Avenue Planning Area is McMicken Dam which drains east into the McMicken Dam outlet channel and then south to the McMicken Dam outlet wash, out to the Agua Fria River. Other structures located within the planning area 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.

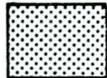
The Flood Control District of Maricopa County has completed an Area Drainage Master Study (ADMS) for the 322 square mile Wittmann Watershed. The majority of the Grand Avenue Corridor Planning Area lies within the Wittmann ADMS. The portion within the planning area bordered on the north by McMicken Dam and the east by Grand Avenue lies within the White Tanks-Agua Fria ADMS. The portion bordered on the north by McMicken Dam outlet channel and east by McMicken Dam outlet wash lies within the Lower Agua-Fria Watershed.

As part of the Wittmann ADMS, several washes and ponding areas were delineated, as illustrated on **Figure-4**. Mapped floodplains include the Trilby Wash, Iona Wash, Padelford Wash, and Wittmann Wash. Mapped ponding areas are located behind the McMicken Dam, the CAP Aqueduct, and the Beardsley Canal. At present, these floodplains are under review by the

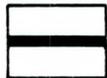
Categories



100 Year Floodplain



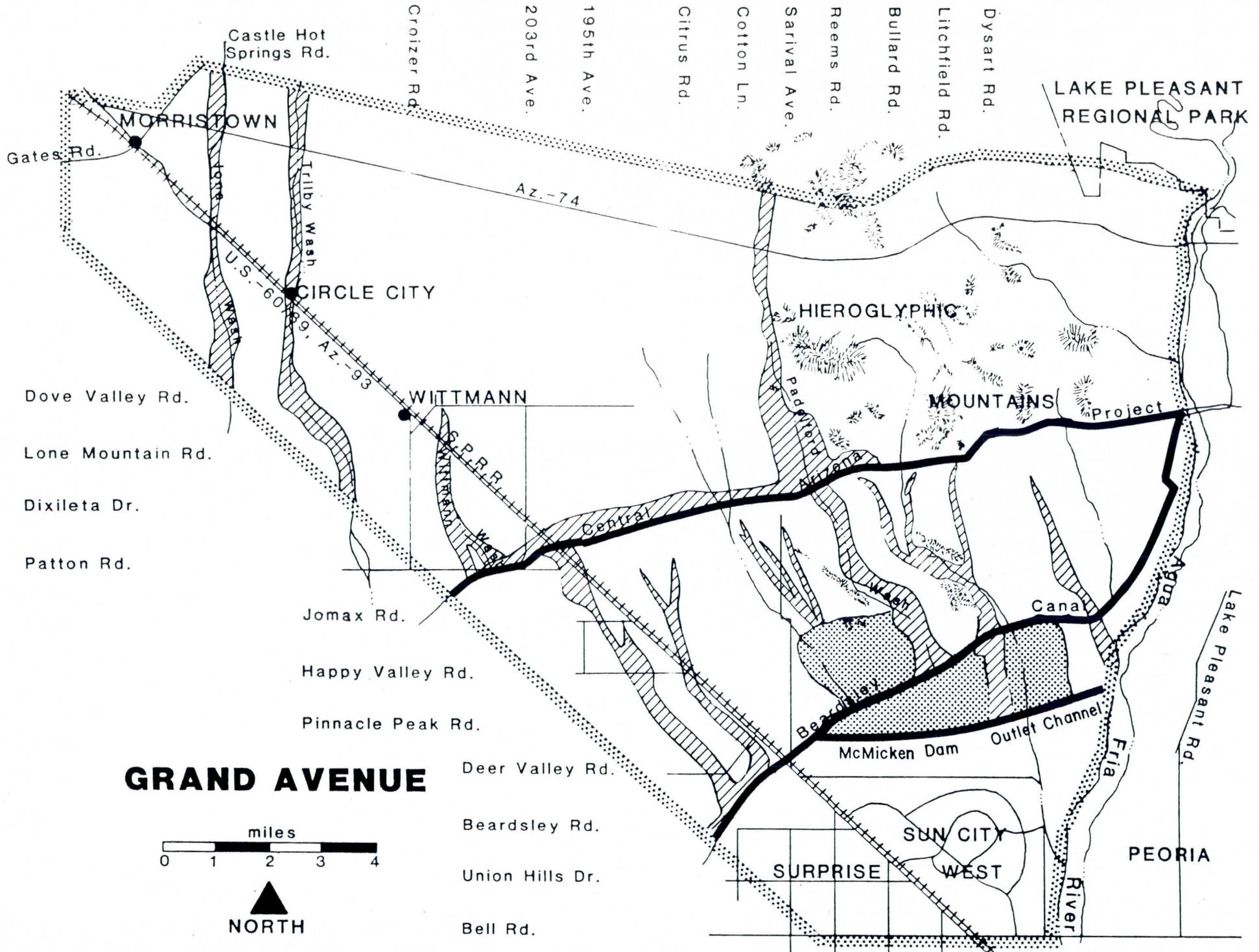
100 Year Flood Zone -
Determined by Approximate Methods



Flood Control Structure

Grand Avenue
Surface Water

4



GRAND AVENUE



- Deer Valley Rd.
- Beardsley Rd.
- Union Hills Dr.
- Bell Rd.

Federal Emergency Management Agency (FEMA). At this time, no additional flood control structures are proposed for the Grand Avenue Corridor Planning Area.

The Estrella Freeway is in the planning stage at this time. There is an alternative alignment for the proposed freeway that is located in the study area north of the Beardsley Canal between Grand Avenue and the Agua Fria River. This alignment would cross several major washes. The more likely alignment is south of the McMicken Dam outlet channel where modification to the watershed would be minimal.

b) Groundwater

Approximately 30,000 to 60,000 acre feet of recoverable water per square mile is available for most of the planning area from underground aquifers. Groundwater characteristics are shown on **Figure-5**. Depth to groundwater ranges to more than 700 feet below the surface level. During the period 1945-1977, levels declined up to 100 feet. However, levels have risen 33 feet in some places since 1977. This is due to high levels of precipitation and retirement of agricultural land in the area.

Several portions of the Grand Avenue Corridor Planning Area have groundwater quality concerns. Pesticides above allowable limits have been found in areas around Bell Road and Cotton Lane, as shown on **Figure-6**. In the northwest portion of the area, near Morrystown, sulfates have been detected above 250 milligrams per liter (mg/l) in the groundwater. Total dissolved solids exist above 500 mg/l in the northwest area and also in the Bell Road area.

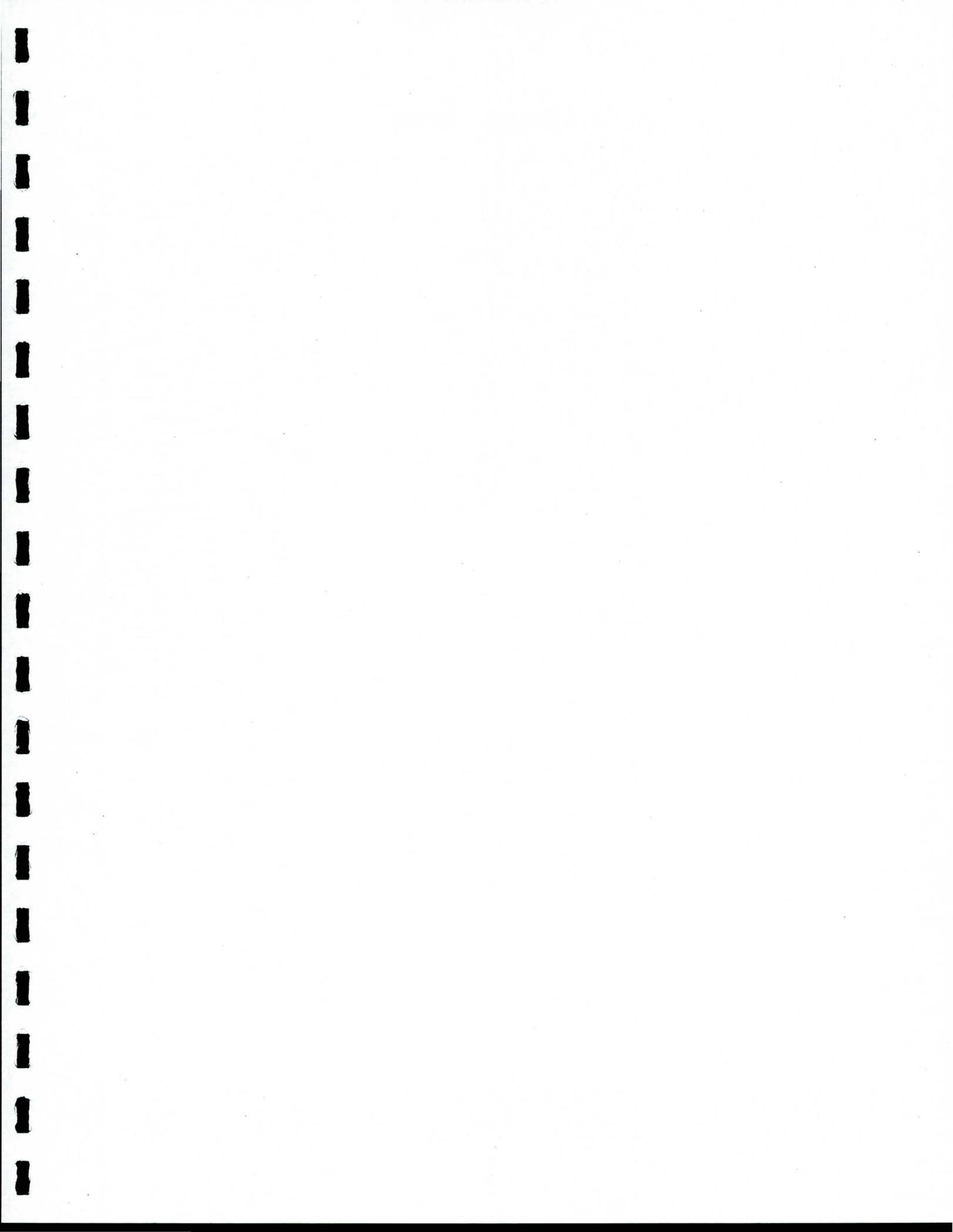
While these pollutants are not a serious threat to area development, their appearance suggests the vulnerability of the area to groundwater contamination. Land use practices and policies which effect groundwater quality in a negative manner should be discouraged.

Vegetation and Wildlife:

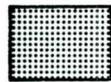
This section of the Grand Avenue Corridor Land Use Plan describes the natural vegetation and wildlife in the planning area.

a) Vegetation

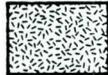
The Grand Avenue Corridor Planning Area is located within the Sonoran Desert. Two native plant communities, the Palo Verde-Saguaro Community and the Creosote Community, are found in the planning area, as illustrated on **Figure - 7**. The Palo Verde-Saguaro Community is found north of the undeveloped northeast



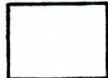
Recoverable Groundwater



30,000 - 60,000 Acre-Feet



Less Than 30,000 Acre-Feet



Rocks Containing
Only Small Amounts

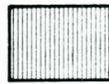


600' Depth to Water

Grand Avenue
Groundwater

5

Categories



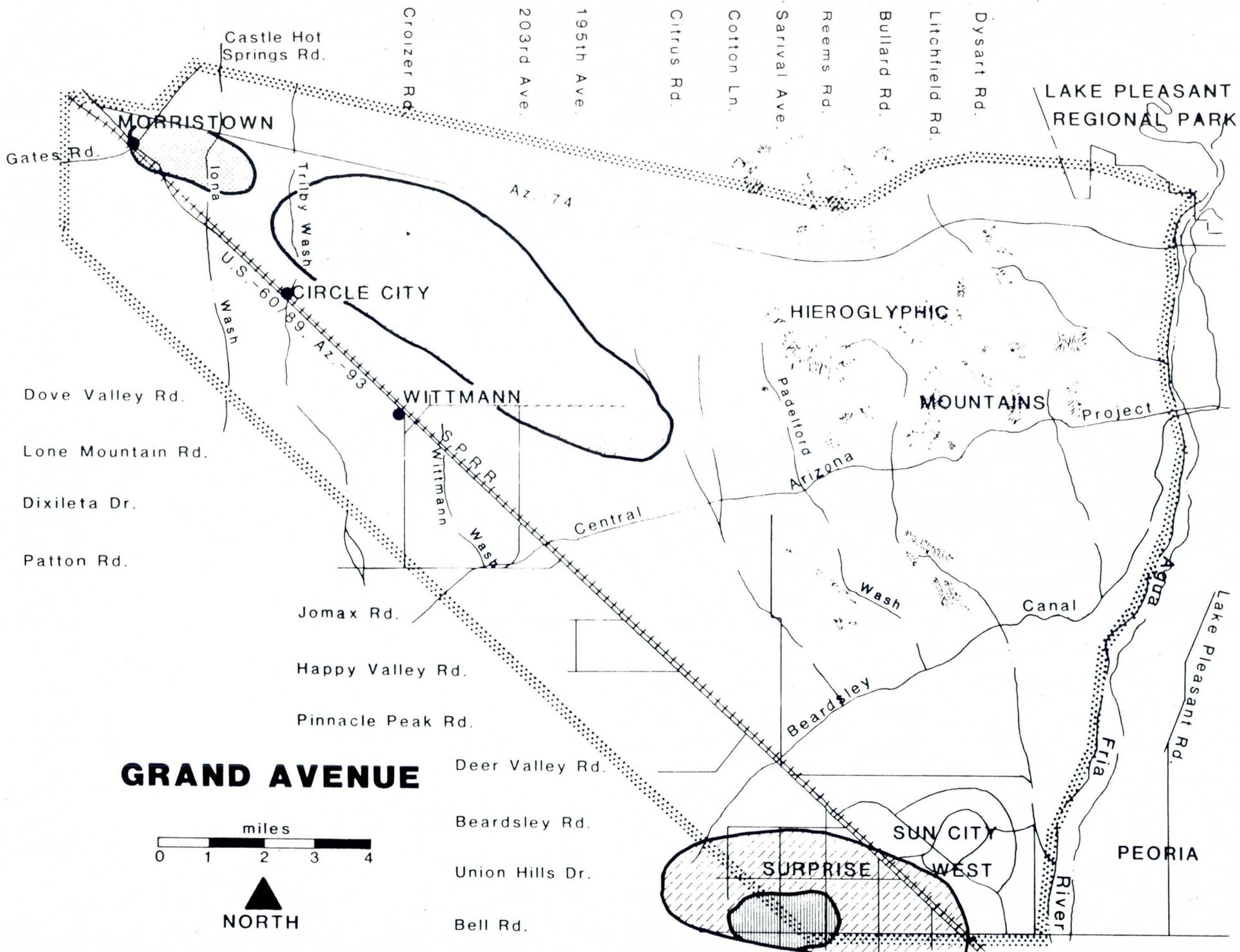
Pesticides
Greater Than Detection Limits



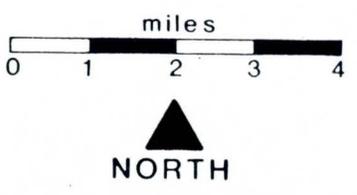
Sulfates
Greater Than 250mg/l



Total Dissolved Solids
Greater Than 500mg/l

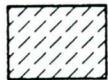


GRAND AVENUE

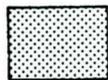


- Deer Valley Rd.
- Beardsley Rd.
- Union Hills Dr.
- Bell Rd.

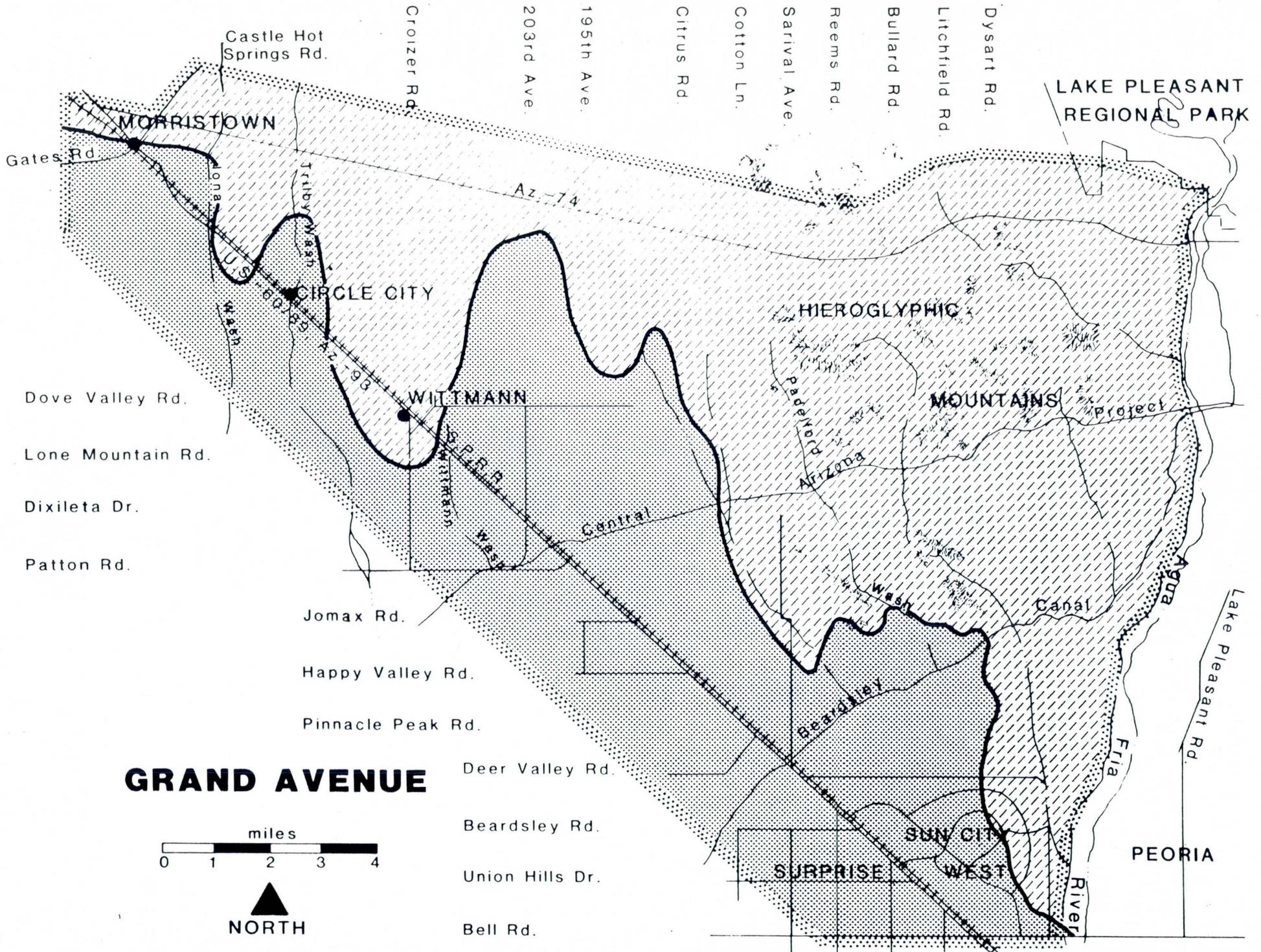
Categories



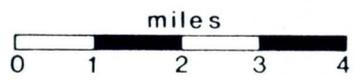
Palo Verde - Saguaro Community



Creosote Community



GRAND AVENUE



- Deer Valley Rd.
- Beardsley Rd.
- Union Hills Dr.
- Bell Rd.

portions of the planning area, and is the most scenic of the Sonoran Desert Plant Communities. The presence of this vegetative community provides for scenic opportunities which enhance the area and should be protected where possible. This community is composed of small trees such as the 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.

Higher concentrations of trees and shrubs can be found along the local drainage ways of the area. As previously mentioned, the Palo Verde-Saguaro Community is the most scenic of the Sonoran Desert Plant Communities, and therefore, highly popular for development. The soils when disturbed, however, will usually be invaded by such plants as Desert Broom and some species of Mustard.

Careful consideration should be given to all types of development so that their siting and design is consistent with the Palo Verde-Saguaro plant community in terms of building scale, density and landscaping. If developed properly, the character of the Palo Verde-Saguaro Plant Community can be retained while allowing some development.

The balance of the planning area is composed of the Creosote Community, which is considered to be the least scenic of the Sonoran Desert Plant Communities. Creosote Bush is the dominant plant of this community with Palo Verde and Mesquite Communities found along local drainage ways.

There may be plants within these two plant communities which by law, Arizona Revised Statue Chapter 7, Article 1; can only be moved from one location to another after applying for a state permit, regardless of ownership. For removal or destruction of protected species on private property, the Arizona State Agricultural and Horticultural Commission must be notified. The protected plants within this area are:

Cacti:

Barrel	Cholla	Saguaro	Mesa Verde
Beehive	Hedgehog	Prickly Pear (Opuntia)	
Night	Pin Cushion	Needle "Mulee"	
Blooming			
Cereus			

Trees and Shrubs:

Agave (Century Plant)	Flannel Bush
Desert Holly	Ocotillo
Desert Spoon	Yucca

b) Wildlife

The Grand Avenue Corridor Planning Area is composed of the typical Sonoran Desert habitat. The undeveloped mountainous northeastern portion of the planning area encourages migration of larger animals from unpopulated bordering areas. Mule deer are found in sparse densities (0.5-1.0 animals per square mile). Javelina are also found in low densities (1.0-1.5 animals per square mile) in the northeast area and sparse densities (0.5-1.0 animals per square mile) in the southern area. Mountain Lions are found in low densities (0-0.1 animals per square mile).

Important predator, small game, and non-game species are found within the planning area. These include coyotes, foxes, Cottontail Rabbits, Gambel Quail, Morning and White-winged Doves, and numerous non-game species such as raptors and migratory song birds.

The only special status species documented within the Grand Avenue Planning Area is the Desert Tortoise (*Xerobates Agassizii*). The Desert Tortoise is a candidate species on the State's "Threatened Native Species" list and is found principally in rocky foothills and less often on lower bajadas and semi-desert grasslands. The tortoise is also listed as a candidate Category Two Species on the U.S. Fish and Wildlife Service list of proposed and candidate species under the Endangered Species Act in Arizona.

The Arizona Game and Fish Department has recommended protection of desert riparian washes and restrictions of off-road vehicle activity in this planning area.

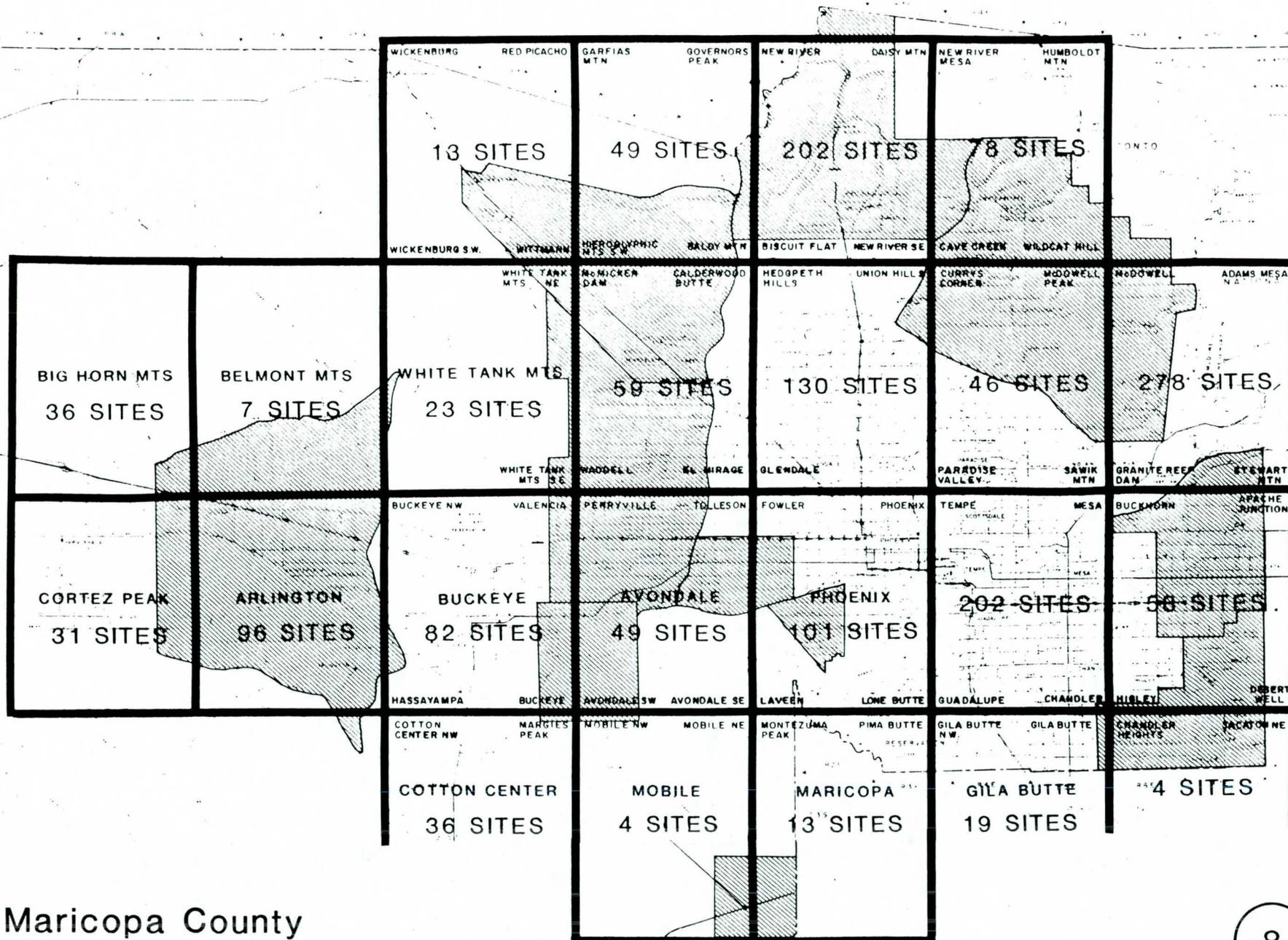
Archaeology:

Arizona, and especially Maricopa County, has one of the highest concentrations of archaeological sites in the United States and possibly the world. **Figure-8** summarizes known archaeological site frequency by U.S.G.S. quadrangles within, and surrounding, the study area. Detailed site locations are on file with the State Historic Preservation Office (SHPO) and may be confidentially examined, on a project basis, for the protection of the resource. To date, no systematic reconnaissance field survey of the County has been conducted, so we must assume that unreported cultural resources, including historic resources, exist within the study area.

Prior to development, an archaeological/historical review should be accomplished in order to determine the full archaeological potential.

Policy Implications:

This section, concerning natural resources, summarizes the key issues identified previously which should be addressed in the development of the Grand Avenue Corridor Planning Area.



Maricopa County
 Archaeological Site Frequency by U.S.G.S. Quadrangle

a) Physical Characteristics

A small portion of the soils located in the planning area are characterized by slow permeability which can limit the safe use of septic tanks. Slopes greater than 15 percent occur primarily in the mountains located in the northeast portion of the planning area.

Noise levels from nearby Luke Air Force Base and from current and future highways could reach undesirable levels.

b) Hydrology

Many flood control projects are located within the planning area.

Major drainage ways, such as the Agua Fria River, run through the planning area. These types of areas may be preserved as parks or open spaces.

c) Vegetation and Wildlife

The Palo Verde-Saguaro Plant Community exists in an undisturbed state in the northern portions of the planning area. This area should be preserved.

Special habitats for rare or endangered species exist in the planning area. These habitats should be preserved.

d) Archaeology

The possibility of numerous cultural resources exists within the planning area. The historical value of these sites should be preserved.

SOCIAL AND ECONOMIC CHARACTERISTICS

In describing the social and economic characteristics of the Grand Avenue Corridor Planning Area, the following seven sections are presented:

- Population, Age, Sex, and Ethnic Composition
- Population Projection Methodology
- Economic Characteristics
- Area-wide, Economy/Economic Base
- Residential, Commercial, and Industrial Demand
- Economic Base Potential
- Policy Implications

The purpose of this section of the land use plan is to document population and economic characteristics; to examine existing economic conditions; and to present a population projection and associated development demands for the planning area.

The 171 square mile Grand Avenue Corridor Planning Area contains the unincorporated communities of Sun City West, Wittmann, Circle City, and Morristown. Also, a portion of the planning area lies within the corporate limits of the Town of Surprise; an incorporated community.

Sun City West is a master planned retirement community. As reflected in the data which follows, Sun City West differs significantly from the remainder of the Grand Avenue Corridor portion of the planning area in terms of its social and economic characteristics. For these reasons the Grand Avenue Corridor portion of the planning area which lies outside of Sun City West is identified as the North Grand Avenue Corridor. Data is presented for this area and for Sun City West in the tables which follow.

Population, Age, Sex, and Ethnic Composition:

This section of the Grand Avenue Corridor Land Use Plan highlights historic and projected population and housing unit data to the year 2010. Comparative 1980 and 1985 U.S. Census data are also reviewed for age, sex, and ethnic distributions for the planning area and Maricopa County populations. In 1970, the population in the North Grand Avenue Corridor Area was 1,810. In the 10 year period from 1970 to 1980, the area's population increased by 114 percent to 3,883. As shown in **Table-3**, the 1985 census population for the North Grand Avenue Planning Area (unincorporated areas) was 3,797. From this, the population is projected to increase to 30,400 people by the year 2010; an increase of approximately 700 percent. In comparison, during the 1985-2010 period, Maricopa County's population is projected to increase by 120 percent.

Most of the forecast population growth within the North Grand Avenue Corridor portion of the planning area from 1985 to 2010 is projected to occur south of the Central Arizona Project Canal. The North Grand Avenue Corridor area is projected to increase its share of the planning area population from 27 percent in 1985 to 63 percent in 2010.

In the Sun City West portion of the Grand Avenue Corridor, sometime between the years 1995 and 2000 (projected buildout date), Sun City West's total population is projected to increase from a 1985 population of 10,450 to 18,490; an increase of 77 percent. By the year 2010, the population is projected to decline slightly to 17,857 (based on smaller household size.)

In 1970, there were an estimated 778 housing units in the North Grand Avenue Corridor with an average of 2.33 persons per housing unit. By 1980, the North Grand Avenue Corridor count had increased by 80 percent to 1,406 housing units. Projected housing unit increases for the resident population from 1985 to 2010 is provided in **Table-4**. Of note, is the projected decline of persons per resident housing unit from 2.83 to 2.51 in 2010. A vacancy rate of 20 percent is also projected for the area, making the occupied housing units a smaller proportion of the total planning area. The decline of persons per housing unit, as shown in **Table-5**, is primarily a reflection of a combination of smaller household size and forecast growth of a larger proportion of older persons; particularly, in the population south of the Beardsley Canal.

Table-6 indicates that the population within both the North Grand Avenue Corridor and the Sun City West portions of the planning area is older than the population within the County. The median age of the population in the North Grand Avenue Corridor is 33.5; Sun City West is 61.3; and Maricopa County is 29.7.

As shown in **Table-7**, the planning area population contains a much higher percentage of white residents than the County and a lower percentage of non-white population.

Population Projection Methodology:

Maricopa Association of Governments' (MAG) 1987 population projection methodology takes into account factors such as the distribution of current population, available land for residential development, and the location of large employment centers within Municipal Planning Areas (MPA) and Traffic Analysis Zones (TAZ).

**TABLE - 3
Total Resident Population**

Area	Census 1985	Mid-Year 1990	Mid-Year 1995	Mid-Year 2000	Mid-Year 2005	Mid-Year 2010
North Grand Ave. Corridor	3,797	3,909	4,283	14,373	23,365	30,400
Sun City West	10,450	12,440	17,315	18,490	18,174	17,857
Maricopa County	1,837,954	2,262,022	2,791,312	3,252,263	3,644,809	4,051,838

**TABLE - 4
Total Resident Housing Units**

Area	Census 1985	Mid-Year 1990	Mid-Year 1995	Mid-Year 2000	Mid-Year 2005	Mid-Year 2010
North Grand Ave. Corridor	1,678	1,743	1,945	6,623	11,268	15,113
Sun City West	7,048	8,573	12,812	13,503	13,053	13,503
Maricopa County	866,186	965,921	1,189,919	1,386,516	1,554,483	1,724,695

**TABLE - 5
Persons per Occupied Resident Housing Unit**

Area	Census 1985	Mid-year 1990	Mid-Year 1995	Mid-Year 2000	Mid-Year 2005	Mid-Year 2010
North Grand Ave. Corridor	2.83	2.80	2.75	2.71	2.59	2.51
Sun City West	1.89	1.85	1.73	1.75	1.72	1.69
Maricopa County	2.62	2.58	2.56	2.55	2.54	2.54

Source: 1985 U.S. Special Census and Maricopa Association of Governments, Transportation and Planning Office, 1987.

In allocating population through the top-down methodology, the process begins with annual updated Maricopa County population projections to the year 2015, which are prepared by the Arizona Department of Economic Security. These projections serve as control totals for the sub-County population allocations.

Prior to adoption each year, the County projections must be approved by the State Population Technical Advisory Committee, whose representatives include state agencies, state universities, MAG, the Cities of Phoenix and Tucson, and numerous Indian tribes.

With adoption of the annual County population projections in 5-year intervals (1985-1990, etc.) to the year 2015, the new population change calculated for each 5-year interval is allocated to planning areas of the County. This allocation is accomplished by applying specific planning area growth proportions, developed using the Mountain West Research-Southwest, Inc. methodology, to the population changes. The updated estimates prepared by the MAG Transportation and Planning Office are then subject to several levels of local community review.

Prior to final review, approval, and official adoption by the MAG Regional Council, a review is conducted by the MAG Management Committee and the MAG Population Technical Advisory Committee. During this review process, adjustments may be made to the projections by any jurisdiction; provided, justification is presented and accepted.

The MAG projections are not available for specific communities forming portions of the Grand Avenue Corridor planning area. The MAG projections for these unincorporated areas cover a much larger geographic region than the planning area.

The County and all communities have an opportunity to evaluate the projections made each year, and as a result population change may be closely monitored. If, on first appearance, the initial long-range projections used for planning need adjustment, they may be considered at an early date.

Economic Characteristics:

Tables-8 through 10 contrast income, education, and labor force characteristics of the planning area and Maricopa County population. As shown in Table-8, median household income in the North Grand Avenue Corridor portion of the planning area is significantly lower than in Sun City West and Maricopa County as a whole. Sun City West's median household income is considerably higher than the County average. As would be expected from the household income distribution shown in Table-8, Table-9 shows that the residents of the North Grand Avenue Corridor Planning Area have somewhat lower educational attainment levels than the planning area residents of Sun City West and those of Maricopa County.

TABLE - 6
Population Distribution by Age
and Sex in Percentages

	Male	Female	Under 5	5-19	20-44	45-65	65+
North Grand Ave. Corridor	51.1	48.9	7.8	21.2	30.3	23.1	17.7
Sun City West	46.8	53.2	<0.1	<0.1	1.3	37.9	60.8
Maricopa County	49.6	50.4	7.8	21.3	41.5	17.4	12.0

Source: 1985 U.S. Special Census

TABLE - 7
Ethnic Composition in Percentages

Area	White	Black	Native American	Other	Spanish Heritage
North Grand Ave. Corridor	91.5	0.5	0.9	7.1	14.5
Sun City West	99.5	0.3	<0.1	0.2	0.3
Maricopa County	93.3	3.2	1.4	2.2	13.2

Source: 1985 U.S. Special Census. (Note: Percentages will not total 100 percent because Spanish heritage population is distributed among other categories.)

TABLE - 8
Household Income Distribution
in Percentages and Median Income

Area	Less Than \$7,499	\$7,500 - 14,999	15,000 - 24,999	25,000 - 34,000	35,000 & over	Median Income
North Grand Avenue Corridor	35.7	26.5	19.5	11.9	6.4	11,026
Sun City West	11.9	18.1	30.0	19.1	20.9	21,418
Maricopa County	17.4	24.1	27.9	16.8	13.8	17,728

Source: 1980 U.S. Census

Table-10 shows lower civilian labor force participation rates and higher unemployment rates for the planning population, in comparison to the Maricopa County work force. This is primarily a reflection of the retirement age population base in the subarea.

Table-11 provides total employment and retail employment data for the planning area and Maricopa County. Between 1985 and 2010, more than 90 percent of the employment growth within the planning area is projected south of the Central Arizona Project Canal (CAP). As noted previously, the area south of the CAP canal is also forecast to capture the greatest amount of population growth during this period.

Area-Wide Economy/Economic Base:

With the exception of some commercial and industrial development in and immediately adjacent to Sun City West, the economic base of the approximate 171 square mile Grand Avenue Corridor Planning Area has, for the most part, not yet established itself. While a significant portion is in agricultural land use, vast reaches of the planning area remain in natural desert terrain.

The availability of water and infrastructure to support development is a major developmental hurdle. The industrial and commercial development that has occurred in the planning area, for the most part, straddles Grand Avenue (U.S. Highways 60 and 89). The Santa Fe Railroad's line which runs parallel to Grand Avenue, has not yet stimulated any significant amount of rail-served industrial growth.

In 1985, there were fewer than 4,000 residents and 30 employers in the unincorporated planning area (excluding Sun City West). Employment derived from this business base totaled 177 jobs. The inclusion of Sun City West added 10,450 residents, in excess of 100 employers, and just over 1,600 jobs bringing the totals for the entire planning area to a population of just over 14,000 people, 150 businesses, and slightly more than 1,800 jobs.

Residential, Commercial, and Industrial Demand:

The following calculations have been made using existing County-wide averages from MAG's 1988 Population and Socio-Economic Database.

a) Residential Demand

Using the projections for housing units listed in **Table-4**, 28,616 units will be in the unincorporated portions of the Grand Avenue Planning Area by the year 2010. In 1985, 8,726 housing units existed in the unincorporated portion of the planning area. Based on these figures, and assuming residential development takes place at an average density of

TABLE - 9
School Years Completed in Percentages
by Population 25 Years and Older, and by Median School Years

<u>Area</u>	<u>Years Completed</u>					<u>Median</u>
	<u>0-8</u>	<u>9-11</u>	<u>12</u>	<u>13-15</u>	<u>16+</u>	
North Grand Avenue Corridor	19.3	25.2	36.4	11.0	8.1	12.1
Sun City West	6.8	13.5	38.0	21.6	20.1	12.9
Maricopa County	12.8	12.2	34.9	21.8	18.3	12.7

Source: 1980 U.S. Census

TABLE - 10
Labor Force Characteristics of the Population

<u>Area</u>	<u>Civilians 16 & over</u>	<u>Labor Force</u>	<u>Unemployed Employed</u>	<u>Rate</u>	<u>Civilian Labor Force Participa- tion Rate</u>
North Grand Avenue Corridor	2,898	1,413	1,243	12.0%	48.8%
Sun City West	3,741	608	541	11.0%	16.3%
Maricopa County	1,128,899	701,242	663,642	5.4%	62.1%

Source: 1980 U.S. Census

TABLE - 11
Total Employment and Retail Employment

Area	Census 1985	Mid-Year 1990	Mid-Year 1995	Mid-Year 2000	Mid-Year 2005	Mid-Year 2010
TOTAL EMPLOYMENT						
North Grand Avenue Corridor	177	280	749	1,294	1,826	2,355
Sun City West	1,664	4,709	5,300	5,794	5,947	6,064
Maricopa County	905,786	1,137,083	1,423,387	1,665,769	1,873,573	2,064,683
RETAIL EMPLOYMENT						
North Grand Avenue Corridor	21	62	146	274	409	565
Sun City West	56	234	390	543	681	809
Maricopa County	64,366	217,091	277,460	319,881	362,996	405,906

Source: Maricopa Association of Governments, Transportation and Planning Office, 1987

4 dwelling units per acre, 4,973 acres of residential development will be required during the period 1985-2010.

b) Commercial Demand

Commercial land use demand is estimated based on the projected resident population increases. As noted in **Table-3**, there will be 48,257 people in the unincorporated portions of the planning area by 2010. Based on this projection, it is estimated that 489 acres of commercial development will be required. Using a ratio of 5.27 acres/1,000 people for retail trade and 4.87 acres/1,000 people for general commercial land use, 254 acres and 235 acres will be needed, respectively.

c) Industrial Demand

Demand for industrial land use is calculated using the same method used for commercial land use. Based on the resident population projection of 48,257 people by the year 2010, it is estimated that 364 acres of industrial development will be required. This assumes a ratio of 7.54 acres/1,000 people and applies only to the presently unincorporated portions of the Grand Avenue Corridor Planning Area.

Economic Base Potential:

The Grand Avenue Corridor Planning Area makes up a vast segment of north-central Maricopa County. Approximately one-third of its total land area is currently controlled by either the U.S. Department of Interior, Maricopa County Flood District, or the State Land Department.

Areas north of the CAP canal are well beyond any urban influences and there should be little, if any, development pressure in these areas until well after the turn of the century.

The major developments being planned and carried out south of the Beardsley Canal will provide many new jobs and a substantial economic stimulus to this northwest edge of the Phoenix urban area. Certainly, some additional spill-over growth is to be expected as the Phoenix metropolitan area reaches a population of 4 million by the year 2010.

While transportation access in the form of the Santa Fe Railroad, the Grand Avenue Expressway, and the Cotton Lane and Northwest Loop Projects will undoubtedly have a major impact on the area, this will, for the most part, not be felt until after the year 2010.

There are important potential impediments to growth of the area's economic base which include: (a) power costs, (b) water availability, (c) inadequate labor force compared with other regions of the Phoenix Metropolitan Area, and (d) a virtual absence of adequate infrastructure to support economic development.

Projected market trends suggest it is unlikely the economic base of the Grand Avenue Corridor Planning Area lying north of the Central Arizona Project Canal will change significantly until after the year 2010.

Policy Implications:

This section describes the key land use and zoning issues that should be addressed by the County when reviewing development projects in the Grand Avenue Corridor.

a) Economic Base

The County needs to determine the type and amount of economic development south of the CAP Canal.

b) Residential Development

Approximately 19,890 residential dwelling units are projected for the next twenty years. The County should determine what mix of residential types will occur.

c) Commercial and Industrial Development

The projected increase in commercial and industrial development will be influenced by existing and proposed infrastructure.

LAND USE AND ZONING

In describing land use and zoning in the Grand Avenue Corridor Planning Area the following seven sections are presented:

- General Pattern of Land Development
- Zoning
- Public Property Ownership
- Transportation
- Public Facilities and Utilities
- Locations of Special Development Concern
- Policy Implications

The purpose of this section of the Grand Avenue Corridor Land Use Plan is to document existing land uses and zoning regulations, to note public land ownership, and to describe transportation, public facilities and utilities in the planning area.

General Pattern of Land Development:

Figure-9, "Generalized Existing Land Use," illustrates the generalized land use pattern within the planning area. As a review of this map indicates, the majority of the area's developed land (residential in nature) is located north of Bell Road, northeast of Grand Avenue (Sun City West) and along the southwest side of Grand Avenue, between Dove Valley and Deer Valley Roads. The only major multi-family residential land uses are within Sun City West.

Commercial development has occurred at isolated locations along the south side of Grand Avenue, except at Wittmann where the commercial development is one lot deep on each side of Grand Avenue. The major commercial center in the planning area is located in Sun City West and is a retail shopping center.

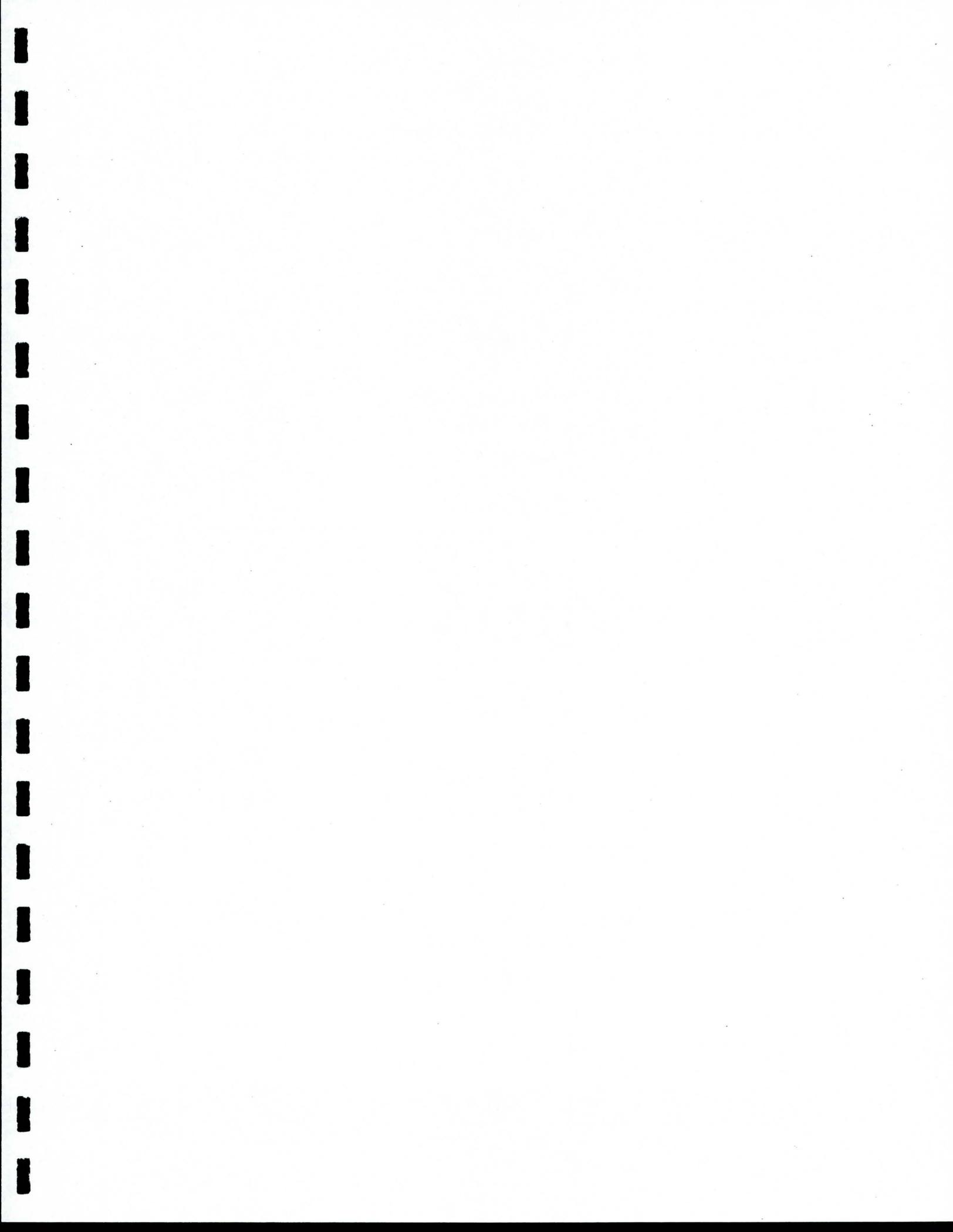
Industrial development exists at the northeast corner of Grand Avenue and Bell Road as part of the Sun City West industrial park. The only other area zoned for industrial land use is on the north side of Grand Avenue at 203rd Avenue.

The Chrysler Proving Grounds is located on 3,840 acres northeast of the community of Wittmann and is permitted as a Special Use.

The remaining portion of the planning area consists of undeveloped land left substantially in its natural state. This amounts to nearly 90 percent of the entire planning area.

Zoning:

The majority of the Grand Avenue Corridor Planning Area is zoned Rural-43: a Rural Zoning District permitting one (1) acre per dwelling unit. A portion of land north of Arizona Highway 74 is currently Rural-190 which allows one dwelling unit per 4.3 acres.



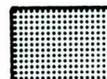
Categories



Vacant

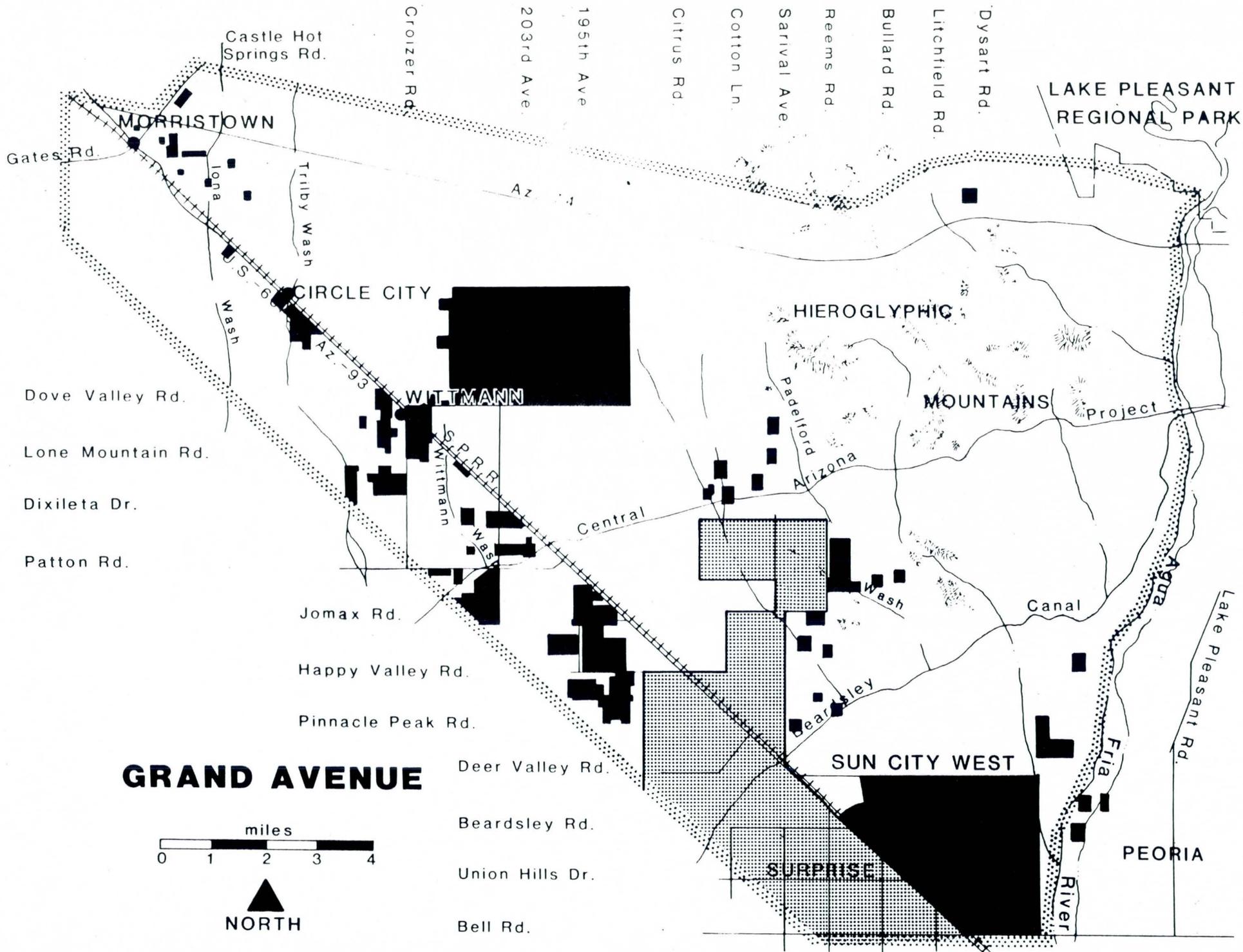


Developed



Incorporated

Grand Avenue
Generalized Existing Land Use



GRAND AVENUE

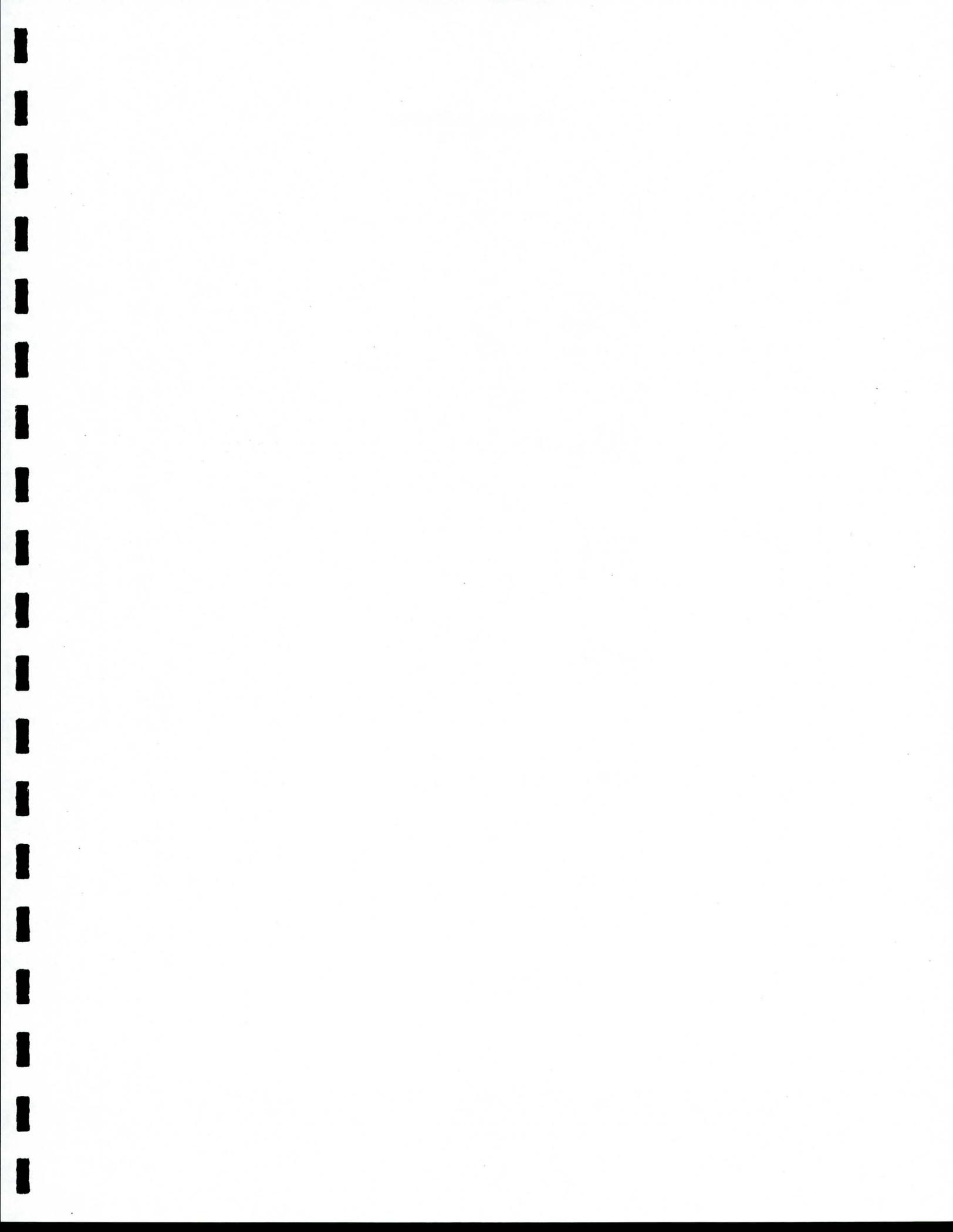


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- Union Hills Dr.
- Bell Rd.

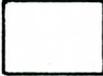
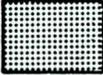
Approximately one block along the south side of Grand Avenue is zoned general commercial within the Grand Avenue Planning Area. The exception is Sun City West which is a master planned community consisting of residential, commercial, and industrial zoning districts. The majority of the existing land use conforms to the current zoning for Maricopa County.

Maricopa County enforces a zoning ordinance to regulate land development. Established zones are described in part as follows and are illustrated on **Figure-10, "Generalized Existing Zoning."**

- 1) Rural Zoning District (Rural-190):
Permitted Uses: One dwelling unit per 190,000 square feet; agricultural activities
- 2) Rural Zoning District (Rural-70):
Permitted Uses: One dwelling unit per 70,000 square feet of site; agricultural activities
- 3) Rural Zoning District (Rural-43):
Permitted Uses: One dwelling unit per one (1) acre of site; agricultural activities
- 4) Single Family Residential Zoning District (R1-35):
Permitted Uses: One dwelling unit per 35,000 square feet of site
- 5) Single Family Residential Zoning District (R1-18):
Permitted Uses: One dwelling unit per 18,000 square feet of site
- 6) Single Family Residential Zoning District (R1-10):
Permitted Uses: One dwelling unit per 10,000 square feet of site
- 7) Single Family Residential Zoning District (R1-8):
Permitted Uses: One dwelling unit per 8,000 square feet of site
- 8) Single Family Residential Zoning District (R1-7):
Permitted Uses: One dwelling unit per 7,000 square feet of site

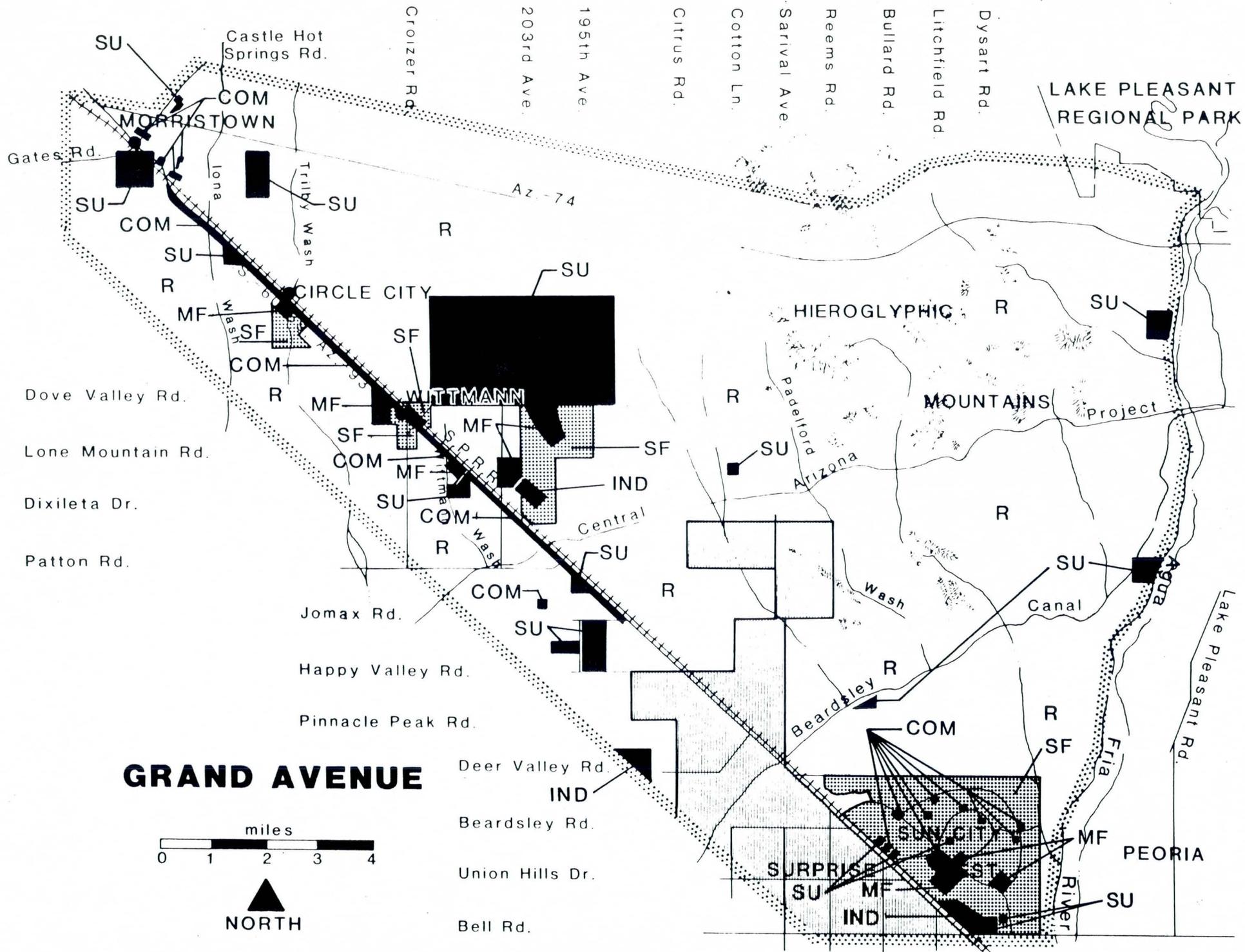


Categories

	R	Rural Residential
	SF	Single Family
	MF	Multi-Family
	COM	Commercial
	IND	Industrial
	SU	Special Use
		Incorporated Areas

Grand Avenue
Generalized Existing Zoning

10



GRAND AVENUE



- 9) Single Family Residential Zoning District (R1-6):
Permitted Uses: One dwelling unit per 6,000 square feet of site
- 10) Two-Family Residential Zoning District (R-2):
Permitted Uses: One dwelling unit per 4,000 square feet of site;
multi-family dwellings
- 11) Multiple-Family Residential Zoning District (R-3):
Permitted Uses: One dwelling unit per 3,000 square feet of site;
multiple-family dwellings
- 12) Multiple-Family Residential Zoning District (R-4):
Permitted Uses: One dwelling unit per 2,000 square feet of site;
multiple-family dwellings
- 13) Multiple-Family Residential Zoning District (R-5):
Permitted Uses: One dwelling unit per 1,000 square feet of site;
multiple-family dwellings
- 14) Planned Shopping Center Zoning District (C-S):
Permitted Uses: Retail and service businesses with a development site plan
approved by the Board of Supervisors
- 15) Commercial Office Zoning District (C-O):
Permitted Uses: Professional, semi-professional and business office
activities
- 16) Neighborhood Commercial Zoning District (C-1):
Permitted Uses: Food markets, drugstores and personal service shop
activities
- 17) Intermediate Commercial Zoning District (C-2):
Permitted Uses: Hotels and motels, travel trailer parks, restaurants, and
some commercial recreation and cultural facilities, such as
movies and art and music instruction

18) General Commercial Zoning District (C-3):

Permitted Uses: Retail and wholesale commerce and commercial entertainment activities

19) Planned Industrial Zoning District (Ind-1):

Permitted Uses: Business and manufacturing activities with a development site plan approved by the Board of Supervisors

20) Light Industrial Zoning District (Ind-2):

Permitted Uses: Light industrial activities with a development site plan approved by the Board of Supervisors

21) Heavy Industrial Zoning District (Ind-3):

Permitted Uses: Heavy industrial activities with a developed site plan approved by the Board of Supervisors

In addition to the Zoning Districts listed above, Overlay Zoning Districts, Special Uses, and Unit Plans of Development are also established to allow development which protects the environment, provides alternative housing types, and promotes age specific residential areas. These include:

1) Hillside Development Standards (HD):

To allow the reasonable use and development of hillside areas while maintaining the character, identity and image of the hillside area. These standards apply to development on slopes of 15 percent and greater.

2) Manufactured House Residential Overlay Zoning District (MHR):

To provide 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 Zoning District (SC):

To provide for planned residential development designed specifically for residency by persons of advanced age.

4) Planned Development Overlay Zoning District (PD):

To establish 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)

To permit a class of uses that are otherwise prohibited by the Ordinance.

6) Unit Plans of Development (UPD)

To provide for large scale development where variations in lot size, dwelling type and open space is warranted due to topographic or other considerations.

Public Land Ownership:

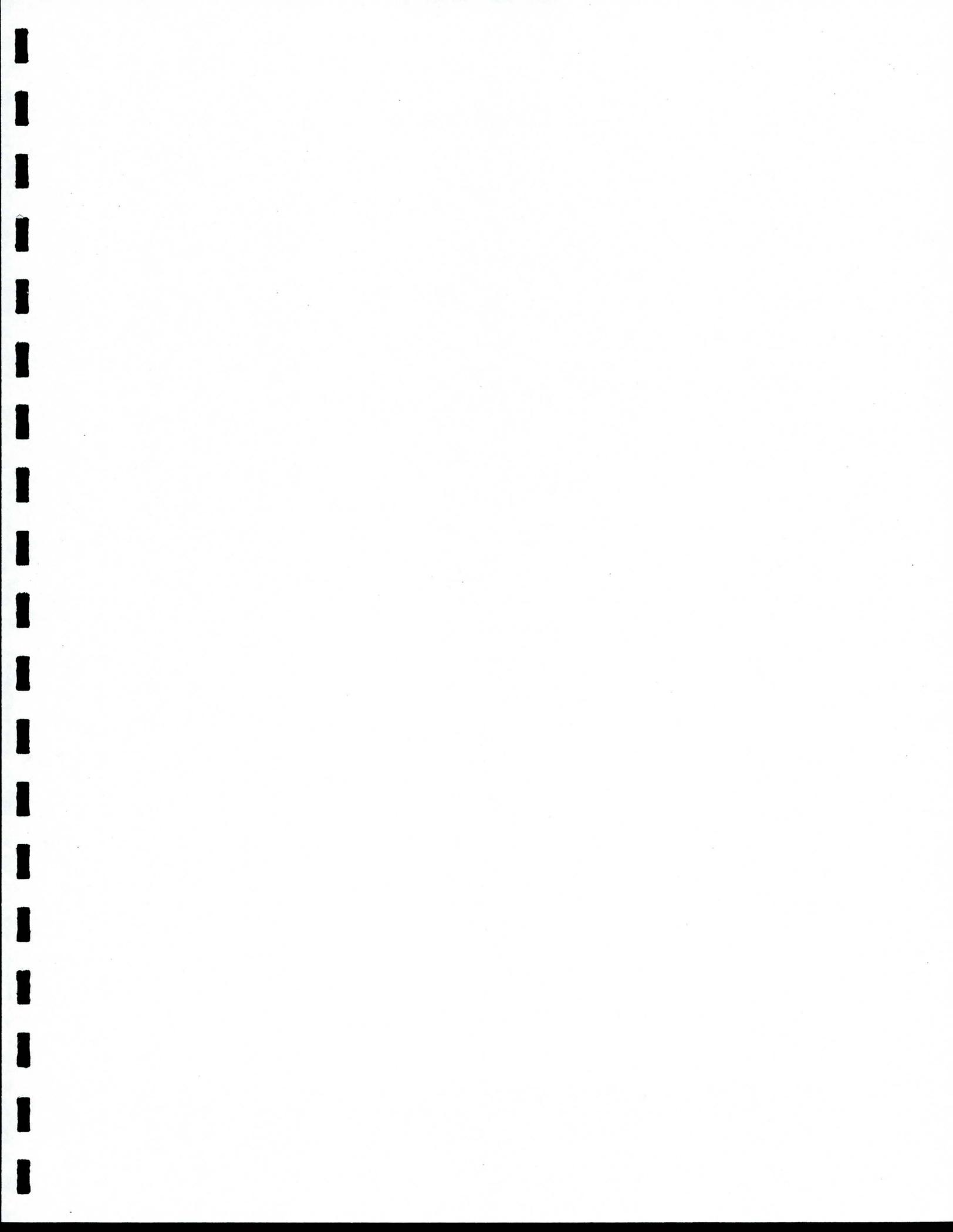
Figure-11, "Public Land Ownership", illustrates the public land ownership in the Grand Avenue Corridor Planning Area. The public landowners in the area consist of:

Federal Government
State of Arizona
City of Phoenix
Maricopa County

The Luke Air Force Auxiliary Field located just north of Grand Avenue between Sarival (163rd) Avenue and Cotton Lane is owned by the City of Phoenix. Currently, this field is not used and is vacant 95 percent of the year. Information concerning proposed plans for future use is unavailable at the present time.

There are approximately 48,480 acres (76 square miles) of State Trust land scattered throughout the Grand Avenue Corridor Planning Area. The majority of the state land is located adjacent to the north planning area boundary.

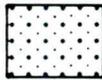
Approximately 7,950 acres (13 square miles) of land located in the northeast portion of the Grand Avenue Corridor Planning Area is owned by the federal government (Bureau of Land Management). This has recently been designated part of a Resource Conservation Area and is planned to remain in its natural state.



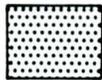
Categories



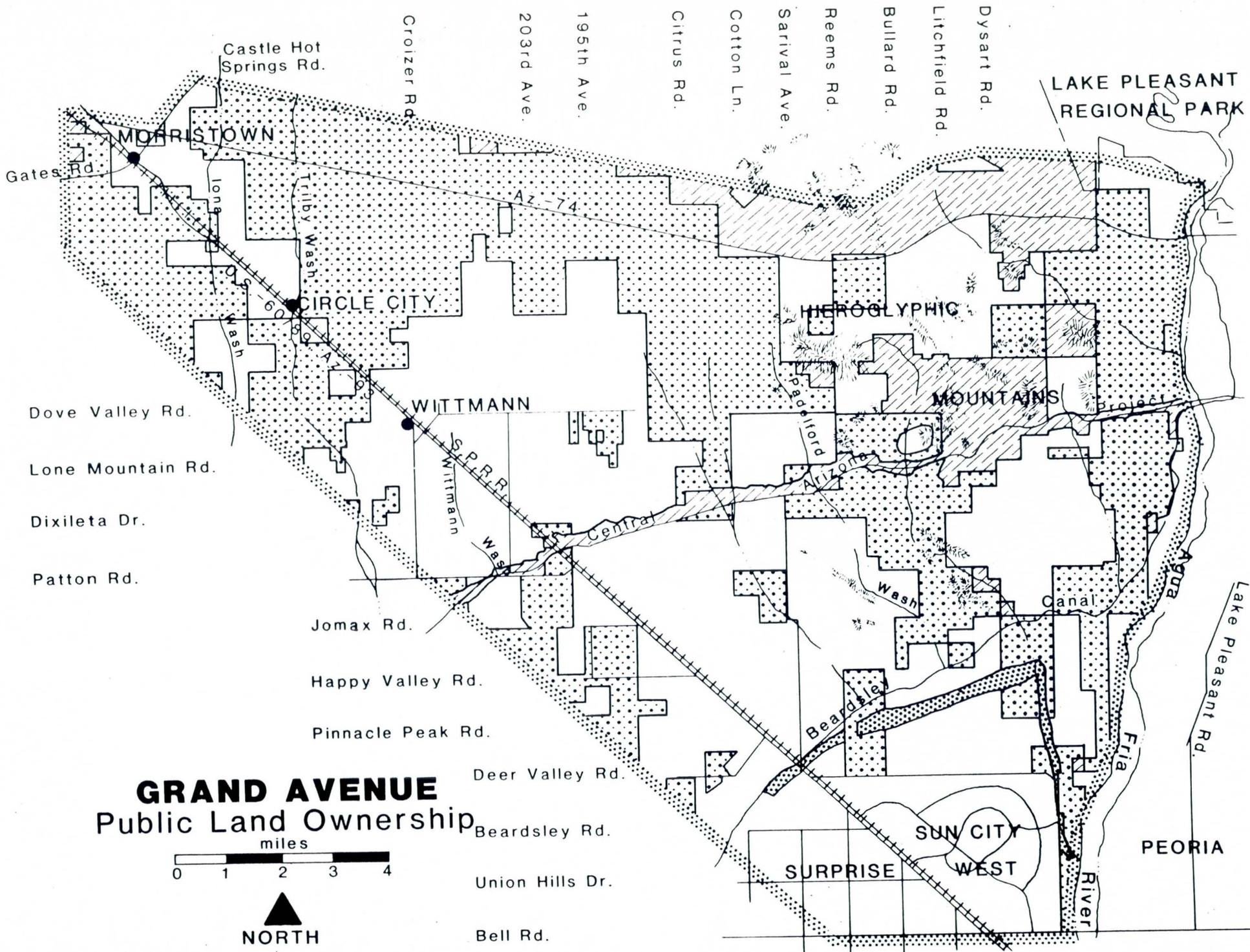
Federal



State



County



Maricopa County Flood Control District has ownership of several hundred acres adjacent to the McMicken Dam outlet channel. This land is used for flood control purposes.

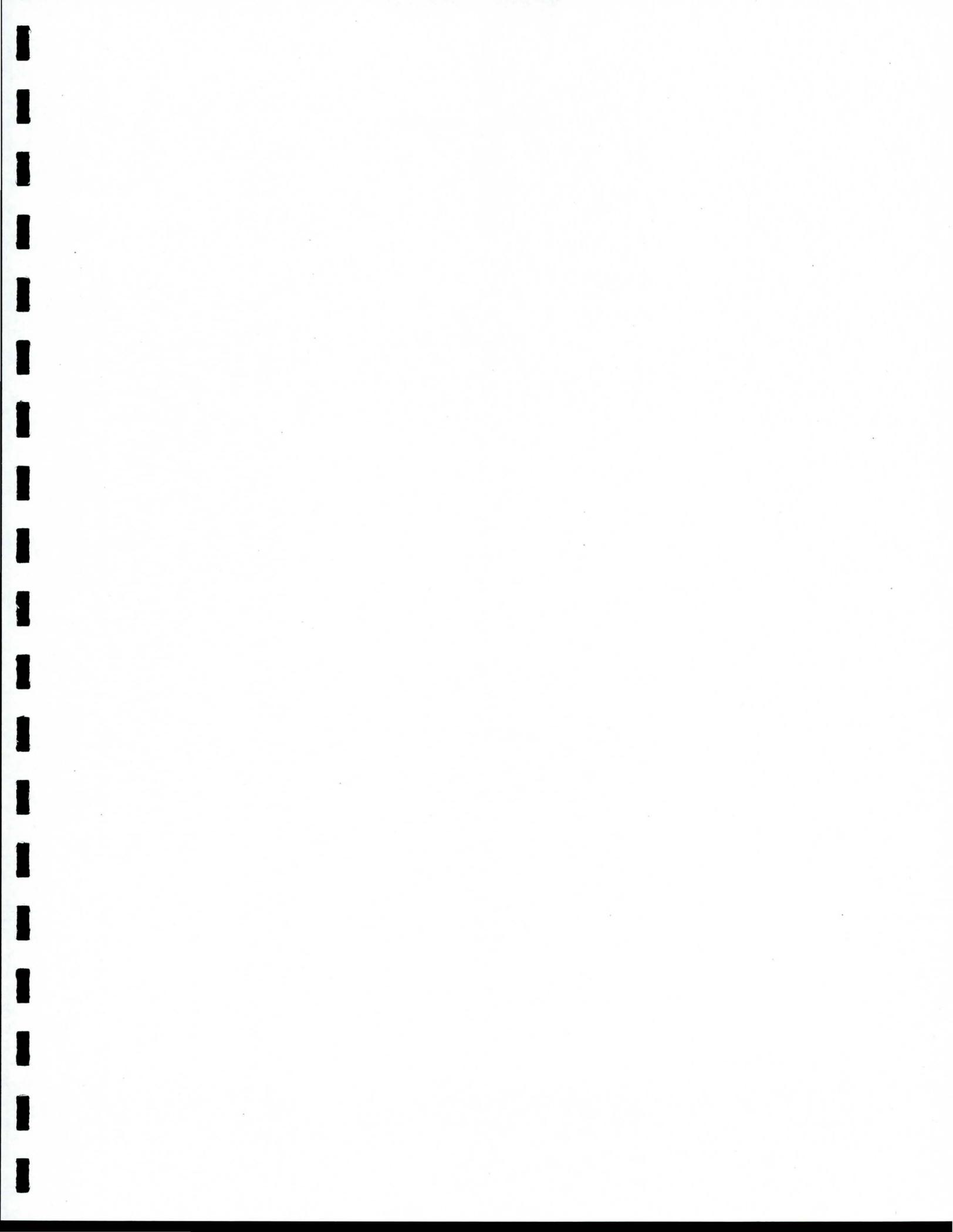
Transportation:

The existing and dedicated street/highway system is shown on **Figure-12**, "Existing Transportation Facilities." One of the existing principal arterial is U.S. Highway 89 (Grand Avenue), which provides through traffic service to Surprise, Peoria, Glendale, and Phoenix on the southeast; and to Wickenburg to the northwest. The Maricopa County Regional Freeway and Expressway Plan designates Grand Avenue as a planned expressway. The Estrella Freeway (Loop 303) is also designated for construction from Buckeye Road (SR 85) on the south, north to Grand Avenue, and then northwest to connect with the Black Canyon Freeway (I-17). Completion of this project is scheduled for sometime after the year 2005. Grand Avenue, from the Agua Fria Freeway (southeast of the planning area) to the Estrella Freeway, is scheduled for limited improvements in the near future.

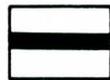
a) Freeways

In the functional classification hierarchy of streets, freeways are at the top, serving through traffic for regional and/or inter-city travel. Implementation of the proposed regional highway network is to enhance accessibility by people in the Grand Avenue Corridor Planning Area to the balance of the Phoenix Metropolitan Region. The shorter travel times will make the area more attractive for development. Land use planning and zoning regulations must be exercised to ensure that new development and new roadways will be compatible and that traffic service can be provided without impairing the efficiency of the freeway system. In particular, new residential uses, which are noise sensitive, should be permitted only at a safe distance from the freeways (as determined by specific studies) or noise protection provided by developers in the form of continuous berms/walls to prevent future incompatibility problems.

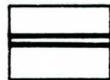
Frontage roads should be considered to parallel the freeway corridors where development is proposed to provide circulation without access to the freeway. These roadways not only provide traffic service to adjacent developments, but also provide access for shorter trips (i.e., less than three miles) to discourage unnecessary freeway use. Frontage roads also re-establish some of the local street system continuity which is interrupted by an controlled access roadway.



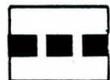
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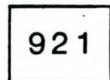
Arterials



Highway

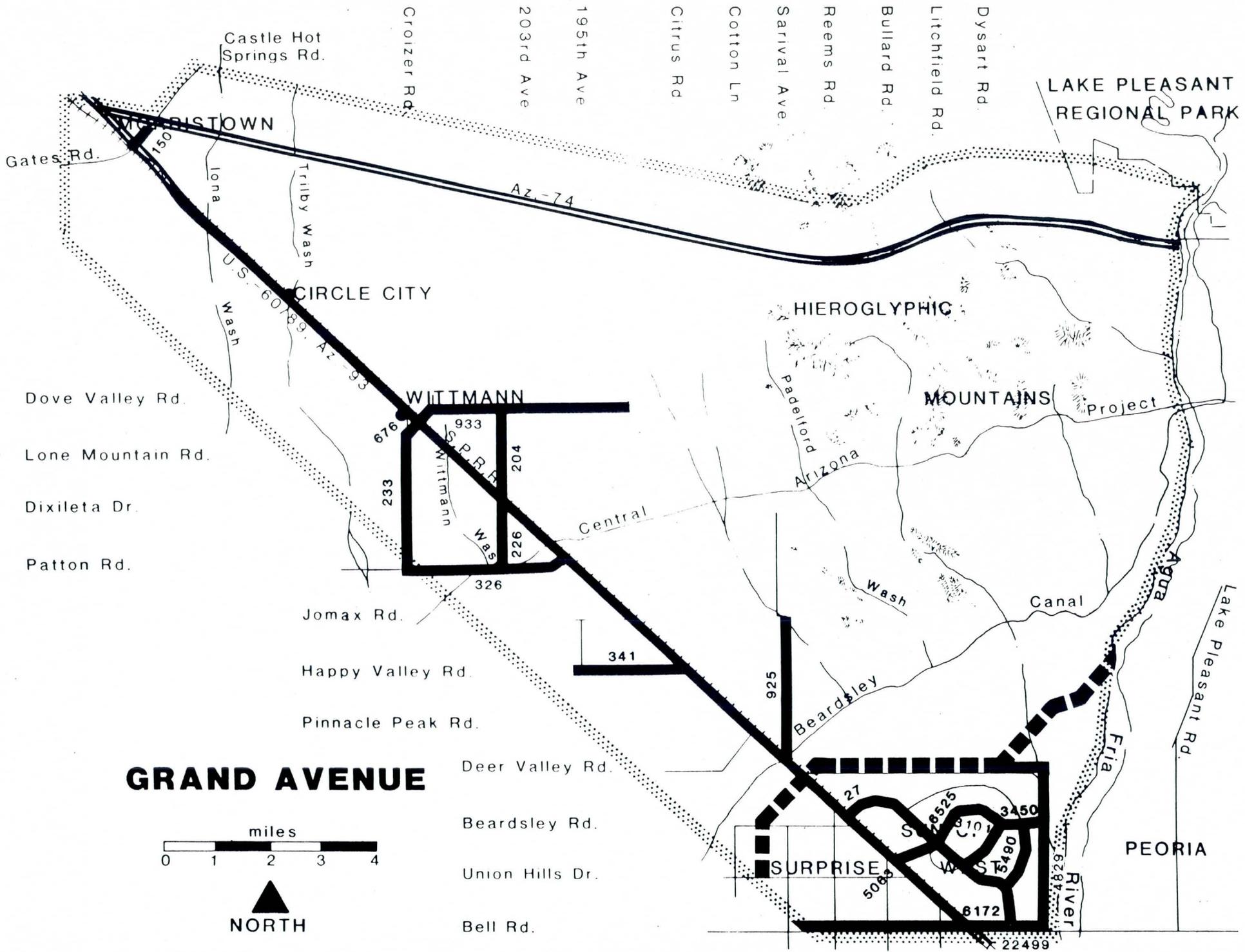


Future Freeway Corridor

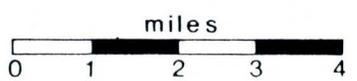


Average Daily Traffic Count Arterials

Grand Avenue
Existing Transportation Facilities



GRAND AVENUE



- Croizer Rd.
- 203rd Ave
- 195th Ave
- Citrus Rd
- Cotton Ln
- Sarival Ave
- Reems Rd
- Bullard Rd
- Litchfield Rd
- Dysart Rd
- Gates Rd.
- Dove Valley Rd.
- Lone Mountain Rd.
- Dixileta Dr.
- Patton Rd.
- Jomax Rd.
- Happy Valley Rd.
- Pinnacle Peak Rd.
- Deer Valley Rd.
- Beardsley Rd.
- Union Hills Dr.
- Bell Rd.

LAKE PLEASANT
REGIONAL PARK

HIEROGLYPHIC

MOUNTAINS Project

Padelford
Arizona

PEORIA

SURPRISE

River

Lake Pleasant Rd.

Fria

Canal

Wash

Beardsley

Central

WITTMANN

CIRCLE CITY

MESQUITE

Castle Hot
Springs Rd.

Lone Wash

Trilby Wash

U.S. - 60

AZ-74

AZ-93

676

933

204

233

Wittmann

Wash

226

326

341

925

21

S 76525

3101

3450

W 3101

S 3490

3101

229

87

22499

6172

5085

b) Arterials

The primary function of arterial streets is to provide traffic service for large areas. Access to adjacent property is a secondary function.

State Route 74 provides through traffic service across the northern portion of the planning area from I-17 on the east to U.S. 89 at Morristown on the west. This route provides access to Lake Pleasant Regional Park, which will increase as a recreational attraction with area-wide growth.

Patton Road/219th Avenue (Crozier Road)/Dove Valley Road serve the area around Wittmann. The realigned 90 degree intersection with U.S. 89 near Wittmann should be used as a prototype to minimize intersection geometric problems (non-perpendicular intersections) with Grand Avenue.

Deer Valley Drive and R. H. Johnson Boulevard serve as outer and inner loops, respectively, for Sun City West. Both loops connect with Grand Avenue (U.S. 89) on the southwest and Bell Road on the south. The geometrics of the Deer Valley Drive/Grand Avenue intersection should be improved with a realignment of Deer Valley Drive because they don't intersect at a 90 degree angle, which is preferable from a street design standpoint.

Additional arterials will have to be provided with future development. A 110 foot right-of-way is usually secured by Maricopa County by requiring adjacent property owners to dedicate 55 feet of their frontage from the centerline at the time of rezoning. The practice minimizes costly right-of-way purchases and should be continued.

c) Collector Streets

Collector streets provide the connection between local streets (which provide property access) and arterial streets (which provide traffic service).

In the Sun City West development the collectors are connector type curvilinear streets like Meeker Boulevard and Stardust Avenue. In the more rural areas, collectors are generally on a one mile or half mile spacing and follow section lines and mid-section lines.

d) Public Transit Service

Currently, there is no regularly scheduled public transit service to the planning area. Within the Sun City West area, the Sun City Area Transit (SCAT) operates. Funded, in part, through the Regional Public Transportation Authority (RPTA), SCAT is a demand responsive service which also serves Sun City and Youngtown.

Outside of these developments, population densities are insufficient to support service beyond carpool matching assistance which is already provided by Regional Ride-Share, a service of the Maricopa Association of Governments (MAG).

e) Bicycle/Pedestrian Facilities

No bicycle facilities and few sidewalks exist in this planning area. Adequate paved shoulder area could be provided beyond the travel lanes along arterial and collector routes to accommodate pedestrian and bicycle activity.

Public Facilities and Utilities:

The Public Facilities and Utilities section is an overview of the various public and semi-public utilities, public safety facilities and semi-public facilities in the Grand Avenue Corridor Planning Area. This section is presented in six sub-sections:

- Water Distribution System
- Sanitary Sewer System
- Educational Facilities
- Sheriff's Department
- Fire Department
- Health Care Facilities

The purpose of this section of the land use plan is to inventory and document present conditions, and use of community facilities and services. Assessment of the various community facilities and services presented is not intended to be an in-depth operation or program evaluation, but rather an overview of existing physical plants in terms of how they currently, and can in the future, support increased development.

a) Water Distribution System

This section discusses the water distribution system within the Grand Avenue Corridor Planning Area. Water is provided by local water companies which have groundwater rights.

Domestic Water Supply

Domestic water for the Grand Avenue Corridor Planning Area is supplied by the following water companies and illustrated on **Figure-13**, "Existing Public Facilities and Utilities:"

- Lake Pleasant Water and Sewer Company
- Morristown Water Company
- Consolidated Water Utilities Ltd.
- Chaparral Water Company
- Beardsley Water Company, Inc.
- Citizens Utility Company
- Turner Ranches Water and Sanitation Company
- Sun City West Utilities Company
- Cool Well Water Company
- West End Water Company
- Puesta del Sol Water Company
- Sun City Water Company

The majority of the planning area's domestic water supply is pumped from the aquifer beneath the Grand Avenue Corridor Planning Area and surrounding areas. Central Arizona Project water will be used to a much greater extent in the future as demand for water increases. Domestic water quality in most areas of the Grand Avenue Corridor Planning Area appears to be good and free of contamination. Tests are conducted periodically by the water companies to test the quality of water being extracted from local wells. In addition to these tests, chemical analysis tests, as required by the State of Arizona, are conducted on a three year basis.

Agricultural Water Supply

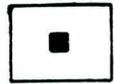
The Grand Avenue Corridor Planning Area has very little agricultural activity. The majority of agricultural land receives water from the Maricopa Water District, which obtains its water from Lake Pleasant via the Beardsley Canal and from groundwater in emergency cases.

Future Water Supply Alternatives

As the population grows in the Grand Avenue Corridor Planning Area, the majority of the water companies plan to activate a number of presently unused wells to supplement groundwater resources. In addition, the water supply will be supplemented by allocations from the Central Arizona Project, especially in incorporated areas.



Categories



School



Fire Station



Post Office



Landfill Transfer Station



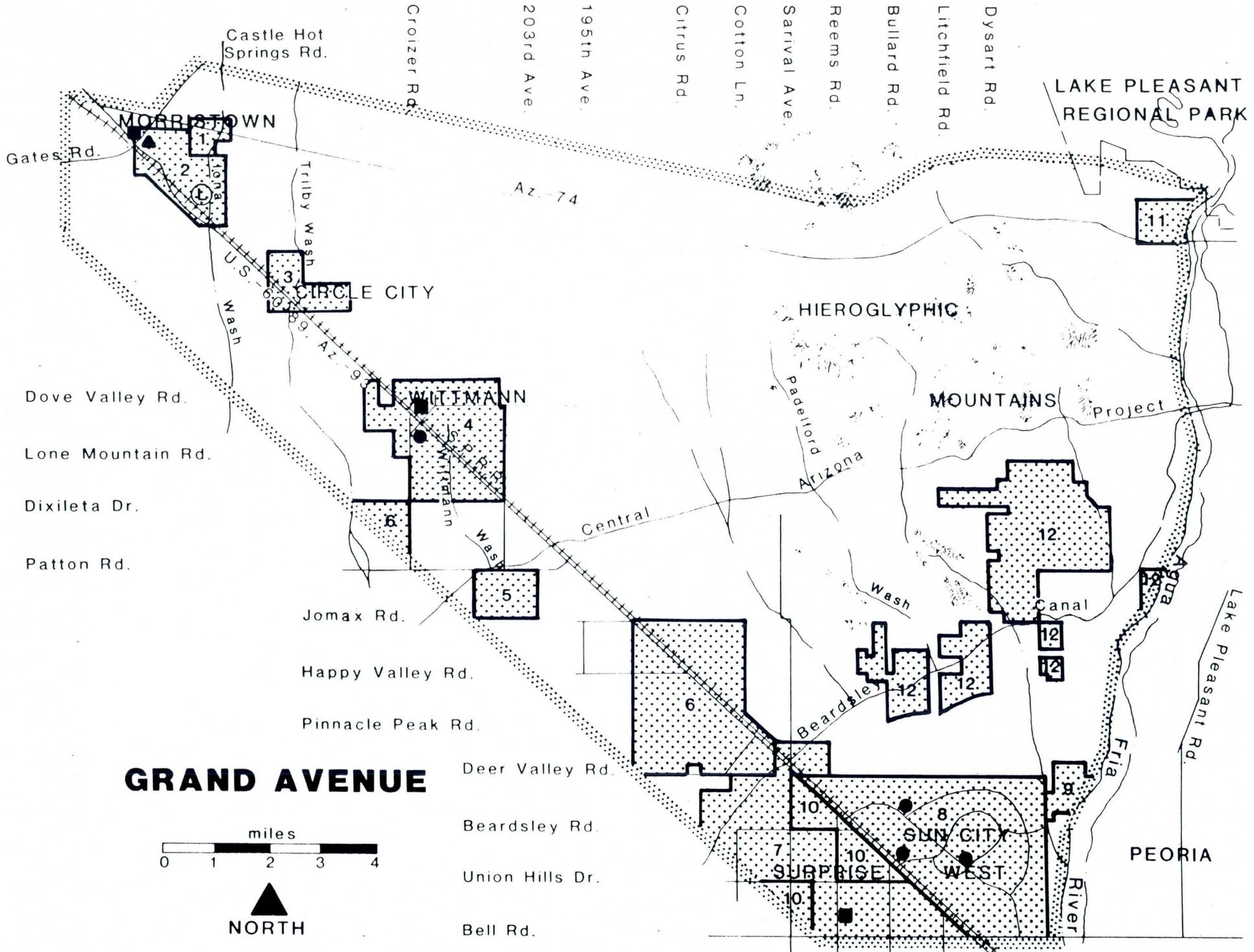
Water Company Service Area

Water Companies

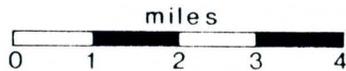
- 1 Puesta del Sol Water Company
- 2 Morristown Water Company
- 3 Consolidated Water Company
- 4 West End Water Company
- 5 Chaparral Water Company
- 6 Beardsley Water Company
- 7 Citizens Utilities Water Company
- 8 Sun City West Water Company
- 9 Cool Well Water Company
- 10 Turner Ranches Water & Sanitation Company
- 11 Lake Pleasant Water & Sewer Company
- 12 Sun City Water Company

Grand Avenue
Existing Public Facilities and Utilities

13



GRAND AVENUE



b) Sanitary Sewer System

Existing Sanitary System

The Grand Avenue Corridor Planning Area is served by a sanitary sewer system and individual septic tanks. The sanitary sewer system is operated by the Sun City West Utilities Company and is approximately 8 years old. This system is in adequate physical condition and there is no need to expand the existing system. Approximately 8 major lines serve the Sun City West area with numerous lateral and local collector lines connected to these major lines. All wastewater collected by the Sun City West Utilities Company's sewer network is transferred to the wastewater treatment plant located at 11102 Rose Garden Lane, Sun City West.

Except for an area of Turner Ranches located in the Town of Surprise, the rest of the planning area uses individual septic tanks. Currently, there are no known contamination problems with septic tank use.

Improvement to the Existing Sanitary Sewer System

As mentioned earlier, the overall sanitary sewer system of the Grand Avenue Corridor Planning Area is in adequate physical condition and no major mainline rehabilitation is required. The majority of the lateral and collector lines through the area are not overloaded and no rehabilitation of these sections of the system is required.

c) Educational Facilities

There are 3 school districts located within the planning area. These are Morrystown Elementary, Nadaburg Elementary, and Dysart Unified. The Nadaburg Elementary School is located at 32919 Center Street, Wittmann, and provides educational services for grades kindergarten through eighth. As of April 1989, total enrollment for Nadaburg Elementary was 430 students. Still under construction is the Kingswood Elementary School located just north of Bell Road between Bullard and Reems Avenue on Mondale Street. Kingswood Elementary School is located in Dysart Unified School District. Morrystown Elementary School, located in Morrystown, is the only other school located within the planning area. Presently, there are no plans for either new construction or expansion.

d) Sheriff's Department

The Maricopa County Sheriff's Department, located at 102 West Madison Street, in downtown Phoenix, serves the unincorporated areas in Maricopa County. Presently, the Sun City West Substation, located at 13063 West Bell Road, serves Sun City West and the area outside of Sun City West. Burglaries are the major problem concerning crime

in the Grand Avenue Corridor Planning Area. This is due to the large distances between many of the homes, providing minimal deterrence to criminal activity.

e) Fire Department

The Rural Metro Fire Department provides fire and ambulance services to the unincorporated areas in the County on a contract basis. Rural Metro Station 36, located at 19001 Camino Del Sol, Sun City West, is open and operated by the Fire District of Sun City West. The station is manned by Rural Metro Fire Department under contract. A County engine is assigned to this station for response to areas within ten miles. A second station for the Fire District of Sun City West is proposed for the northwest corner of R.H. Johnson and Stardust Boulevard. The proposed completion date is late 1990. The Wittmann Fire District at the corner of Harding and Center Streets in Wittmann serves the North Grand Avenue Corridor planning area.

Station 36, in Sun City West, operates with a staff of 5 full-time firefighters and one part-time fire fighter on a 24-hour shift basis. The facility is equipped with two (2) engine tankers and one (1) pumper. A response time of less than 5 minutes is provided by Station 36. The fire district of Sun City West was awarded an ISO rating class of five in 1988. The Wittmann Fire District operates with a staff of 20 volunteer firefighters on a 24-hour basis. The facility, equipped with four (4) tankers and one (1) pumper provides a response time of less than 8 minutes. As the area grows, fire protection will have to be examined, especially in the outlying portions of the planning area.

f) Health Care Facilities

The Del E. Webb Memorial Hospital, located in Sun City West, provides a full range of medical services including emergency and extended care facilities to surrounding residents. Boswell Memorial Hospital, located in Sun City, also serves residents in the planning area.

Location of Special Development Concerns:

Three areas in the Grand Avenue Corridor Planning Area will receive special attention as the Land Use Plan is developed. These areas are:

The Wickenburg Highway Scenic Corridor
The Area South of the Central Arizona Project Canal
Highway 74 Scenic Corridor

These areas are, or will become, areas of intense development pressure and currently exhibit a number of functional and/or aesthetic concerns. The major land use and development patterns, as well as particular issues of concern for each of these locations, are described as follows:

a) Wickenburg Highway Scenic Corridor

Adoption of the Grand Avenue Corridor Plan in March, 1988, called for special studies along Grand Avenue. The Wickenburg Scenic Corridor was established and designated as that area two miles on either side of the Wickenburg Highway (U. S. Highway 60-89, State Highway 93) from Bell Road to the Town of Wickenburg. The Corridor is approximately 34 miles in length, but the northern 10 miles of the corridor is outside of the Grand Avenue Corridor Plan. On July 1, 1991, the Maricopa County Board of Supervisors adopted the Wickenburg Highway Scenic Corridor Development Guide and Technical Report. This Plan is the result of a two-year study of the Wickenburg Highway Scenic Corridor Study Committee and the Maricopa County Planning and Zoning Commission. It represents the coordinated efforts of governmental agencies, land owners, developers and area residents.

The majority of the Corridor is undeveloped and only a few miles of the Highway could be considered developed, or urban at this time. Urban development is slowly approaching this corridor, spreading outward from Phoenix and Wickenburg bringing with it commercial and industrial uses along the highway. Preservation of the natural desert environment is of primary importance in maintaining a scenic corridor. The natural environment in the Wickenburg Highway Scenic Corridor adds to the quality and character of the area.

The Wickenburg Highway Scenic Corridor Development Guide contains the recommended guidelines and standards for new development within the Corridor. Included is a statement of goals and policies that will direct and ensure orderly development along the corridor. The generalized Land Use Plan within the Development Guide encourages development which will enhance the scenic environment of the Corridor. The Land Use Plan designates five land use classifications for the location of commercial and industrial centers, as well as urban and rural residential development.

Also included in the Development Guide is the Traffic Circulation Plan, a vital part of the Scenic Corridor Plan. The Traffic Circulation Plan encourages a highway design that will compliment the scenic qualities and provide for efficient and safe highway usage.

The Wickenburg Highway Scenic Corridor Overlay Zoning District, also part of the Development Guide, is the proposed method of implementation for the Scenic Corridor. It divides the study area into four classes according to location and physical features along the Scenic Corridor. Standards for development in the Zoning District Overlay will encourage orderly and sensitive development within the Corridor, maintain the scenic beauty that now exists along the Highway and improve the economic, social and physical living environment for the residents within the Scenic Corridor.

The coordination of development along the highway will prevent land use conflicts and encourage compatibility for future uses. The Land Use Plan will allow urban growth south of the Beardsley Canal, while providing for uses more rural in nature north of the canal to Wickenburg. The benefits derived from orderly development, as opposed to urban sprawl and leap frog, will benefit the County, surrounding jurisdictions and residents with reduced costs for infrastructure and other public services.

b) **Area South of the Central Arizona Project**

As growth continues in this area, the lack of infrastructure will be a major problem. Large tract, low density housing has been the major type of development to date. This, unfortunately, leads to higher cost for public services and utilities. Land use will have to be closely monitored as this area develops with urban intensity to insure that the necessary support facilities; especially, sewer, water, police, and fire protection are adequate to serve the development.

c) **Highway 74 Scenic Corridor**

Maricopa County recognizes the importance of preserving the scenic beauty of properties near and along Highway 74, between the community of Morristown and Lake Pleasant. Much of this area includes viewsheds of the Hieroglyphic Mountains and the Palo Verde-Saguaro Vegetative community. This unique natural resource area supports many diverse plant and animal species.

Future development in this area should incorporate environment protection measures through the development planning process. Development proposals in this scenic and environmentally sensitive area should address the following environmental resource issues and Maricopa County should move forward to study and formally adopt specific development standards which incorporate these issues:

1. **Scenic Character**

Address methods by which proposed development along the Highway 74 Corridor can incorporate and preserve the visual character of the natural desert landscape, (for example; drainage features, arroyos, riparian areas, streams, ponds, springs, steep slopes, and existing topography). This may include, but not be limited to building location, colors and materials; grading location, design and treatment; and landscaping materials proposed.

2. **Natural Desert Vegetation**

Identify and address significant vegetative communities on the site and methods by which they can be retained and incorporated into the development, i.e.

minimization of grading and draining, plant surveys, landscaping programs including revegetation, and proposed deed restrictions addressing these issues.

3. **Wildlife**

Identify animal species on the site and any significant densities of wildlife by species. Address possible impacts to animal species and habitats.

4. **Significant Environmental Features**

Identify and address significant vistas and views and environmental features on the site and methods by which they can be protected in the process of development. Significant environmental features may include, but not be limited to, major rock outcrops and boulder features, vistas and views, peaks, ridgelines and archeological conditions.

Pending adoption of specific guidelines, the issues as stated above and approved by the Board of Supervisors shall be utilized for evaluation of proposed development in the area.

Policy Implications:

This section describes the key land use and zoning issues that should be addressed by the County when preparing the Land Use Plan policies and the Land Use Plan in the Grand Avenue Corridor Planning Area.

a) **Land Use**

A mix of various types of land use resulting in a balanced use of the area's resources should be encouraged.

All urban development within the Grand Avenue Corridor should be encouraged to provide urban services to the respective development; i.e., sewer, water, schools, fire protection.

Preservation of significant desert vegetation, wildlife habitat and scenic vistas along Highway 74 should be encouraged.

b) **Zoning**

Maricopa County should discuss deletion of the strip commercial zoning along Grand Avenue.

c) Transportation

Expressway improvements for Grand Avenue should be encouraged.

Major arterials and future capacity of arterials to accommodate increases in traffic should be discussed.

d) Public Facilities and Utilities

Standards and guidelines for minimum facilities for urban development should be provided to the general public.

GRAND AVENUE CORRIDOR RESIDENT ISSUE IDENTIFICATION

The "Resident Identification" element of the **Grand Avenue Corridor Land Use Plan** summarizes the major land development issues raised by the residents of the Grand Avenue Corridor Planning Area.

GRAND AVENUE CORRIDOR ISSUE IDENTIFICATION WORKSHOP

On 30 January and 11 February 1986, Grand Avenue Corridor Community Issue Identification Workshops were held at Johnson Social Hall and Nadaburg Elementary School respectively. Residents, business people, property owners, Maricopa County Planning and Zoning Commission members, and the Maricopa County Board of Supervisors were invited to attend the workshops through the issuance of a workshop newsletter and coverage in the Sun City Daily News and Sun City Independent Newspaper prior to the workshop.

Approximately 250 people attended the two workshops. Participants at the workshops identified specific issues and expressed general ideas they felt should be pursued to resolve their issues. Ninety-one total issues were identified in the areas of environment, land use, transportation, and public utilities. These issues were prioritized by the residents in terms of relative importance; each issue was rated as low, medium and high. Fifty-one issues were rated as high in importance. These issues are listed by designated workshop in **Table-12**, "Grand Avenue Corridor Resident Issue Identification."

SUMMARY OF RESIDENT ISSUES

As the inventory and analysis document was prepared for the Grand Avenue Corridor Land Use Plan, specific issues surfaced as a result of the extensive inventory and documentation. Those issues correspond very closely to many issues identified at the Community Issue Identification Workshop. The issues are as follows:

Environment

The Sun City West and Wittmann 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 areas as major environmental issues to be considered while preparing the land use plan.

TABLE - 12

Grand Avenue Corridor Resident Issue Identification

ISSUES IDENTIFIED BY SUN CITY WEST RESIDENTS:

Environmental --

Air Quality, Pollution
Stop Burning
Water Supply (Use, Quantity)
Promote Desert Landscaping
Control Flooding
Promote Floodplain Areas As
Parks, Open Spaces

Land Use --

Concentrate Commercial
Encourage Transitional Land
Uses/Buffer Zones
Landfill
Consolidate Heavy Industrial
Promote High Standard of Development

Encourage Balanced/Mixed Development
Stop Mobile Home/R.V. Development
Limit Developer Control

Transportation --

Improve/Widen Grand Avenue
Improve Transportation Timing/
Traffic Control
Develop A Public Transit System
Construct Railroad Underpasses,
Overpasses, Crossings
Limit/Elimination of Billboards

Public Utilities --

No Garbage Collection/Landfill
(Wittmann)
Planning Coordination of

Provide Health Services
Provide Park and Recreation
Areas

ISSUES IDENTIFIED BY WITTMANN RESIDENTS:

Environmental --

Clean up Community/Desert
"No Dumping" Signs
Eliminate Open Burning

Land Use --

Maintain Areas of Rural Development
Retain Rural Development
Keep Livestock In Chaparral Area
Access to/Establish Horse Trails
Maintain Greenbelts
Retain Bureau of Land Management
Land as Public Park/Preserve
More Industrial Development
(No Heavy)
Encourage Well Planned Community
Develop a Town Commercial Center
No Two Story Development
Encourage Mixed Use Development/Land Use
Economic Balance/Mix of Housing Types
Change Five Acre Mobile Home
Lot Sizes to One Acre
Enforce One Unit/Lot

Transportation --

Control Motorcycles
Improve/Widen Grand Avenue
Pave/Oil Local Roads
Transit Express

Public Facilities --

Improve/Expand Water Company
Expand Elementary School
Need High School
Acquire Park Land
Need Health Care Facility
Law Enforcement
Animal Control

Land Use

The residents of Sun City West and Wittmann perceived key land use issues differently. The residents of Sun City West perceived the need to promote high quality development by using transitional land uses, buffer zones and concentrated areas of commercial and industrial development. The Wittmann residents worked to maintain a rural lifestyle, develop a town commercial center and preserve Bureau of Land Management land as open space areas.

Transportation

Sun City West and Wittmann residents perceived improving/widening Grand Avenue, improvement of the existing roadways, and developing a public transit system as major transportation issues.

Public Utilities

The residents of Sun City West and Wittmann perceived the need to improve the existing public utilities, provide health care facilities and provide park and recreational areas.

GRAND AVENUE CORRIDOR GOALS AND POLICIES

The formulation of a realistic and implementable land use plan for the **Grand Avenue Corridor Planning Area** is predicated upon the definition of a set of comprehensive goals and policies. The land use "Goals and Policies" are presented in three subject areas:

Natural Resources
Socio-Economic Development
Land Use

The following are generalized definitions which should be referred to as a guide when reading this chapter of the Grand Avenue Corridor Land Use Plan.

GOAL: A desired end which, if pursued over the long-term, will ultimately result in the attainment of a desired living environment.

POLICY: A means to attain the established goals. Policies prescribe or represent a course of action.

The "Goals and Policies" are intended to set the stage for public and private actions geared to guide orderly and planned growth within the Grand Avenue Corridor Planning Area and its fringe; promote high quality residential, commercial, and industrial development; and continue to improve and expand transportation and public facilities for the planning area.

NATURAL RESOURCES

A. Physical Characteristics

GOAL: Permit developments which are compatible with natural environmental features and which do not lead to its destruction.

Policy A-1: Encourage compatible land use relationships with sources of excessive noise.

Policy A-1.1: Consider noise generated by Luke Air Force Base relative to Military Airport Zoning (SB 1011), as contained in Chapter 266 of the 1986 Session Laws or successor laws and the proposed northwest loop in the discretionary review of applications for land development.

Policy A-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 A-3: In order to minimize adverse impacts of hillside development, the submittal of land development applications which permit review on lands with slopes of 15 percent or greater should be encouraged.

Policy A-3.1: Encourage the preservation of the scenic quality of the Hieroglyphic and other surrounding mountains in the discretionary review of applications for land development and develop other preservation programs and strategies as deemed appropriate.

B. Hydrology

GOAL: Protect and preserve existing water resources and minimize flood hazards.

Policy B-1: Encourage cooperation with the Flood Control District to minimize land development conflicts and achieve compatibility with the development and implementation of Area Drainage Master Studies and other relevant investigation.

Policy B-2: Limit the location of land uses, which rely on direct extraction of groundwater to where subsidence is neither an existing condition nor is projected to occur in the future.

Policy B-2.1: Encourage the location of land uses which rely on direct extraction of groundwater to where subsidence is neither an existing condition nor is projected to occur in the future (e.g., in the areas south of Beardsley Road between Litchfield Road and Cotton Lane), recognizing the correlation between land subsidence and groundwater overdraft.

Policy B-3: Support the regulation of land uses which are consistent with water conservation

efforts mandated in the Arizona 1980 Groundwater Management Act or successor legislation.

- Policy B-4: Encourage developments which maximize recharges of groundwater supplies and utilize treated wastewater for water amenities and irrigation.
- Policy B-5: Encourage the use of drought tolerant and low water consumptive landscape materials.
- Policy B-6: Support Flood Control District policies and regulations on development within all floodplains of the County.
- Policy B-6.1: Support Flood Control District policies and regulations on development within the 100 year floodplain of the Agua Fria River and along the Grand Avenue Corridor's drainage washes for the purpose of minimizing the hazards due to flood waters.
- Policy B-7: Discourage the location of structures which would increase water ponding and sheetflow in areas of extremely flat land and areas susceptible to sheetflow.

C. Vegetation and Wildlife

- GOAL: Preserve existing habitat areas of threatened or endangered wildlife species.**
- Policy C-1: Encourage the protection of threatened and endangered species.
- Policy C-1.1: Recognizing the unique character of the existing flora in the northeast portion of the study area, support preservation practices when reviewing proposed land uses, rezonings and plans of development.
- Policy C-1.2: Consider the protection of threatened and endangered wild-life species when taking action on developments in the northeastern portion of the Grand Avenue Corridor Planning area.
- Policy C-2: Support preservation practices in the Palo Verde-Saguaro Community.

Policy C-2.1: Encourage the submittal of sensitively designed developments for the projects proposed in the northeast portion of the Grand Avenue Corridor Planning Area to further the protection of the natural environment.

Policy C-3: Encourage the use of replacement vegetation that is primarily indigenous to the Palo Verde-Saguaro Community for land developments which disturb that community.

Policy C-3.1: Encourage the use of replacement vegetation that is primarily indigenous to the Palo Verde-Saguaro Plant Community for any land developments that disturb the natural terrain in the northeast portion of the Grand Avenue Corridor Planning Area in the discretionary review of applications for land development and prior to the issuance of building or grading permits.

D. Archaeology

GOAL: Protect the County's historical and archaeological resources.

Policy D-1: Prior to development, excavation, or grading, require the submittal of a letter by the applicant from the Arizona Historical Preservation Officer stating that the proposed land development will have no effect on historical and cultural resources.

SOCIO-ECONOMIC DEVELOPMENT

A. Commercial/Industrial Development

GOAL: Permit major commercial and job employment centers where the labor force and infrastructure exist or are expanding.

GOAL: In developments with densities greater than one dwelling unit per acre create a land use environment that generates a diversified economic base which fosters varied employment opportunities, and encourages business formation and expansion.

Policy A-1: Commercial development is only to be encouraged when its demand can be justified and with the provision that construction will be completed on the proposed facilities within a specified time period.

Policy A-1.1: In recognition that there is an excess of vacant industrially zoned land in the County and more specifically in Sun City West, infill and development of that land prior to the rezoning of additional land for industrial land uses will be encouraged.

Policy A-1.2: New businesses providing employment opportunities in the Grand Avenue Corridor Planning Area are to be encouraged to locate in proximity to the growing population base and labor force.

Policy A-2: Encourage industrial development on property zoned industrial prior to rezoning of additional property for industrial use.

Policy A-2.1: New commercial and industrial land developments will be encouraged to be located south of Beardsley Canal and in portions of the County lending themselves to urban intensity development if adequate infrastructure can be provided and demand can be justified.

Policy A-3: Encourage commercial development in areas currently zoned for such activity, and in areas that are a portion of a large scale or planned development, provided that proposed acreage may be supported by on-site population.

Policy A-3.1: New commercial and industrial rezonings will be discouraged in areas outside of urban concentration.

Policy A-4: In conjunction with any modification requiring building permit issuance require existing industrial and commercial operations with salvage or storage yard activities to be screened from public view.

Policy A-5: Require proposed industrial and commercial operations with salvage or storage yard activities to be screened from public view.

Policy A-6: Discourage strip commercial development.

LAND USE

A. Land Use

GOAL: Create orderly, efficient, and functional development patterns.

GOAL: Create high quality residential, commercial, and industrial land developments that are compatible with adjacent land uses.

Policy A-1: Encourage residential developments within urban residential land use categories as a part of a planned community with a mixture of housing types and intensities.

Policy A-2: Encourage the use of "planned developments" for suburban development projects which incorporate quality and cluster development.

Policy A-2.1: In the furtherance of commercial shopping convenience, land use continuity and compatibility, encourage the development of new commercial land uses when their demand can be justified by population residing within the Wittmann commercial service area.

Policy A-3: Encourage the location of rural density residential development (less than one dwelling unit per acre) in areas where infrastructure to support higher density housing is lacking, and where natural environmental conditions suggest low intensity development.

- Policy A-3.1: Residential development north of the Central Arizona Project Canal will be discouraged at suburban or greater intensities (exceeding one dwelling unit per acre).
- Policy A-4: Residential development at one (1) unit per acre or greater intensities are to be directed toward urbanizing portions of the County.
- Policy A-5: Encourage land developers to cooperate with residents, and homeowner's associations during any development review process for construction near the property holdings of those residents and homeowner's associations.
- Policy A-5.1: Developers will be encouraged to cooperate with residents and homeowner's associations, and more specifically, Sun City West property owners and resident's associations during any development review process for construction near the property holdings of those residents, homeowner's associations and Sun City West.
- Policy A-5.2: In addition to normal review, development proposals adjacent to large scale developments, existing and approved land uses, and more specifically, in the vicinity of Sun City West, will be reviewed to determine compatibility with those developments and existing and proposed land uses.
- Policy A-6: In addition to normal site plan review, development proposals along major streets and adjacent to existing and approved land uses, will be reviewed to determine compatibility with those uses.
- Policy A-6.1: Maricopa County will pursue efforts that would minimize strip commercial development along Grand Avenue.
- Policy A-7: Discourage the location of commercial or industrial developments in locations specified for development with rural density land uses.

Policy A-8: Encourage signage to be located on the site for which it pertains.

Policy A-9: In the review of large scale development applications where the application will greatly effect current population, housing, and land use projections and distribution, the impacts of the application must be thoroughly considered and the effects on the current plan noted.

B. Transportation

GOAL: Establish a circulation system that provides for the safe, convenient and efficient movement of goods and people throughout Maricopa County.

Policy B-1: Support the Arizona Department of Transportation's efforts to improve existing regional transportation links and their planning and construction of new regional freeways and expressways.

Policy B-1.1: Support the Arizona Department of Transportation's efforts to improve and widen Grand Avenue with the objective of improving the accessibility of the Grand Avenue Corridor Planning Area and the northwest region of the County to the balance of the Phoenix metropolitan region.

Policy B-2: Encourage the planning and construction of frontage roads adjacent to regional transportation links where needed to provide for safe, convenient and efficient movement of local traffic.

Policy B-2.1: Encourage the planning and construction of frontage roads parallel to the northwest loop freeway where needed to provide for the safe, convenient and efficient movement of local traffic.

Policy B-3: Support the continued maintenance of roadways and the paving of new and existing local roads consistent with adopted engineering and design standards.

- Policy B-4: Encourage the extension of local roadways only when needed to provide for the safe, convenient, and efficient movement of local traffic.
- Policy B-5: Support the County Highway Department's efforts to provide for all-weather travel over washes on County roads.
- Policy B-6: Encourage the location of drought tolerant landscaping along new and existing major roadways, thereby enhancing the visual character of public transportation routes.
- Policy B-7: Support the County Highway Department's efforts to obtain land dedications for roadways during rezoning and subdivision processes.
- Policy B-8: Require the development of an arterial street system based upon the existing section line grid pattern unless, as part of approved developments, alternative arterial patterns are deemed superior or more appropriate.

C. Public Facilities and Utilities

- GOAL:** Provide for a functional, efficient and cost effective system of utilities, facilities and services to serve county population and employment centers.
- Policy C-1: Continue to establish and maintain a system of park and recreational facilities to serve the residents of the County.
- Policy C-2: Encourage the inclusion of private open space and recreational opportunities to meet the needs of occupants in large and/or high density residential developments.
- Policy C-3: Support public agency coordination to provide a balanced system of recreational opportunities in the County.
- Policy C-4: Preserve natural drainageways as linear open space corridors leading to various water canals.

Policy C-4.1: Where possible and appropriate in the design and construction of new development, natural drainage-ways will be preserved as linear open space corridors for recreational purposes, leading to the Central Arizona Project and Beardsley Canals.

Policy C-4.2: Encourage the use of the Central Arizona Project and Beardsley Canal corridors as multiple use trails (e.g., pedestrian, horse, bicycle) for recreational purposes.

Policy C-5: Encourage canal utilization as multiple use trails for recreational purposes.

Policy C-6: Permit residential developments that exceed one dwelling unit per acre only if they have community water and sanitary sewer systems provided.

D. GROWTH GUIDANCE

Goal: Provide sufficient public services for intensity of land use.

Goal: Minimize conflicts between urban and rural land uses.

Policy D-1: New urban development is to be in accordance with the Grand Avenue Corridor Land Use Plan and respective land use categories.

Policy D-2: New urban development shall 1) supply evidence of an adequate supply of potable water, and 2) provide for public wastewater treatment.

Policy D-3: New urban zoning shall be within one mile of existing urban development.

Policy D-4: New urban development shall identify sites for parks and schools. The following standards apply:

Space Standards

<u>Type of Facility</u>	<u>Amount of Acres</u>
Neighborhood Park/Recreation Open Space Area	5 Acres/1000 People
Community Parks/Recreation Facilities	5 Acres/1000 People
Elementary School	3.1 Acres/1000 People
Junior High School	2.7 Acres/1000 People
Senior High School	1.9 Acres/1000 People

Location Standard

Neighborhood Park - To be located within 1/4 mile of all residential uses proposed for development (without arterial street bisecting).

Community Park Recreation Facility - Should serve a population of approximately 20,000 people, be centrally located and within 1 to 1 1/2 miles of every home.

Elementary School - To be located within 1/2 - 3/4 mile (without arterial street bisecting) of all residential uses proposed for development.

Junior High School - To be located within 1 to 1 1/2 mile of all residential uses proposed for development.

Senior High School - To be located within 5 miles of all residential uses proposed for development.

Policy D-5: New urban development shall provide evidence of adequate fire protection. Prior to rezoning the following standards apply:

- a) Four (4) minute response time
- b) 500 gallons per minute pressure rating
- c) Minimum two (2) engines able to respond

Policy D-6: New urban development shall have access to a four (4) lane improved arterial road (110 foot right-of-way).

LAND USE PLAN

This chapter of the **Grand Avenue Corridor Land Use Plan** identifies the intended use of the plan as a guide to future development. The plan's relationship to environmental protection, transportation, public facilities and services is discussed. This discussion is presented in the following five sections:

- Community Issues
- Planning Area Growth and Development Needs
- Land Use Plan
- Use of the Land Use Plan
- Related Planning Elements

COMMUNITY ISSUES

A number of land use issues were identified in "Inventory and Analysis," as a result of the data collection process and, most importantly, the community participation process. The major land use issues identified by the residents of the area included:

Sun City West Issues:

- Promote floodplain area as parks/open space
- Encourage transitional land uses/buffer zones
- Encourage balanced/mixed development
- Stop mobile home/R.V. development
- Consolidate heavy industrial development

Wittmann Issues:

- Maintain areas of rural development
- Provide more industrial development (excluding heavy)
- Encourage well planned developments
- Develop a town (Wittmann) commercial center
- Allow mobile homes on one acre lots
- Establish and maintain greenbelts and horse trails

A more detailed list of issues is presented in "Inventory and Analysis."

PLANNING AREA GROWTH/DEVELOPMENT NEEDS

Using the population projections presented in "Inventory and Analysis," a reasonably accurate prediction of the amount of land needed for residential, commercial, and industrial development was prepared.

The estimated population of the unincorporated area of the Grand Avenue Corridor Planning Area is expected to grow from a 1985 population of 14,247 persons and 8,726 housing units to a year 2010 population of 48,257 persons and 28,616 housing units, as shown in **Table-13**. This growth represents an increase of more than 200 percent in both population and housing units. Nearly all of this growth is expected to occur south of the Central Arizona Project (CAP) Canal.

Assuming residential development takes place at average densities of four dwelling units per acre (4.0 du/acre), approximately 4,973 acres or 7.8 square miles of residentially developed land will be necessary by the year 2010.

With over 50 square miles of unincorporated, developable land in the planning area south of the CAP canal, a population of over 128,000 could be accommodated - over twice the projected population for the area through the year 2010. The population capacity for the entire Grand Avenue Corridor Area becomes substantially greater once the peripheral areas of Wittmann and Morristown are included.

In addition to the residential land needs, commercial and industrial land needs were calculated. As discussed in "Inventory and Analysis," and illustrated in **Table-14**, "Projected Land Use Demand," 364 acres of industrial development will be necessary and 489 acres of commercial development will also be needed (181 within Sun City West; 308 outside Sun City West). In both cases, existing zoned property meets or exceeds the projected demand through the year 2010. Most of the commercially zoned land is in the form of a strip along the length of Grand Avenue. If the commercially zoned land along Grand Avenue does not become fully developed, additional areas of commercial zoning may be appropriate to support the demand in the Grand Avenue Corridor Planning Area.

LAND USE PLAN

The "Land Use Plan," illustrated in **Figure-14**, indicates the intended density, and use of land for the different parts of the planning area. The plan does not reflect the intended zoning of individual parcels, but generalizes desired future land uses.

The land use boundaries shown on the "Land Use Plan" are intended to represent natural or man-made demarcations where possible. Where such boundaries are not readily distinguishable, transitions may be allowed; provided, the intent of the "Land Use Plan" is not violated. With proper buffering and site planning techniques, transitions may be allowed without diminishing the intended purpose of the "Land Use Plan."

Table - 13

Projected Resident Population and Housing Units, 1985-2010

	<u>Census 1985</u>	<u>Mid-Year 1995</u>	<u>Mid-Year 2010</u>	<u>Total Increase</u>	<u>Percentage Increase</u>
Population	14,247	21,598	48,257	34,010	239%
Housing Units	8,726	14,757	28,616	19,890	228%

Table - 14

Projected Land Use Demand

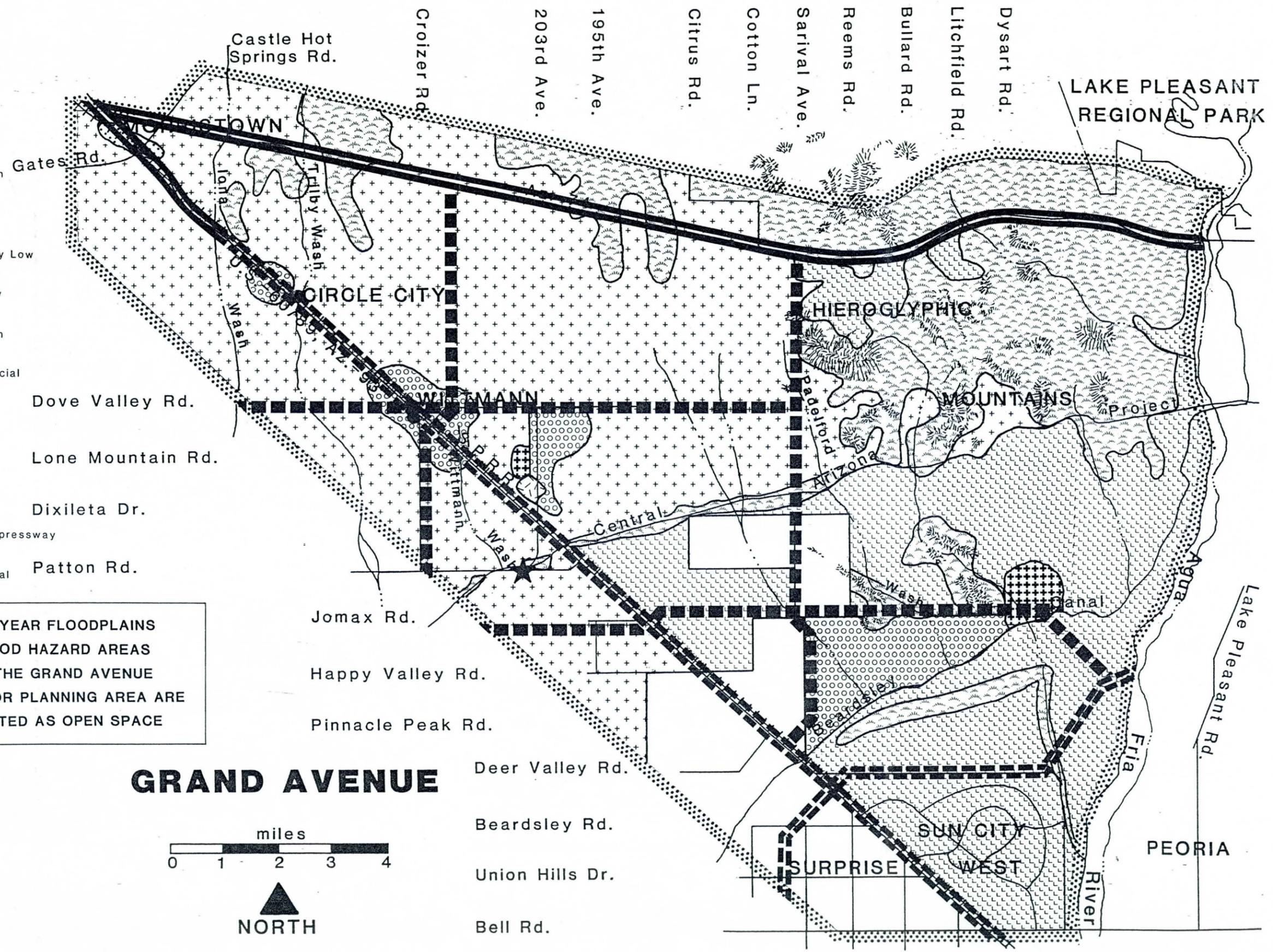
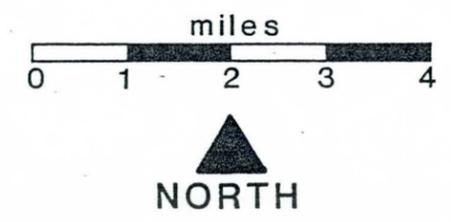
<u>Land Use</u>	<u>Acres Needed</u>	<u>Acres Zoned/ Developed 1989</u>	<u>Additional Zoning Needed</u>
Residential	4,973	7,856*	0
Commercial	489	866	0
Industrial	364	389	0

* Includes all residential zoning of greater density than Rural-43. Also includes all Rural-43 that has been subdivided.

- Categories
-  OS Open Space
 -  RR/H Rural Residential/High
 -  SR Suburban Residential
 -  UR/VL Urban Residential/Very Low
 -  UR/L Urban Residential/Low
 -  UR/H Urban Residential/High
 -  NC Neighborhood Commercial
 -  LIC Light Industrial Center
 -  Incorporated Areas
 -  Freeway/Expressway
 -  Proposed Freeway/Expressway
 -  Proposed Major Arterial

ALL 100 YEAR FLOODPLAINS
AND FLOOD HAZARD AREAS
WITHIN THE GRAND AVENUE
CORRIDOR PLANNING AREA ARE
DESIGNATED AS OPEN SPACE

GRAND AVENUE



Land Use Definitions

The following land use definitions have been established to be used in understanding the "Land Use Plan." For each land use designated, the corresponding definition is to be used to assure consistent interpretation of the Land Use Plan. **(NOTE: Definitions are only given for those land use categories designated on the Grand Avenue Corridor Land Use Plan).**

Open Space, OS

The Open Space category denotes areas which would be best suited for open space uses and recreation areas. Development of residential uses up to one (1) dwelling unit per acre is also permitted in the Open Space Category provided development of environmentally sensitive areas, such as steep slopes and floodplains, are in compliance with Hillside Development Overlay District and Floodplain Development Regulations. Additional uses in this category include parks, recreation areas, drainage ways and Scenic areas.

Residential

The "Land Use Categories" which permit residential development are divided into two areas based upon the availability of urban services (sewer, water, law enforcement, fire protection, schools, parks, etc.). Those categories in which some or all of these services do not exist and are not anticipated to be provided have been defined as rural, while those categories in which these services exist or are anticipated to be provided have been defined as suburban and urban. Permitted uses in all residential use categories include schools and churches. Special attention to the location of these uses should be given with regard to access, traffic and proximity to arterials.

Rural Residential/High Density, RR/H, (0-1.0 Dwelling Units per Acre)

The Rural Residential/High Density category denotes areas where single family residential development is desirable but urban services (sewer, water, law enforcement, fire protection, schools, parks, etc.) are limited. Suitability is determined on the basis of location, access, existing land use patterns, and natural or man-made constraints. Within any particular development, densities greater than 1.0 du/acre may be permitted, but only if areas of lower densities off-set the increase such that an average of less than 1.0 du/acre is maintained. Uses in this category include agricultural and single family residential.

Suburban Residential, SR, (0-2.0 Dwelling Units per Acre)

The Suburban Residential category denotes areas where single family residential development is desirable and urban services (sewer,

water, law enforcement, fire protection, schools, parks, etc.) are available or will be provided. Suitability is determined on the basis of location, access, existing land use patterns and natural or man-made constraints. Within any particular development, densities greater than 2.0 du/acre may be permitted, but only if areas of lower densities off-set the increase such that an average of less than 2.0 du/acre is maintained. In addition to residential uses, limited convenience commercial uses may also be permitted where there is direct access to arterial streets. A community sewer and water system will be required for developments above 1.0 du/acre and may be required for those below 1.0 du/acre.

Urban Residential/Very Low Density, UR/VL (0-4.0 Dwelling Units per Acre)

The Urban Residential/Very Low Density category denotes areas where higher density residential development is appropriate and all urban services (sewer, water, law enforcement, fire protection, schools, parks, etc.) are available or will be provided. Single family development may be permitted, provided overall development densities do not exceed 4.0 du/acre. Within any particular development densities greater than 4.0 du/acre may be permitted, but only if areas of lower densities off-set the increase such that an average of 4.0 du/acre or less is maintained. Convenience commercial development may be located within the area with direct arterial street access. A community sewer and water system will be required for development at these densities.

Urban Residential/Low Density, UR/L, (0-6.0 Dwelling Units per Acre)

The Urban Residential/Low Density category denotes areas where higher density residential development is appropriate and all urban services (sewer, water, law enforcement, fire protection, schools, parks, etc.) are available or will be provided. Single family development may be permitted, provided overall development densities do not exceed 6.0 du/acre. Within any particular development densities greater than 6.0 du/acre may be permitted, but only if areas of lower densities off-set the increase such that an average of 6.0 du/acre or less is maintained. Convenience commercial development may be located within the area with direct arterial street access. A community sewer and water system will be required for development at these densities.

Urban Residential/High Density, UR/H, (0-25.0 Dwelling Units per Acre)

The Urban Residential/High Density category denotes areas where the County's highest residential development densities are appropriate and where all urban services (sewer, water, law enforcement, fire protection, schools, parks, etc.) are available or will be provided. High density multi-family developments may be permitted.

Residential densities for specific projects may exceed 25.00 du/acre, but only if areas of lower densities off-set the increase such that an average of 25.00 du/acre or less is maintained. Neighborhood commercial development may be located within the area at arterial street intersections, if demand permits. A community sewer and water system will be required for development at these densities.

Commercial

Four "Land Use Categories" have been developed which permit different intensities of commercial activities. Direct frontage on arterial streets is an essential element for each category.

Convenience Commercial, CC

The Convenience Commercial category denotes areas for the location of small convenience shops and services for the benefit of local residents. This category permits developments of 1 acre or less. Convenience Commercial locations are designated in areas having a more rural character. Permitted uses in this category include gasoline stations, minor auto repair and maintenance, convenience food marts, barber shops, beauty shops, package liquor stores, laundromats, and eating and drinking establishments. Urban level services are not required, however uses allowed should be appropriate for the services available.

Neighborhood Commercial, NC

The Neighborhood Commercial category denotes areas providing for the sale of convenience goods (food, drugs, and sundries) and personal services which meet the daily needs of an immediate neighborhood trade area. Such a trade area shall have a minimum population of approximately 5,000 people. This category permits developments of 5 acres or less per trade area. A limited number of permitted activities should be provided. A market analysis may be required. A community sewer and water system will be required for development. All uses within this category are subject to plan review and approval.

Employment Centers

The Employment Center categories denote areas for the concentration of major employers. In recognition of the diverse nature of major employers, three categories have been developed which attempt to group uses by their impacts on the surrounding area.

Light Industrial Center, LIC

The Light Industrial Center category denotes areas for the location of major employment centers which would have greater impacts on

surrounding areas than those uses in a Mixed Use Center. Uses permitted in this category would include warehousing, storage, wholesale distribution activities, limited manufacturing and assembly. Access to a principal arterial or freeway will be required. Very limited noise, vibration, smoke, dust, odor, heat or glare will be permitted. Limited truck traffic will be allowed. Urban services are available or will be provided. A community sewer and water system will be required for development. All uses within this category are subject to plan review and approval.

Transportation

Freeways and Principal Arterials

Freeways and Principal Arterial Streets will carry the majority of trips leaving and entering the Planning Area, represent the area's highest traffic volume corridors, and are the only streets designated on the future Land Use map. (Arterial and collector level streets may be developed, but are not illustrated on the plan.)

Land Use Development Patterns

Through the inventory and analysis of both natural and man-made features, the "Land Use Plan" was prepared. While the desired goals and policies formed the basis of the desired land use patterns for the area, the ultimate development pattern was tempered by recognition of existing development activities and patterns that had been established in the past. This included consideration for land uses and features outside the planning area which might positively or negatively impact the desired future development patterns within the planning area.

The following summarizes the "Land Use Plan" for the Grand Avenue Corridor Planning Area, based upon development of the area by the year 2010.

Open Space

Much of the Grand Avenue Corridor Planning Area is designated for use as open space. In an effort to emphasize the importance of promoting preservation of the area's scenic beauty and the existing rural lifestyle desired by the County, some lands held in public trusteeship are retained as open space. For much of the planning area this open space category is intended to protect the area's many mountainsides where slopes exceed 15 percent or areas that are prone to flooding. The "Land Use Plan's" intent is to encourage the maintenance of these hillsides as permanent open space due to the slope constraints. In the event, however, that development is allowed in these areas, the permitted uses should be in conformance with the underlying zoning (Rural-43). In addition, specific requests should be reviewed by the County to insure that adequate safeguards are implemented to mitigate any negative impacts associated with steep slope development.

Residential Development

The Grand Avenue Corridor Planning Area covers an interesting geographical area of Maricopa County. In part due to its vast area, nearly 171 square miles, the planning area is characterized by a very urban development pattern in the southeast and very rural development patterns in the west and north. Additionally, these rural areas are characterized by very picturesque mountain areas in the north (some of which are still held in federal ownership and established as open space) and very flat open lands in the west.

This development pattern is maintained on the "Land Use Plan" with the major concentration of residential development targeted for south of the Central Arizona Project (CAP) canal. Areas, north of the CAP, are designated for very low density development. Exceptions to this pattern exist near the unincorporated towns of Wittmann and Morristown, which could be allowed to develop more intensely to provide residents of those areas with a more urban environment. Within the area, south of the CAP, the most urban residential densities are sited near the proposed Estrella Freeway (SR 303), particularly in the area between the freeway, Jomax Road and Sarival 163rd Avenue.

Non-Residential Development

Except for an existing area south of the Chrysler Proving Grounds southeast of Wittmann, all designated major non-residential development areas are located south of the CAP. However, the towns of Wittmann and Morristown may incur commercial development as part of the Urban Residential/Low Density category.

Although this plan proposes no change in the existing strip commercial zoning along Grand Avenue, the plan's intent is to encourage development in this area that is consistent with the

"Land Use Plan." Should commercial development occur in this corridor; special consideration should be given to such items as access to Grand Avenue, the carrying capacity of Grand Avenue, compatibility with surrounding land uses, and buffering as noted in other sections of this plan.

South of the CAP, commercial sites could be permitted at the major arterial intersections to provide commercial needs, if demand exists. These sites should have access via the arterial streets. In addition, the developments should be concentrated and developed with attention to access control, aesthetics, minimal traffic congestion, and compatibility with existing or planned residential uses.

Use of the Land Use Plan

Consistency in zoning for specific areas or parcels of land within the Grand Avenue Corridor Planning Area must be evaluated in terms of overall furtherance of plan goals and policies. The following guidelines have been formulated to help insure that the intent and integrity of the "Land Use Plan" is retained over the life of its use. The "Land Use Guidelines" are presented in the following categories:

- Development Master Plans
- Residential Land Use Guidelines
- Commercial Land Use Guidelines
- Industrial Land Use Guidelines
- Buffering and Transitional Land Use Guidelines
- Amendments to the Land Use Plan

Development Master Plans

The use of Development Master Plans (DMPs) should be promoted by the County, as a means of implementing the generalized land use identified on the Land Use Plan Map. The use of DMPs is intended to allow flexibility in the master planning of large tracts of land located outside of municipal boundaries. Master Plans may be initiated by property owners and should have the following features:

Mixed use development;

- A separation of vehicular and pedestrian traffic which promote open space networks;
- Dispersal of through traffic when practical and desirable;
- A high level of integrated development design;
- A mix of intensities which are transitional with spatial structural, and visual buffers

Residential Land Use Guidelines

The following guidelines shall aid in governing the development of land designated as residential in the "Land Use Plan."

1. Residential densities within any given development project will be calculated based upon the gross acreage of the project. The following densities apply:

Rural Residential/Low Density	0 - 0.2 du/acre
Rural Residential/High Density	0 - 1.0 du/acre
Suburban Residential	0 - 2.0 du/acre
Urban Residential/Very Low Density	0 - 4.0 du/acre
Urban Residential/Low Density	0 - 6.0 du/acre
Urban Residential/Medium Density	0 - 12.0 du/acre
Urban Residential/High Density	0 - 25.0 du/acre

Note: Residential densities within any given development project will be calculated based upon the Gross Acreage of the project.

2. Commercial uses are allowed by most of the residential categories.

In an effort to create quality neighborhoods in the Grand Avenue Corridor Planning Area, retail and service commercial uses will be permitted as part of the planned development pattern. However, any commercial development must be sited and designed such that the activities present will not detrimentally affect adjacent residential neighborhoods. To this end, the following guidelines will influence the siting of commercial uses.

- a. Commercial uses will be located at the intersections of arterial streets. It is the County's intent not to permit the proliferation of commercial development at every arterial intersection; therefore, only major intersections will be considered for commercial development.
- b. Professional offices, retail, and service commercial uses may be permitted in neighborhood commercial centers; but, only at a development scale compatible with adjacent residential development.

Commercial Land Use Guidelines

The following guidelines shall aid in governing all land use planning pertaining to the development of land designated as Commercial.

1. Commercial activities in designated areas include appropriate service, retail, and professional office uses.

2. All commercial development should be landscaped utilizing consistent landscaping themes that will tie adjacent projects together. Landscaped easements along public right-of-ways using shrubs, trees, and/or earth berming will be provided and installed at the time of street construction. Signage should be controlled in terms of placement and maximum size.

Employment Center Land Use Guidelines

The following guidelines shall aid in governing all land use planning pertaining to the development of land designated as employment center on the "Land Use Plan."

1. Proposed uses must be appropriate for the type of employment center in which they are located.
2. Heavy industrial uses and warehousing activities should be located away from arterial streets, allowing garden-type light industrial and business park uses to buffer the general view of heavy industrial activities. Industrial development may also be required to landscape and/or to screen unattractive uses from public view.

Buffering and Transitional Land Use Guideline

When any two different land use types are shown on the "Land Use Plan" or are approved as part of a Development Master Plan, buffering or a transitional land use between the two uses may be necessary. Buffering may consist of the placement of open space between two incompatible uses and will be required of the more intensive use where a less intensive use already exists, or where the "Land Use Plan" shows that a less intensive use is intended adjacent to the more intensive use. The use of transitional land uses consists of placing uses of intermediate intensity between two incompatible uses.

Situations necessitating transitional land uses may include:

Low density, single family development adjacent to multi-family development.

Single family development adjacent to commercial.

In cases where buffering is proposed, the following examples may be considered:

Areas consisting of landscaped open space,
Arterial and collector streets with landscaping,
Major transmission line easements, if landscaped,
Block walls, landscaping, earth berms, or
Combinations of the above.

Amendments to the Land Use Plan

The plan is intended to be a flexible guide to County development. The plan must be able to respond to changes in growth patterns without losing sight of basic guiding policies.

Amendments to the plan should never be allowed to occur in a haphazard manner. Amendments should only occur after careful review of the request, findings of fact in support of the revision, and a public hearing. The statutory requirements which guided the adoption of the "Land Use Plan" will be followed for all amendments as they pertain to public hearings and otherwise. The term amendment will apply to both text and map revisions.

The findings of fact shall conclude that:

1. The amendment constitutes an overall improvement to the "Land Use Plan" and is not solely for the good or benefit of a particular landowner or owners at a particular point in time.
2. The amendment will not adversely impact the planning area as a whole or a portion of the planning area by:
 - a) Significantly altering acceptable land use patterns,
 - b) Requiring public expenditures for larger and more expensive public improvements to roads, sewer, or water systems than are needed to support the prevailing land uses,
 - c) Adversely impacting existing uses because of increased traffic.
 - d) Affecting the livability of the area or the health and safety of the residents.
3. The amendment is consistent with the overall intent of this "Land Use Plan."

Amendments to the "Land Use Plan" may be initiated by the County or private individuals or agencies. However, review of such requests shall be undertaken only on a regularly scheduled basis, which should occur only twice per year and shall be initiated during the same months of every year, unless the County determines that extreme hardship could result to the County if such amendment is not considered immediately.

It shall be the burden of the party requesting the amendment to prove that the change constitutes an improvement to the plan. It shall not be the burden of the County to prove that an amendment should be denied.

Related Planning Elements

Closely related to land use planning are the concerns for the protection of the natural environment and for facilities to support the desired land use patterns. This section briefly addresses the following elements as they relate to the "Land Use Plan."

- Environmental Conservation
- Transportation
- Facilities and Services

Environmental Conservation

There are four general conditions within Maricopa County which deserve consideration of the application of environmental protection measures. These include floodplains and drainage ways, mountainsides where slopes exceed 15 percent, areas within the Palo Verde-Saguaro Community and areas impacted by airport operations. Floodplains and drainage ways require protection or restrictive development standards to minimize destruction of property during periods of flooding. Areas of steep slopes (greater than 15 percent) should be subjected to minimal development due to the potentially destructive nature of cut and fill operations that are often necessary for providing property access and building pads.

The Palo Verde-Saguaro Community represents the stereotypical desert environment and the natural beauty associated with arid landscapes. Although development can be compatible with Palo Verde-Saguaro Communities, it must usually be maintained at relatively low densities (not greater than 2.0 du/acre), and the developments must be sensitively designed so that the image of the Palo Verde-Saguaro Community is retained.

In many instances within Maricopa County the Palo Verde-Saguaro Community exists in or near areas of steep slopes. Therefore, development restraints that are intended for either steep slope or Palo Verde-Saguaro Communities will be compatible with the other situation.

Many of the areas of steep slopes within the Grand Avenue Corridor Area exist on publicly owned land. As the first step in the process of preserving the scenic natural environment of Maricopa County, some lands in public ownership have been designated as open space. As such, the lands will either be retained as open space or, if there is pressure for development of certain lands, amendments to the "Land Use Plans" must be made prior to approving development. The amendment process can then include preparation of a Development Master Plan which can be approved under terms that will assure an environmentally sensitive design.

Transportation

The Grand Avenue Corridor Land Use Plan illustrates only the proposed freeways and arterial streets. These include Grand Avenue, the Estrella Freeway, State Route 74, Jomax Road, Sarival (163rd) Avenue, Crozier Road, Ogden Road and Dove Valley Road. The major arterial streets will carry the majority of trips into and out of the area. Other streets will certainly be necessary as the area develops. Although minor level arterial streets are not depicted, the County will continue its policy of requiring the standard 110-foot right-of-way for all section line roadways unless, as part of a planned development, an equally efficient transportation system is adopted. In such a case the County will require 110 feet of right-of-way for the street or streets that were approved to substitute for the section line roads.

Collector and local level streets will make up the remainder of the vehicular transportation system, with collector streets being generally located on or near the half-section lines. An adequate collector system will be necessary to help relieve potential congestion on the arterial streets. In the Grand Avenue Corridor Planning Area, if the densities established on the Land Use Plan are maintained, most streets north of the CAP canal, other than arterials, could be developed as local streets.

In addition to providing collector streets to relieve arterial street congestion, careful consideration should be given to access onto arterial streets. Arterial streets should be intended to primarily move traffic. A multitude of access points along an arterial street, particularly in commercial areas will severely restrict traffic flow and traffic volumes. **Table-15** illustrates the general design principles of the Arterial-Collector-Local street system. When reviewing development requests, each street's intended function and the function's relationship to access control should be considered. **Table-16** provides recommended minimum driveway spacing to insure proper street function. The driveway spacings do represent minimums, and additional spacing may be necessary under certain circumstances.

Facilities and Services

For much of the development within the Grand Avenue Corridor Planning Area, a full compliment of facilities and services will not be required and is usually not expected by the prospective resident, with the exception of park and recreation, school, law enforcement and fire protection services. This situation will generally apply to developments where densities remain less than 1.0 du/acre as in the rural residential categories. However, the County will be faced with reviewing major developments where

TABLE - 15

Functional Classification Definitions

<u>Category</u>	<u>Primary Function</u>	<u>Degree of Private Access Control</u>
Freeways	Traffic Mobility	Total Control
Expressways	Traffic Mobility	Very High
Major Arterial Streets	Traffic Mobility	High
Arterial Streets	Traffic Mobility	Moderate
Collector Streets Transition	Mobility/ Accessibility	Moderate
Local Streets	Accessibility	None

TABLE - 16

Minimum Driveway Spacing
(Centerline to Centerline)

<u>Facility</u>	<u>Land Use</u>	<u>Minimum Spacing (Feet)</u>
Major Arterial	Commercial, High Density /Activity	200
	Industrial/Office Park, Low to Moderate Activity	275
Arterial	Commercial, High Density /Activity	150
	Industrial/Office Park, Low to Moderate Activity	230
	Multi-Family Residential, Low to Moderate Activity	150

Source: Adapted from "Guidelines for Control of Direct Access to Arterial Highways", FHWA.

densities exceed 1.0 du/acre and are more urban in nature. In these situations, community sewer and water services are required and other facilities expected, depending upon the actual character and magnitude of the development. Although each development must be considered on its own merits, **Table-17** should be used as a reference when determining and sizing necessary facilities for a given development.

TABLE - 17
Facilities Space Standards

Type	Space Requirements	Source
Neighborhood Park/Recreation Open Space Area	5 Acres/1000 People	
Community Parks/Recreation Facilities	5 Acres/1000 People	
Elementary School	3.1 Acres/1000 People	
Junior High School	2.7 Acres/1000 People	
Senior High School	1.9 Acres/1000 People	
<u>PUBLIC SAFETY FACILITIES:</u>		
Law Enforcement	400 s.f./1,000 persons (Does not include garage space)	Colorado Division Impact Assistance
Fire	800-1,000 s.f./1,000 persons (Four-minute response time)**	Colorado Division Impact Assistance
<u>GENERAL SERVICE FACILITIES:</u>		
Administrative (Branch County Offices)	800 s.f./1,000 persons	Colorado Division Impact Assistance
Library	700 s.f./1,000 persons (1,000 s.f. minimum)	National Library Association
<u>EDUCATION FACILITIES:</u>		
Elementary School	8-12 acres, 1 school/1,500-5,000 persons	U.S. Department of Health Education And Welfare; <u>Urban</u> Planning and Design Criteria, 3rd Edition
Junior High School	20-25 acres, 1 school/1,000-16,000 persons	
Senior High School	1 30-45 acres, 1 school/14,000-25,000 persons	

- * Standard is highly variable and dependent upon community values.
 ** Dependent upon factors of water availability, storage and flow; trained personnel; equipment response time; building types, codes.