

MARICOPA COUNTY LAND USE PLAN

EAST MESA PLANNING AREA

Adopted February 18, 1992



OFFICE OF THE BOARD OF SUPERVISORS

MARICOPA COUNTY BOARD OF SUPERVISORS

County Administration Bldg. 301 W. Jefferson Phoenix, Arizona 85003



(602) 262-3415

February 24, 1992

Dear County Resident:

The Maricopa County Board of Supervisors is pleased to present the updated East Mesa Area Land Use Plan which was adopted February 18, 1992.

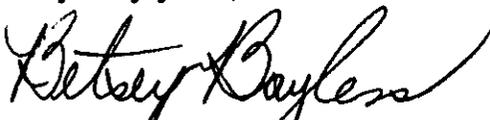
This Plan is one of ten area plans Maricopa County has adopted as part of an on-going land use planning program for the unincorporated areas.

The Land Use Plan was originally adopted on April 18, 1988, and an updated version was adopted on June 18, 1990. This current edition of the Plan has been updated to reflect changing growth patterns, population projections, annexations and other changes to the planning area since the last adoption.

The Land Use Plan serves as a statement of goals and policies to direct growth through the year 2010. Future land use is also designated for those areas under County jurisdiction.

The East Mesa Area Land Use Plan demonstrates Maricopa County's efforts to fulfill State mandated planning for the area of jurisdiction, as well as a significant commitment to the area, its future and its residents.

Very truly yours,


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INTRODUCTION

This introduction provides an overview of the process used to prepare the *East Mesa 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 East Mesa 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 seven specific Land Use Plans as part of the Maricopa County Comprehensive Land Use Plan. One of the specific areas was the East Mesa 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 be provided with a Land Use Plan.

Throughout the planning process, community participation was emphasized through a number of means. Three public workshops for the East Mesa Land Use Plan 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 EAST MESA LAND USE PLAN

This document presents the results of the planning process for the East Mesa Planning Area and is organized corresponding to the work tasks.

"Inventory and Analysis," presents an analysis of the data elements that describe existing conditions in the East Mesa Planning Area.

"Resident Issue Identification," summarizes the major land development issues raised by the residents of the East Mesa Planning Area.

"Goals and Policies", defines specific goals and policies which the County has adopted with regard to the growth and development in the East Mesa Area.

"East Mesa Land Use Plan," presents the Land Use Plan for the East Mesa Planning Area with definitions for each land use category. Also included are discussions of the Land Use Plan, which will be implemented through the application of the policies presented in "Goals and Policies."

ANNUAL UPDATE PROCESS

Each year the ***East Mesa Land Use Plan*** is revised to reflect changes in growth, community information, land use and demographics. The County Department of Planning and Development updates the plan using current Maricopa Association of Governments' (MAG) data. The statistics are compiled by MAG's Transportation and Planning Office and from the Maricopa County Department of Planning and Development using U.S. Census figures. As each update is completed, it is presented for review at public hearings in East Mesa, before the Planning and Zoning Commission and before the Board of Supervisors.

INVENTORY AND ANALYSIS

Development of the *East Mesa Land Use Plan* for Maricopa County 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
- 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 East Mesa Planning Area. Population projections are also presented as part of the inventory and analysis so that the community, public officials, and planning staff have a thorough understanding of the anticipated growth in the East Mesa Planning Area.

NATURAL RESOURCES

In describing natural resources in the East Mesa Planning Area, the following five elements are identified:

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

The purpose of this section of the *East Mesa Land Use Plan* is to describe the physical setting, to identify existing groundwater supplies 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 East Mesa

Planning Area. "Physical Characteristics" are presented in the following six sections:

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

Each of the above factors will affect the quality, character, and direction of development in the East Mesa Planning Area. The purpose of this section of the East Mesa Land Use Plan is to present the environmental characteristics which are affecting and continuing to affect, growth and development in the East Mesa Planning Area.

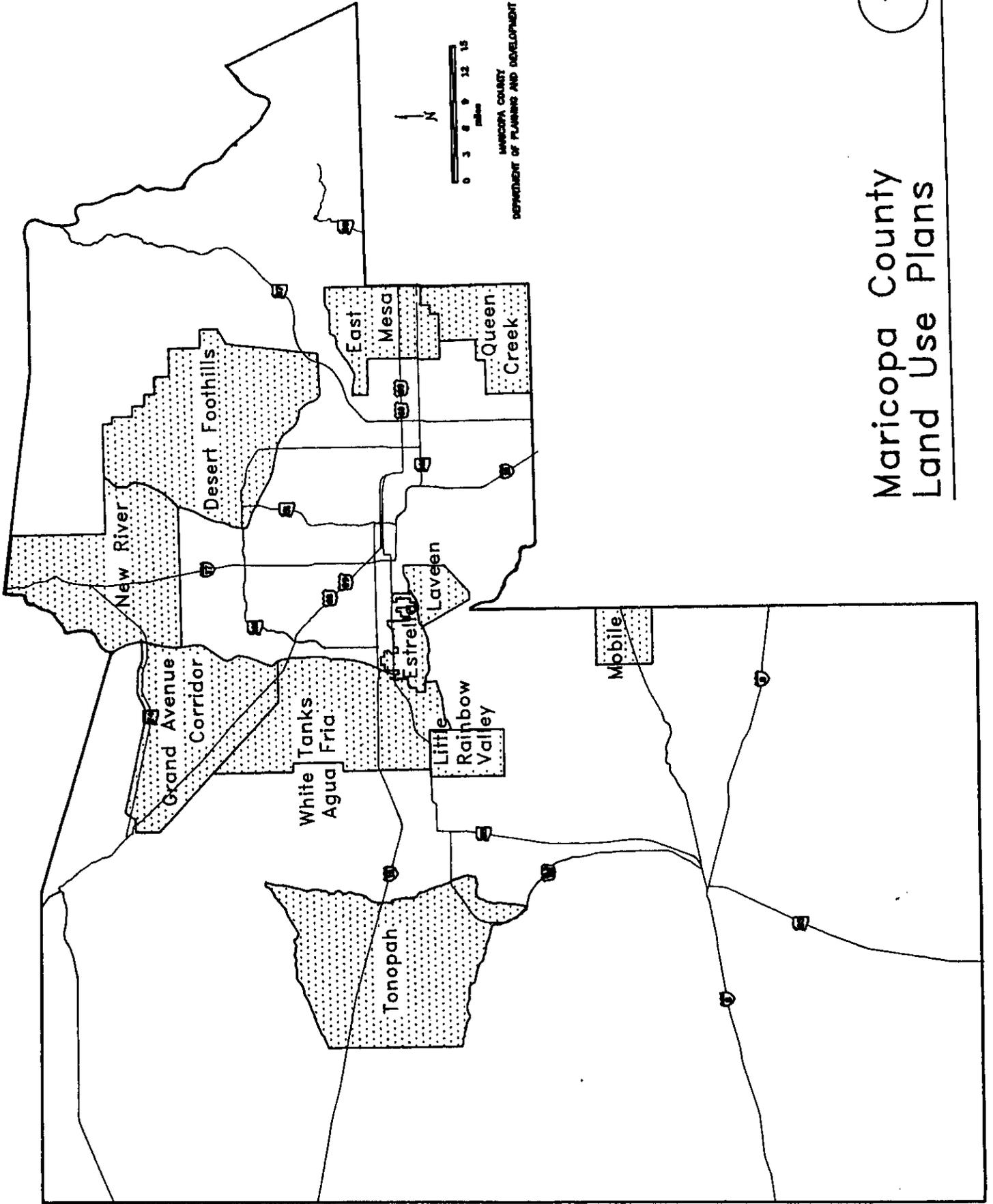
a) Physical Setting

The East Mesa Planning Area (illustrated on *Figure-1*, "Maricopa County Land Use Plans") is located in the east central portion of Maricopa County, south of the Utery Mountains and between the City of Mesa and the City of Apache Junction. Elevations within the area range from 1,260 feet above sea level along the western boundary to 3,310 feet above sea level along the northeastern boundary. Terrain ranges from rocky outcrops found in the northern portions; to alluvium, found in the central and southern portions of the planning area.

In the East Mesa Planning Area, which encompasses approximately 92 square miles, landscapes are characterized by urban scenes and natural desert scenes. Most of the urban scenes are composed of commercial strip development and single family housing.

Most of the natural scenes are composed of desert lowlands, where Creosote-Palo Verde habitat is found; and desert foothills, where Palo Verde-Saguaro habitat is found. (Figure 7)

Climate in the area is similar to the rest of the County, 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 within the East Mesa Planning Area.



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	64.9	35.6	0.84
February	69.3	38.5	0.60
March	73.6	42.9	0.77
April	83.0	49.5	0.34
May	92.1	56.8	0.14
June	100.8	64.4	0.09
July	104.3	74.1	0.82
August	101.8	72.9	1.20
September	98.5	65.9	0.76
October	88.3	54.4	0.53
November	75.4	42.7	0.50
December	66.9	36.8	0.93
Total	84.9	52.9	7.52

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

b) Soils

Four major soil associations (*Figure-2 "Soils"*) lie within the East Mesa Planning Area: Gran-Rock Outcrop Lehmans, Mohall-Contine, Gilman-Estrella-Avondale, and the Laveen Association.

The Gran-Rock Outcrop-Lehmans Association covers much of the area north of McDowell Road between the west and east planning area boundaries. The Mohall-Contine Association covers small areas in three portions of the planning area: 1) south and west of McKellips and Higley Roads; 2) in the southwest corner of the study area; and 3) in the southeast corner of the planning area. The Gilman-Estrella-Avondale Association generally covers the area between the planning area boundaries to the east, west, and south of the Tonto National Forest to the southern limit of the area. The Laveen Association covers an area generally west of Recker Road, north of McKellips Road and south of Thomas Road.

The Laveen Association is well drained with nearly level to gently sloping with slopes up to one percent. The Mohall-Contine and the Gilman-Estrella-Avondale Associations have generally the same characteristics; well drained soils and nearly level with slopes of less than one percent. The Gran-Rock-Outcrop-Lehmans Association is moderately steep with slopes sometimes greater than ten percent. The individual soils that compose the associations are generally clay loams, fine and very fine sandy loams, clay and rocky outcrops. The first three associations are formed as part of floodplains and alluvial fans, while the last association is formed as a result of geological uplift.

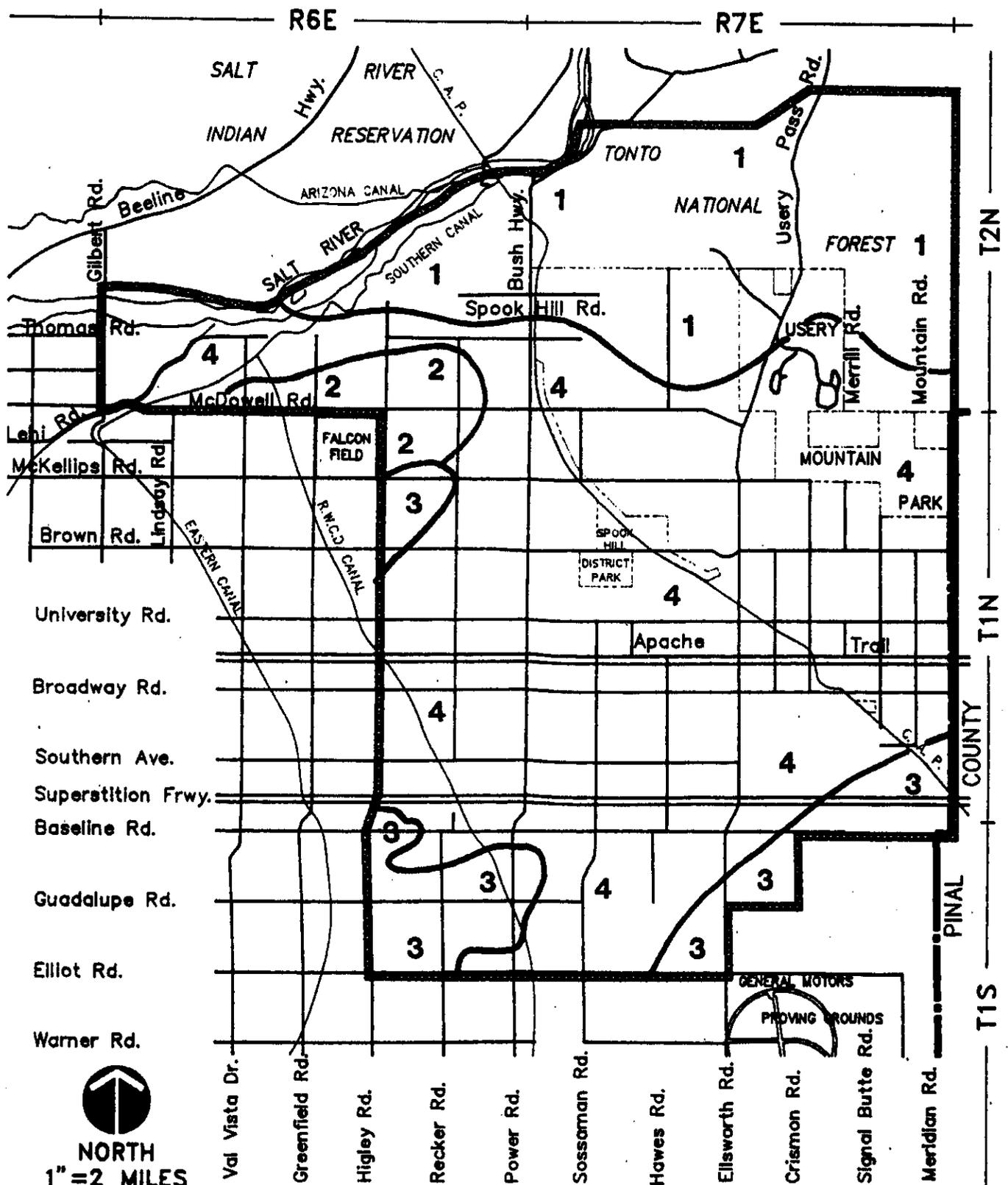
The four general soil properties which affect soil suitability for development are: permeability, available water capacity, shrink-swell potential, and corrosivity.

Permeability refers to the rate at which water moves through the soil and is usually determined by the texture of the soil. Soils with 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 one-third of the East Mesa Planning Area includes soils that 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 East Mesa Planning Area have low available water capacity.

Figure 2

EAST MESA




NORTH
 1" = 2 MILES

SOIL ASSOCIATIONS

- | | | | |
|----------|---------------------------|----------|--------------------------|
| 1 | Gran-Rock Outcrop-Lehmans | 3 | Mohall-Contine |
| 2 | Laveen | 4 | Gilman-Estrella-Avondale |

Source: U.S. DEPT. OF AGRICULTURE, SOIL CONSERVATION SERVICE

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. Approximately ten percent of the Mohall-Contine soils in the East Mesa Planning Area provide high shrink-swell conditions which may pose severe development constraints.

Corrosivity refers to a soil's capacity to induce chemical reactions that will corrode or weaken metals and concrete. Most soils in the East Mesa Planning Area are moderately corrosive. Soils with a high corrosivity may create potential problems for underground utilities if installed unprotected.

Soil characteristics can play an important role in the development of East Mesa Planning Area. For detailed information on soil types, their characteristics, and their locations in the planning area refer to the U.S. Department of Agriculture Soil Conservation Service "Soil Survey: Eastern Maricopa and Northern Pinal Counties Area, Arizona," and "Soil Survey: Aguila-Carefree Area, Arizona." Both surveys are available from the Soil Conservation Service office in Phoenix.

The characteristics of each soil association as related to potential development is illustrated in *Table-2*. Because of the locational variability of each soil type within the Associations, soil testing should take place prior to actual development, particularly in any area that might contain soils of the Mohall-Contine Association, which can pose problems for septic tank use, buildings, and road placement.

c) Topography

The East Mesa Planning Area encompasses portions of the Usery and Goldfield Mountains to the northeast. Desert foothills and plains slope from these mountains toward the west to the Salt River, and to the southwest. The highest point within the planning area is 3,312 feet on Usery Pass Mountain in the northeast, while the lowest point within the area is 1,256 feet along Gilbert Road in the northwest.

Slope is illustrated in *Figure-3*. The area generally slopes to the southwest. Slopes in the area range from less than one to greater than 15 percent. Approximately 60 percent of the area has slopes of between zero and two percent. Thirty percent of the area is sloped between two and 15 percent, and 10 percent is over 15 percent slope.

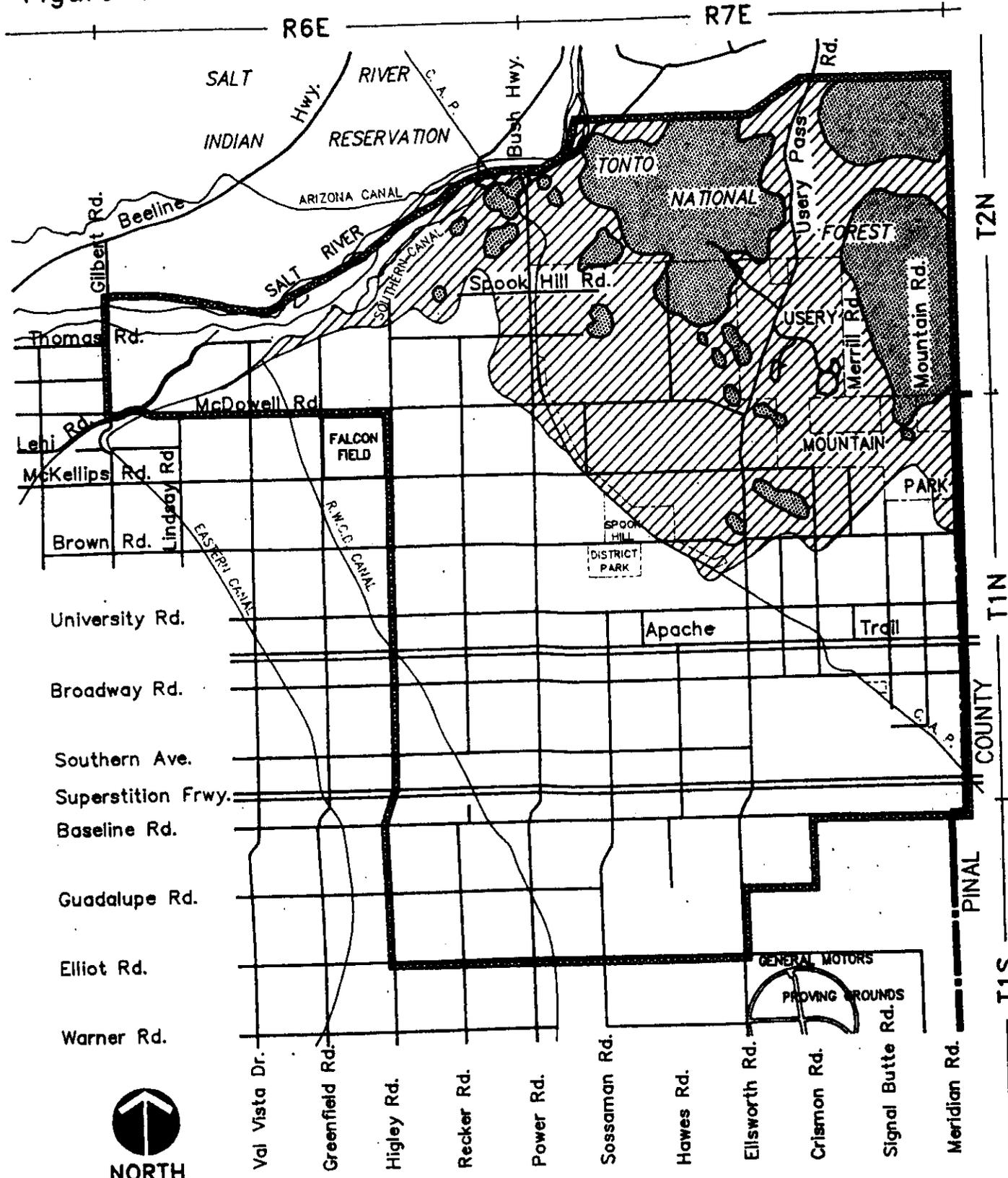
TABLE - 2
Development Constraints By Soil Association

	Laveen	Mohall- Contine	Gilman- Estrella Avondale	Gran-Rock Outcrop- Lehmans
Septic Tank Absorption Fields	Slight to Moderate	Severe	Moderate	Severe
Dwellings Without Basements	Slight	Moderate to Severe	Moderate	Moderate
Dwellings With Basements	Slight	Moderate to Severe	Moderate	Severe
Local Roads, Streets	Severe	Severe	Moderate to Severe	Moderate
Small Commercial Buildings	Slight	Moderate to Severe	Moderate	Moderate
Lawns and Land- scaping	Slight to Moderate	Moderate to Severe	Moderate	Severe

Source: U.S. Department of Agriculture, Soil Conservation Service Soil Survey: Eastern Maricopa and Northern Pinal Counties Area, Arizona, and Soil Survey: Aquila-Carefree Area, Arizona

Figure 3

EAST MESA



NORTH
1" = 2 MILES



0 - 2%



2 - 15%



15% and Greater

SLOPE

d) Geology

General geology within the 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 Usery and Goldfield Mountains. Igneous rocks composed of granite, related crystalline rocks and dacite are found as rocky outcrops. Spook Hill, Thunder Mountain, Ravens Roost, (north of McKellips Road) and the Usery and Goldfield Mountains in the northern portions of the planning area are examples.

e) Visual Features

The visual character of the East Mesa Planning Area is dominated by views toward the surrounding mountains to the north and northeast. The Usery and Goldfield Mountains to the north and the Superstition Mountains to the east are the dominant backdrop to the existing urban scene.

Several hills, such as Double Knolls and Spook Hill, are found north of Apache Trail and east of Bush Highway. These hills are important reference points as one travels along Apache Trail. Views from the foothills north of Brown Road include the Town of Gilbert to the south and the City of Mesa to the west.

f) Air and Noise Quality

Air quality is affected 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. 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.

For the East Mesa Planning Area, trends in concentration levels for three air pollutants were noted. Carbon monoxide concentrations are below central Phoenix levels and appear to be decreasing. Wind-borne particulates, while below central Phoenix levels, appear to be increasing. Finally, ozone concentrations are less than central Phoenix levels and appear to be decreasing.

Noise, depending on the decibel level (dB) and the length of exposure, can affect health, disturb sleep, affect learning ability and task performance, and property values. In addition, extended loud noise levels provide general community annoyance. Within the East Mesa Planning Area several sources of noise have been noted. These sources are categorized into three types:

- 1) Airport noise, generated by Falcon Field and Williams Air Force Base
- 2) Highway noise, generated along the Apache Trail (U.S. 60 and 89) and the Superstition Freeway (S.R. 360)
- 3) Site-specific noise, generated by sand and gravel operations along the Salt River.

1) Airport Noise

Airport noise is generated by both Falcon Field and Williams Air Force Base (WAFB). To identify noise contours and land use compatibilities, Williams AFB in 1984 completed an Air Installation Compatible Use Zone (AICUZ) study and in 1983 Falcon Field completed Land Use Compatibility Guidelines. An additional compatibility study was completed in 1988 for Williams Air Force Base as part of the MAG East Side Joint Land Use Study.

As identified in these documents, noise levels range from a 65 day/night average sound level (Ldn) to levels greater than 80 Ldn. Typical community reaction to these levels is as follows:

Noise Level (Ldn)	Community Reaction
50	No reaction, although noise is generally noticeable
65	Sporadic complaints
65-75	Widespread complaints, threat of legal action or appeals to local officials to stop noise

75 +

Vigorous community action

Source: Environmental Impact Analysis Handbook (Ray and Wooten)

Falcon Field noise contours generally cover most of the northwestern portions of the planning area. Noise contours are generally found northeast and northwest of Falcon Field, with a 75 Ldn found near the intersection of Higley Road and McDowell Road and as far east as Power Road.

Williams Air Force Base noise contours cover a small portion of the southwestern corner of the planning area. Noise contours range from 65 Ldn, bordered by Power Road on the east and Baseline Road on the north, to 75 Ldn found at the intersection of Recker and Elliot Roads.

The "Eastside Joint Land Use Study", completed in April, 1988, was a noise exposure and land use compatibility study for the area around Williams Air Force Base. This study recommended that:

- 1) Noise contours for land use planning purposes reflect 1992 aircraft operations at the Base.
- 2) Airport District Zones incorporated into the Maricopa County Zoning Code be maintained at a minimum.
- 3) New residential development should be strongly discouraged between the 65 and 70 Ldn contour; prohibited between the 70 and 75 Ldn contours, except for existing developments; and new residential developments be prohibited within the 75 Ldn contour.
- 4) The 80 Ldn contour should be reserved for agricultural, open space, or outdoor recreational activities, and all other uses restricted.
- 5) A Military Overflight Area be established for public notification.

Released to the public in early 1991 was the announcement that Williams Air Force Base would be closing within a few years.

2) Highway Noise

Highway noise is generated along the Apache Trail, the Superstition Freeway and other major streets, such as Power Road. Mitigation techniques for this type of noise range from policies such as heavy vehicle restrictions or speed limit reductions, to physical controls, such as noise walls and berms or development buffer strips.

3) Site-specific Noise

Specific site noise is generated by sand and gravel machinery and trucking operations along the Salt River. Mitigation techniques for this type of noise range from policies such as noise control ordinances or limitations on operating hours, to physical controls such as landscaping, walls, or berms.

Hydrology:

a) Surface Water

Flooding and street drainage problems in the East Mesa Planning Area have been frequent, and at times, damaging. The flooding problems result generally from high intensity summer storms. Past agricultural and land development activities have covered over channels that conveyed flows. The concentration of sheet flows has led to large flows being dumped into channels that lack the capacity to carry these flows. In 1984, significant flooding occurred in the eastern portion of the planning area resulting in the inundation of numerous homes.

Structural measures developed to reduce flooding include: the Spook Hill Dam, Pass Mountain Diversion, Signal Butte Floodway, Signal Butte Dam, Bulldog Floodway, Apache Junction Dam, and Apache Junction Floodway, which are all located north of University Drive, between Bush Highway and Tomahawk Road. The East Maricopa Floodway, located along the eastern boundary of the Roosevelt Water Conservation District (RWCD) Canal, between Elliot Road and McKellips Road, is complete with the confluence of the Gila River to Apache Trail.

The Flood Control District of Maricopa County has also implemented an Area Drainage Master Study (ADMS) program to analyze watersheds for areas experiencing localized flooding following rainstorms. The East Mesa Planning Area is analyzed using two studies, the Spook Hill ADMS and the East Maricopa County ADMS. At this time, the Area Drainage Master Studies are complete and should be referenced when development is proposed.

As illustrated in *Figure-3*, the central and southern portions of the planning area are relatively flat with slopes between zero and two percent. The northern portion of the planning area is hilly and mountainous with many slopes greater than 15 percent. The Buckhorn-Mesa structures solve part of the flooding problem, although additional planning and drainage infrastructure may be required to minimize local drainage problems.

One-hundred year floodplains, as designated by the Flood Insurance Administration (*Figure-4*), are limited to two areas. One area contains portions of the Salt River beginning west of Bush Highway and ending at Gilbert Road. The other area begins at Higley Road, south of Apache Trail, and extends southeast to Highway 360, following the RWCD canal. Further studies are needed to determine the one-hundred year floodplains for existing washes. There are no scheduled dates for conducting these studies at this time.

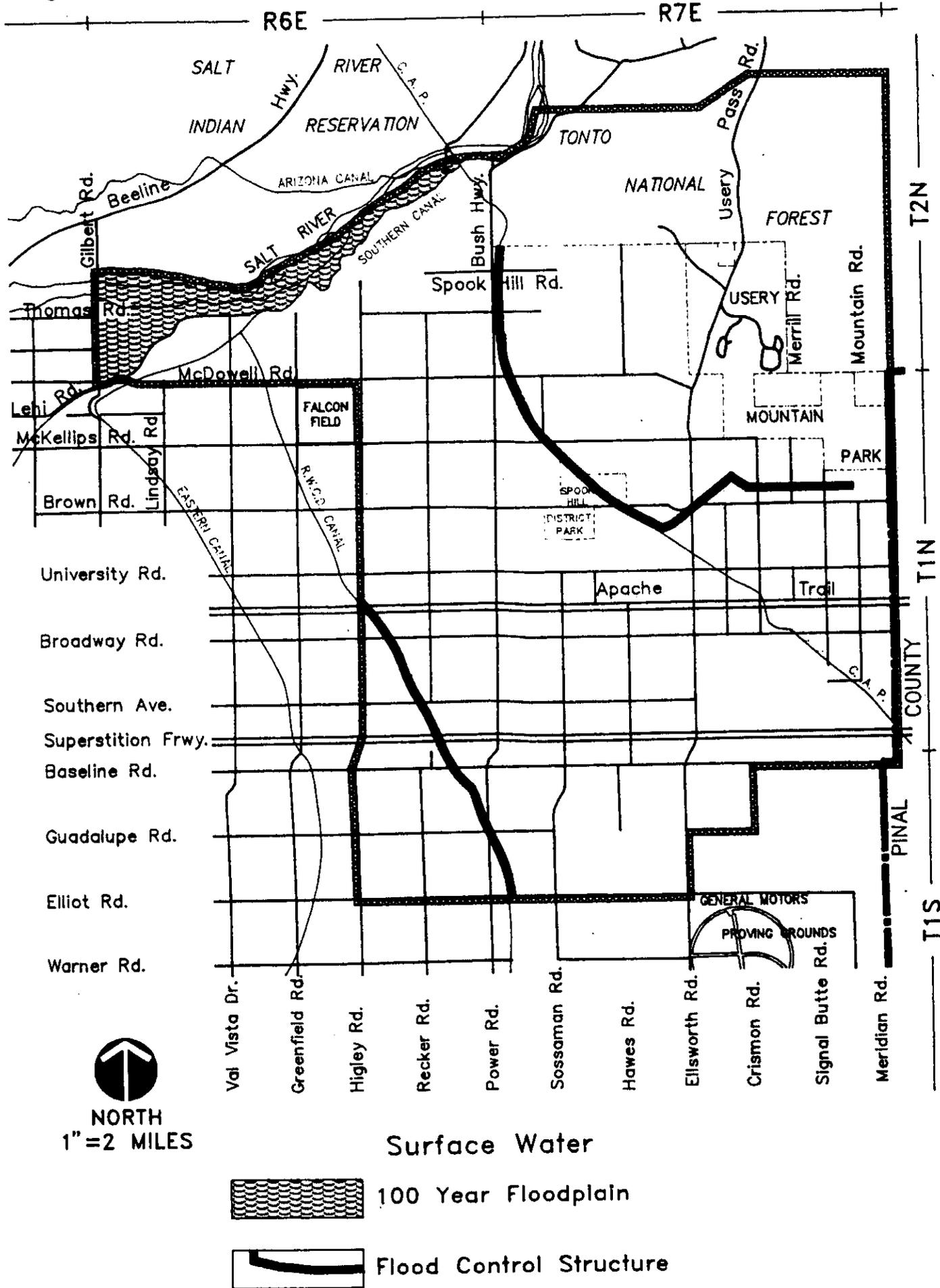
b) Groundwater

The estimated amount of recoverable groundwater within the planning area ranges from less than 30,000 to 60,000 acre-feet per square mile (*Figure-5*). The relative amount of recoverable groundwater is comparable to most other areas of Maricopa County. Groundwater levels declined as much as 200 feet from 1945 to 1977 in some parts of the planning area. Since 1977, groundwater levels have risen about 25 feet, except in the eastern most part of the area. Much of this increase is due to heavy rainfall and retirement of farmland (Phoenix Active Management Area Management Plan 1990-2000). Current depth to groundwater ranges from approximately 300 to 600 feet below the surface level.

Figure-6 shows several areas of contaminated groundwater that exist within the East Mesa Planning Area. High pesticide levels have been found north of McDowell Road between Gilbert and Recker Roads. The chemical DBCP has been detected at levels up to 2 unit grams per liter (allowable limit is .025 mg/l). Another area at Guadalupe and Hawes Road has arsenic levels above 50 milligrams per liter. Volatile organic compounds (VOCs) are found in high levels in a small area by the Southern Canal between Higley and Recker Roads. VOCs are usually from industrial activity and can have serious health effects. Total dissolved solids, which can affect the taste of water, exceed the allowable limit of 500 milligrams per liter over much of the area. (Source: Arizona Department of Water Resources, Phoenix AMA Management Plan 1990-2000).

Figure 4

EAST MESA




 NORTH
 1" = 2 MILES

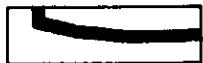
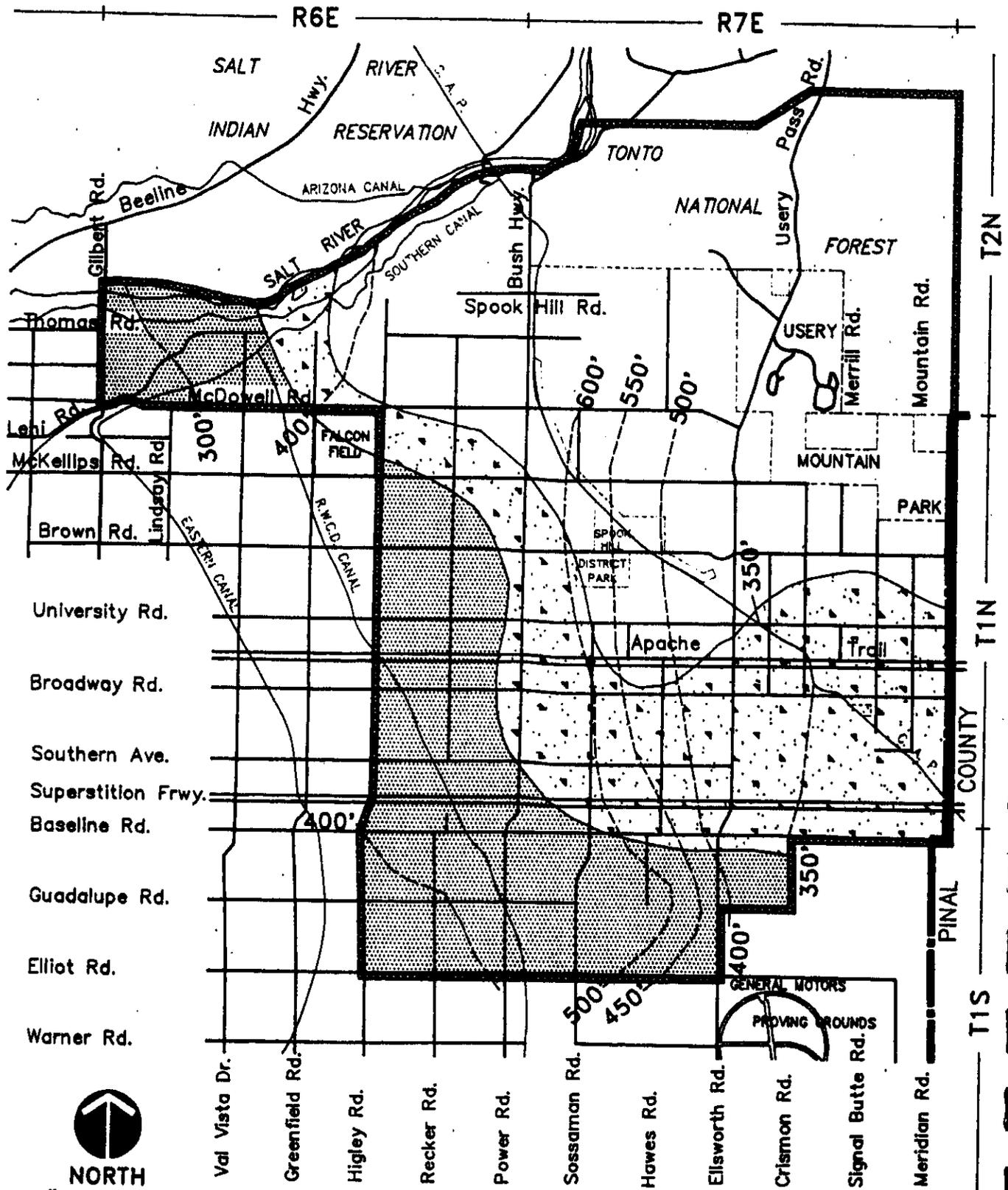
-  Surface Water
-  100 Year Floodplain
-  Flood Control Structure

Figure 5

EAST MESA



NORTH
1" = 2 MILES

RECOVERABLE GROUND WATER

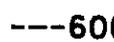
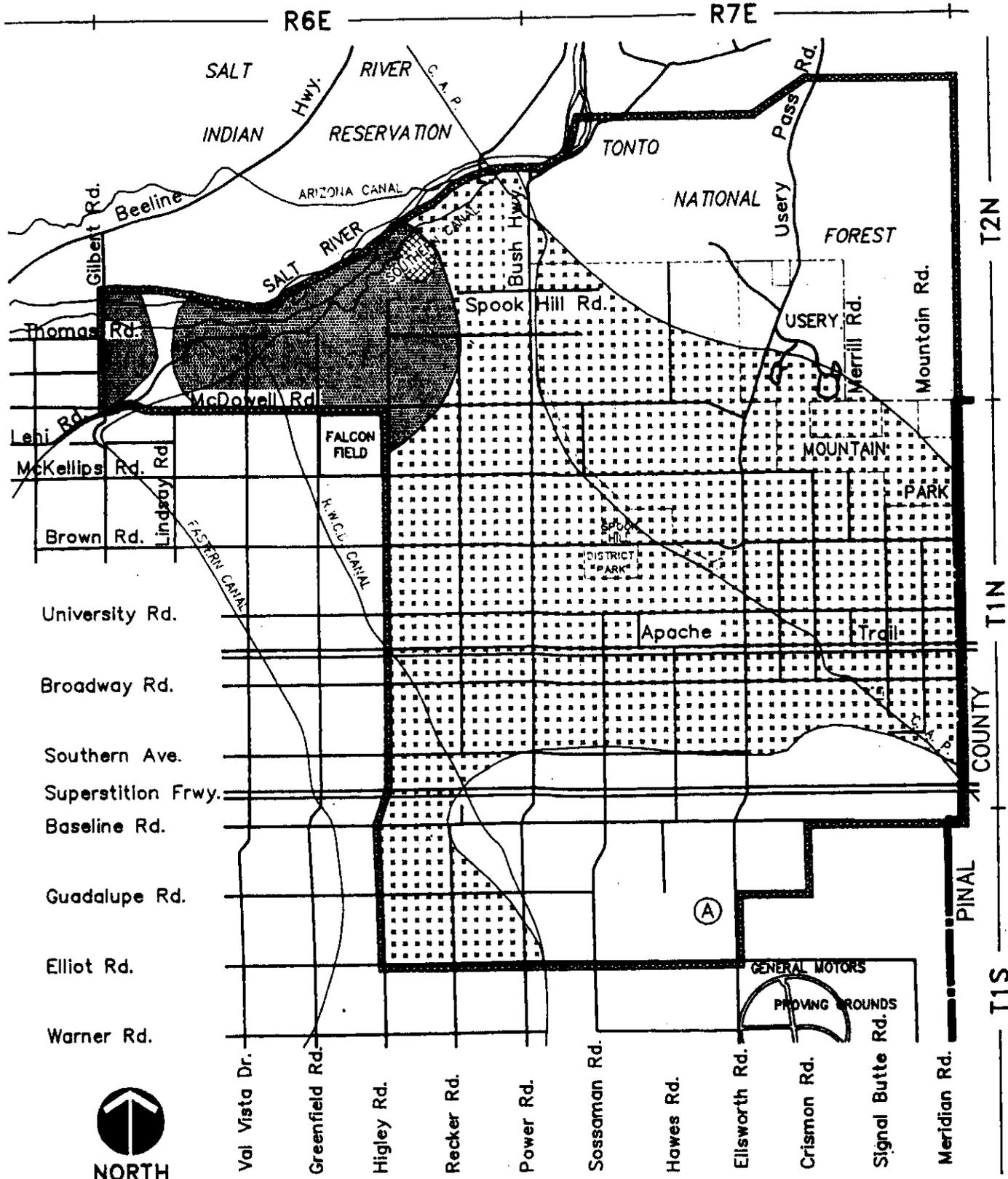
-  30,000-60,000 Acre-Feet
-  Less than 30,000 Acre-Feet
-  Rocks Containing Only Small Amounts
-  ---600' Depth To Water

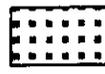
Figure 6

EAST MESA




 NORTH
 1" = 2 MILES

GROUNDWATER QUALITY

-  Pesticides Greater Than Detection Limits
-  Total Dissolved Solids Greater Than 500mg/l
-  Volatile Organic Compounds Approximate Extent of Contamination
-  Arsenic Greater Than 50mg/l

Vegetation and Wildlife:

This section of the Land Use Plan describes the natural vegetation and wildlife in the East Mesa Planning Area.

a) Vegetation

The East Mesa Planning Area is located within the Sonoran Desert. Two of the three native plant communities, Palo Verde-Saguaro and Creosote, are found in the study area. (*Figure-7, "Natural Vegetation"*, illustrates the locations of these two plant communities). The Palo Verde-Saguaro community is found throughout the central and northern portions of the study area, and is the most scenic of the Sonoran Desert communities. 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, Prickly Pear, and several other varieties. High concentrations of trees and shrubs can be found along the local drainage ways of the area.

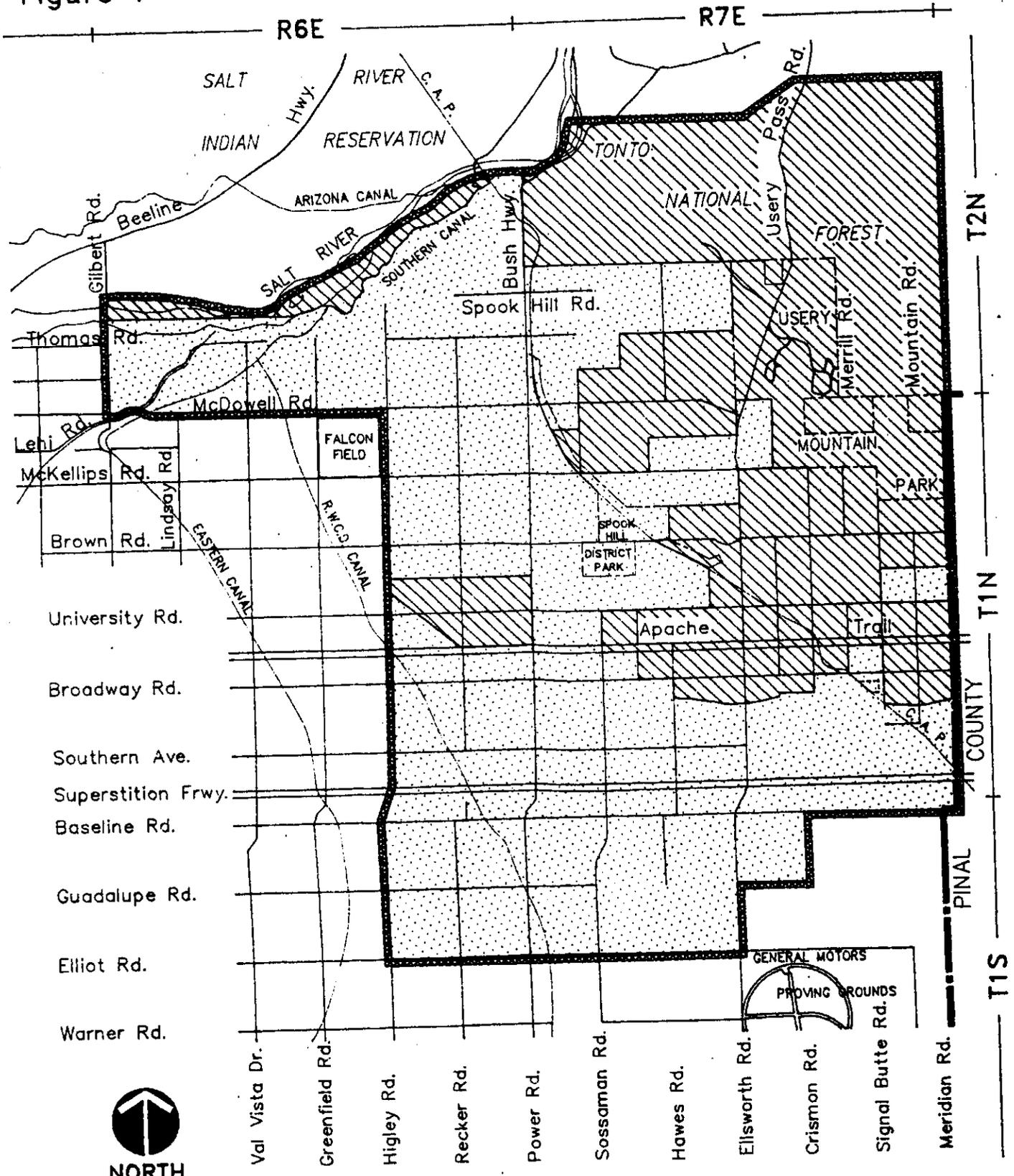
The Palo Verde-Saguaro community within this area is transitional in character and may be considered with the Palo Verde-Bursage category in this community. The Palo Verde-Saguaro is the most scenic of the Sonoran Desert plant communities and therefore highly popular for development. The soils when disturbed, however, will usually be invaded by such plants such as Desert Broom and some species of Mustard. Careful consideration should be given for all types of development so that they are compatible with the Palo Verde-Saguaro plant community. When development requires disturbance of the community, using other natural plant materials may be appropriate.

The Creosote community is found in the extreme northwestern and southern parts of the East Mesa Planning Area, and is considered to be the least scenic of the two plant communities. Creosote Bush is the dominant plant of this community, and is also transitional in character between Palo Verde and Mesquite communities. With exception to the local drainage ways, this plant community is to be viewed unpreferentially in terms of preservation.

There may be plants within these two plant communities which by law (Arizona Revised Statutes, Title 3, Chapter 7, Article 1) can only be moved from one location to another after receiving 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 prior to taking action.

Figure 7

EAST MECA




NORTH
 1" = 2 MILES

NATURAL VEGETATION

-  Palo Verde - Saguaro Community
-  Creosote Community

Source: STATE DEPT. OF HORTICULTURE

The protected plants within this community are:

Cacti:

Barrel
Mesa Verde
Prickly Pear (Opuntia)
Pin Cushion

Cholla
Beehive
Neddle "Mulee"

Saguaro
Hedgehog
Night Bloom-
ing Cereus

Trees and Shrubs:

Agave (Century Plant)
Desert Holly
Desert Spoon

Flannel Bush
Ocotillo
Yucca

b) Wildlife

Due to the rapid development in the East Valley, the only substantial wildlife habitat remaining within the planning area exists along the Salt River above Granite Reef Dam and in the Usery and Goldfield Mountains. All of these areas are currently protected within the boundaries of the Tonto National Forest or Usery Mountain Recreation Area.

Mule Deer and Mountain Lion can be found in low densities in these protected areas. Javelina can be found in medium densities throughout much of the northeastern portion of the planning area. Bighorn sheep are not found within the planning area except as incidental sightings along the western fringes of the Goldfield Mountains.

Small game and nongame species include: Coyotes, Foxes, Cottontail Rabbits, Gamble's Quail, Morning and Whitewinged Doves, and numerous nongame species such as raptors and migratory songbirds.

The following special status species have been documented in or near the planning area:

- 1) Yuma Clapper Rail (*Rallus Longirostris Yumanensis*), state threatened, federally endangered, found along the Salt River in the area of the Verde confluence of the Salt and Verde Rivers.
- 2) Mississippi Kite (*Ictinia Mississippiensis*), state candidate species, found a few miles north of the planning area on the Lower Verde River.
- 3) Desert Tortoise (*Xerobates Agassizii*). The Desert Tortoise is a candidate species on the state's threatened native wildlife 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.
- 4) Bald Eagle (*Haliaeetus Levcocephalus*), state and federally endangered, found nesting and foraging along the Salt and Verde Rivers.

Continued protection in the northeastern section of this planning area; in the Usery Mountains, the Goldfield Mountains, and the Riparian habitat along the lower Salt River by Maricopa County and the Forest Service; is essential to the maintenance of these unique wildlife species.

Archaeology:

Arizona, and especially Maricopa County, has a high concentration of archaeological sites. **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 are confidential to protect the resource but may be examined on a project basis. Since a systematic reconnaissance field survey of the County has not been conducted to date, we must assume that unreported cultural resources, including historic resources, exist within the study area.

Prior to development, excavation, or grading in the planning area, archaeological historical review should be accomplished in order to determine the full archaeological potential.

Policy Implications:

This section concerning natural resources describes the key issues identified in the previous sections, which should be addressed during the planning process.

a) Physical Characteristics

Some soils within the planning area pose severe development constraints, such as slow permeability and high shrink-swell conditions.

Slopes greater than 15 percent occur primarily in the Usery and Goldfield Mountain areas.

Visual features such as views towards the Usery and Goldfield Mountains to the north, the Superstition Mountains to the northeast, and Double Knolls and Spook Hill exist in the planning area.

Noise levels from airports such as Williams Air force Base and Falcon Field can be high at times.

b) Hydrology

Several flood control structures have been completed or are planned.

Major drainage ways and washes occur in the area. An opportunity exists to develop these areas as parks, open space, or preservation areas.

c) Vegetation and Wildlife

Undisturbed vegetation and wildlife habitats exist in the northern parts of the planning area.

d) Archaeology

Several prehistoric sites exist within the planning area.

SOCIAL AND ECONOMIC CHARACTERISTICS

In describing the Social and Economic Characteristics of the East Mesa 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 needs for the East Mesa Planning Area.

Population, Age, Sex, and Ethnic Composition:

The following data highlight population characteristics for unincorporated areas of the East Mesa Planning Area. The narrative and tables which follow provide historic and projected population/housing unit data to the year 2010. Comparative 1985 U.S. Census data is also reviewed for age, sex and ethnic distributions of the population for both the East Mesa Planning Area and Maricopa County. In 1970 the population of the entire East Mesa Planning Area was 13,135. From 1970 to 1980, population increased by 181 percent to 36,930. From 1980 to 1985, population of the entire area (including incorporated areas) increased another 25.8 percent to 46,445. Population projections in *Table-3*, of the unincorporated portions of the planning area from 1985 to 2010, show the East Mesa Planning Area increasing from a residential population of 23,592 to 70,457, about 200 percent, while Maricopa County's population is projected to increase about 90 percent.

Although a resident population constitutes the vast majority of the East Mesa Planning Area and County population, there is also a large and growing seasonal population base not counted in *Table-3*. Seasonal population in East Mesa presently accounts for 18.2 percent of the estimated seasonal population total in Maricopa County. In spite of the projected increase, by the year 2010, estimated seasonal population is expected to decline slightly to about 17.8 percent of the Maricopa County total.

In 1985 there were an estimated 14,337 resident housing units in the unincorporated portions of the East Mesa Planning Area with an average of 2.27 persons per unit. Housing unit projections from 1985 to 2010 are provided in *Tables-4* and *5*.

**TABLE - 3
Total Resident Population Projections**

<u>Area</u>	<u>Census 1985</u>	<u>Mid-Year 1990</u>	<u>Mid-Year 1995</u>	<u>Mid-Year 2000</u>	<u>Mid-Year 2005</u>	<u>Mid-Year 2010</u>
East Mesa	23,592	29,854	37,148	51,774	64,573	70,457
Maricopa County	1,837,954	2,132,975	2,434,932	2,800,960	3,132,062	3,490,434

Source: Maricopa Association of Governments, Transportation and Planning Office, 1989.

**TABLE - 4
Total Resident Housing Units**

<u>Area</u>	<u>Census 1985</u>	<u>Mid-year 1990</u>	<u>Mid-Year 1995</u>	<u>Mid-Year 2000</u>	<u>Mid-Year 2005</u>	<u>Mid-Year 2010</u>
East Mesa	14,337	17,611	18,999	25,491	30,307	33,188
Maricopa County	886,186	945,807	1,082,830	1,239,360	1,384,365	1,545,062

Source: Maricopa Association of Governments, Transportation and Planning Office, 1989.

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

<u>Area</u>	<u>Census 1985</u>	<u>Mid-Year 1990</u>	<u>Mid-Year 1995</u>	<u>Mid-Year 2000</u>	<u>Mid-Year 2005</u>	<u>Mid-Year 2010</u>
East Mesa	2.27	1.70	1.70	2.03	2.13	2.12
Maricopa County	2.62	2.30	2.24	2.26	2.26	2.25

Source: 1985 U.S. Special Census and Maricopa Association of Governments, Transportation and Planning Office, 1989.

Table-6 illustrates the large retirement population in the planning area. As shown in **Table-7**, the East Mesa Planning Area contains a significantly lower percentage of non-white population than the rest of Maricopa County. **Tables-6** and **7** reflect data for census tracts which form a slightly larger area than the East Mesa Planning Area. According to MAG and census data, the census tract contained 35,548 more residents than the MAG planning area in 1985.

Population Projection Methodology:

Maricopa Association of Governments (MAG) 1989 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).

In allocating population through the top-down methodology, the process begins with annual updated Maricopa County population projections to the year 2040, 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, Maricopa County, MAG, the Cities of Phoenix and Tucson, and numerous Native American tribes.

With adoption of the annual County population projections in five-year intervals (1985-1990, etc.) to the year 2015, the new population change calculated for each five-year interval is allocated to planning areas of the County. This allocation, developed using the Mountain West Research Southwest, Inc. methodology, is applied to the population changes using specific growth proportions. 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 that justification is presented and accepted.

TABLE - 6
Population Distribution by Age
and Sex in Percentages

	Male	Female	Under 5	5-18	19-44	45-64	65+
East Mesa	48.1	51.9	4.8	13.7	22.5	22.9	36.1
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
East Mesa	89.9	0.4	1.0	2.9	5.7
Maricopa County	77.1	3.3	1.5	1.7	16.3

Source: 1990 U.S. Census.

TABLE - 8
Household Income Distribution
in Percentages and Median Income

Area	Less Than \$7,500	\$7,500 14,999	15,000 24,999	25,000 34,000	35,000 & over	Median Income
East Mesa	21.3	31.8	27.6	12.5	6.8	14,231
Maricopa County	17.4	24.1	27.9	16.8	13.8	17,728

Source: 1980 U.S. Census

The County and all communities have an opportunity to evaluate the projections made each year. As a result, population change may be closely monitored. If the initial long-range planning projections need adjustment, they may be considered at this time.

Economic Characteristics:

Tables-8 through 10 illustrate income, education, and labor force characteristics of the unincorporated East Mesa Planning Area in contrast to Maricopa County. Table-8 shows that median income in the East Mesa Planning Area is lower than in the remainder of the County. This is consistent with data provided in Table-6, showing an older population base in the East Mesa Planning Area.

Also, as would be expected with an older population, the East Mesa Planning Area has a lower, but only slightly lower, achieved educational level than the County average, as shown in Table-9.

Consistent with an older population base, the East Mesa Planning Area also has a smaller percentage of population in the labor force and a higher unemployment rate than the County, as reflected in Table-10.

Table-11 indicates that the unincorporated portion of the East Mesa Planning Area has a small employment base, but this base is projected to increase substantially by 2010 in response to rapid projected population growth in the area as well as employment opportunities stemming from expansion of existing facilities. To illustrate, Table-11 shows that the 1985 employment base in the East Mesa Planning Area represented 0.3 percent of County employment, but eventually the East Mesa employment base will increase to 0.5 percent of County employment by the year 2010.

Area-Wide Economy/Economic Base:

The economic base of the approximately 92 square-mile East Mesa Planning Area is relatively modest at the present time. A great deal of the area is undeveloped, with major tracts south of the Superstition Freeway still used as agricultural land. Of a 1980 population (civilians 16 and over) of some 36,534 persons, approximately 11,851 were employed. However, 1985 total employment in the East Mesa Planning Area itself was a little more than 2,500 (unincorporated area). Clearly, thousands of residents commute to jobs in central Mesa, Chandler, Tempe, and Phoenix. In 1980, for example, about 59

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

Area	<u>Years Completed</u>					Median
	0-8	9-11	12	13-15	16+	
East Mesa	15.9	17.3	38.5	17.3	11.0	12.4
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

Area	Civilians 16 & Over	Civilian Labor Force	Employed	Unemployed Rate	Civilian Labor Force Partici- tion Rate
East Mesa	36,534	12,600	11,851	5.9%	34.5%
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	Mid-Year 1985	Mid-Year 1990	Mid-Year 1995	Mid-Year 2000	Mid-Year 2005	Mid-Year 2010
TOTAL EMPLOYMENT						
East Mesa	2,573	2,790	3,133	6,282	8,336	9,793
Maricopa County	905,786	1,027,007	1,219,907	1,453,731	1,667,757	1,893,732
RETAIL EMPLOYMENT						
East Mesa	1,037	1,460	1,597	3,501	4,605	5,407
Maricopa County	164,366	239,720	283,273	339,456	422,847	472,607

Source: Maricopa Association of Governments, Transportation and Planning Office, May, 1989.

percent of the employed area residents worked outside the planning area and the City of Mesa. As a point of comparison, approximately 17 percent of the employed residents of the City of Phoenix work outside that city.

a) Industrial Employment

The McDonnell Douglas Helicopter facility is by far the largest East Mesa Planning Area employer. There are also some half dozen other industrial opportunities. The most noteworthy employer's are Talley Industries, located immediately adjacent to the East Mesa Planning Area south of McDowell Road at Falcon Field, and the TRW safety systems facility located southeast of the East Mesa Planning Area near Williams Air Force Base.

Additionally, two other relatively new high-quality industrial facilities (each < 50,000 square feet) are situated in the planning area north of McDowell Road between Higley Road and 56th Street. With the exception of sand and gravel operations in the Salt River floodplain, few, if any, industrial facilities are to be found. Of note are three incubator facilities with several vacancies which are northeast of Greenfield Road between Thomas and McDowell Roads.

b) Retail Employment

Although retail employment in the East Mesa Planning Area numbers approximately 1,460 at present, there are few major commercial nodes. The strip of commercial development along Apache Trail (U.S. Highways 60 and 89) and the new Superstition Springs Mall are the centers of commercial activity.

Residential, Commercial, and Industrial Demand:

The following calculations have been made using existing county-wide averages from 1989 MAG population and socioeconomic database.

a) Residential Demand

Using the projections for housing units listed in *Table-4*, 33,188 units will be in the unincorporated portions of the East Mesa Planning Area by the year 2010. It is assumed that 14,337 housing units existed in 1985. Based on these figures, and assuming residential development takes place at an average density of four dwelling units per acre, 4,713 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 increase. As noted in *Table-3*, there will be 70,457 people in the unincorporated portions of the planning area by 2010. Based on this projection, it is estimated that 740 acres of commercial development will be required. Using a ratio of 5.5 acres/1,000 people for retail trade and 5.0 acres/1,000 people for general commercial land use, 388 acres and 352 acres will be needed, respectively.

c) Industrial Demand

Demand for industrial land use is calculated using the same method as for commercial land use. Based on the resident population projection of 70,457 people by the year 2010, it is estimated that 564 acres of industrial development will be required. This assumes a ratio of 8.0 acres/1,000 people and applies only to the presently unincorporated portions of the East Mesa Planning Area.

Economic Base Potential:

Factors influencing the pace and pattern of growth and development in the East Mesa Planning Area include: (a) electrical power cost; (b) water availability; and (c) the Red Mountain, San Tan, and Superstition Freeway development.

Of major economic importance is the fact that the entire planning area is provided electricity by Salt River Project. Depending on what occurs with respect to rate differentials between Salt River Project and Arizona Public Service over this document's planning horizon, cheaper Salt River Project power could be a major force driving development. Arizona Public Service rates presently are a constraint on commercial and industrial development.

Water availability in this largely "Off Salt River Project" area is also a major issue. However, availability appears to be less critical due to an aggressive water rights acquisition program by the City of Mesa, which supplies water to a large portion of the planning area. The availability of a domestic sewer system will also influence the location and intensity of development.

Most of the East Mesa Planning Area lies within the boundaries of the Mesa General Plan area, except for the southwest portion which lies within the

Gilbert Planning Area. Consequently, most of the area is a likely annexation target by the City of Mesa or the Town of Gilbert.

As noted, the Red Mountain, San Tan, and Superstition Freeway projects can also be expected to be major stimuli to development, employment and population growth in the planning area. Although region-wide priorities are undetermined, the priority segment serving the planning area is likely to be the Red Mountain extension of the East Papago Expressway. The City of Mesa has aggressively pursued engineering alignment studies, right-of-way cross sections, and partial right-of-way acquisition for the Red Mountain Project east of Gilbert Road to the vicinity of Ellsworth Road. This section may ultimately be placed on an accelerated construction timetable.

These events could be expected to accelerate population growth in the planning area, which will in turn stimulate some industrial, as well as office and mixed-use development pressures, especially near major interchanges along the Superstition Freeway and potentially along the Red Mountain Freeway. Additional pressure will be present at major street intersections, particularly along Power Road and Apache Trail.

Policy Implications:

During the analysis of the data collected on social and economic characteristics, a number of issues were identified that should be addressed as the County develops its Land Use Plan. The following social and economic issues should be resolved or addressed.

a) **Economic Base**

A determination should be made of the type, amount and location of the area's economic base outside of the incorporated communities.

b) **Residential, Commercial, and Industrial Development.**

As urban growth continues in this area, a balanced land use will be important to attain.

LAND USE AND ZONING

In describing land use and zoning for the East Mesa Planning Area, the following eight sections are presented:

- General Pattern of Land Development
- Zoning
- Public Property Ownership
- Municipal Annexation Potential
- Transportation
- Public Facilities and Utilities
- Locations of Special Development Concerns
- Policy Implications

The purpose of this section of the Land Use Plan is to document existing land uses and zoning regulations, to note public property ownership and locations of special concern, and to describe transportation and public facilities in the East Mesa Planning Area.

General Pattern of Land Development:

Figure-9, "Generalized Existing Land Use," illustrates the generalized land use pattern within the East Mesa Planning Area. A review of this map indicates that the majority of the area's developed land use is located between Brown Road to the north, and Southern Avenue to the south. Nearly 50 percent of the unincorporated planning area (outside of the recreation areas) is either undeveloped or used as agricultural land. Commercial development is occurring in a linear pattern along both sides of Apache Trail. In most locations, this commercial development extends only one block from the main roadway. This type of commercial development is designed for the motorist's convenience. Hub development caters to the pedestrian and utilizes land more efficiently. A number of very small commercial uses are scattered throughout the area, principally along arterial streets such as University Drive and Broadway Road, and serve immediately adjacent neighborhoods.

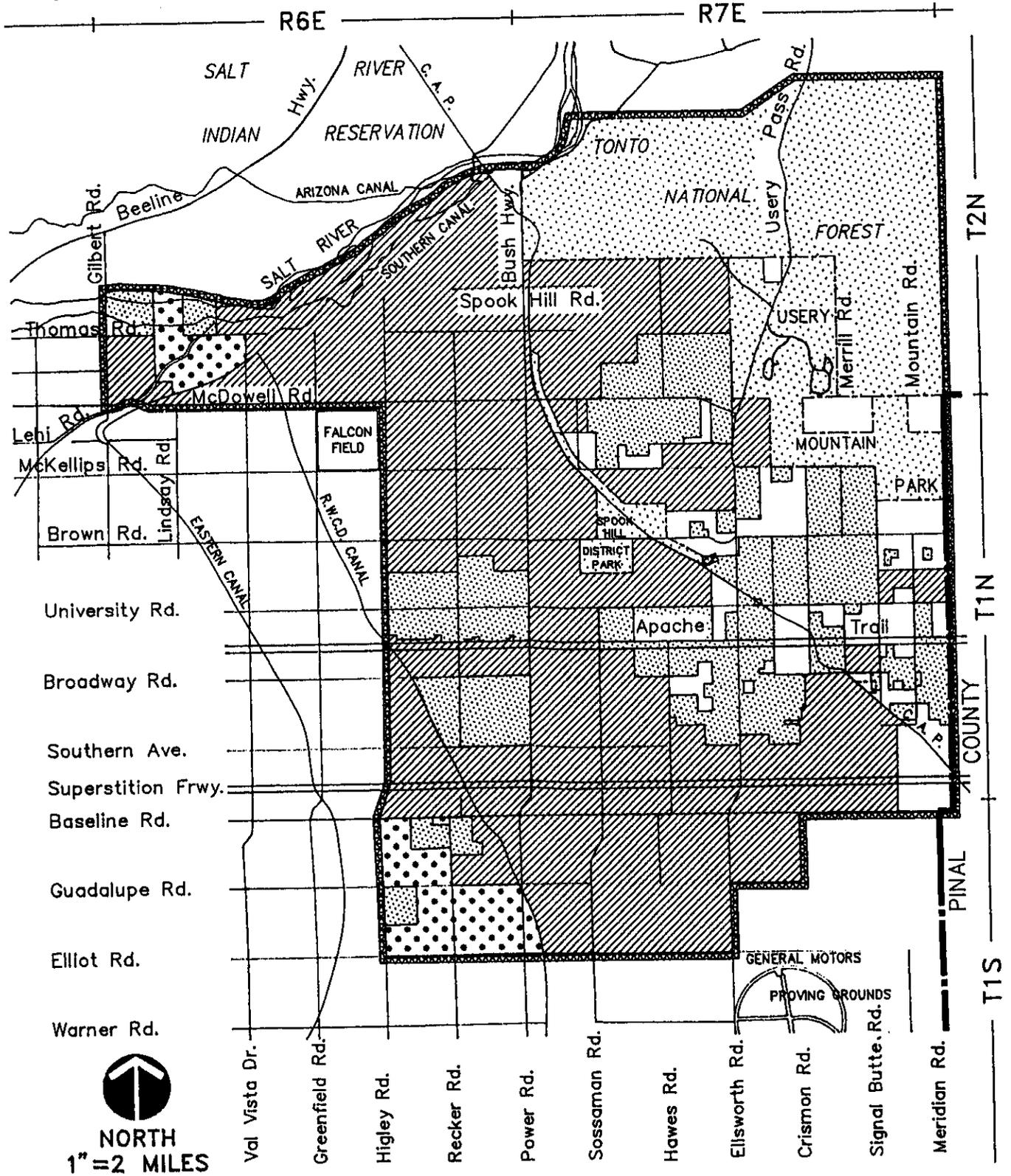
Currently, the only industrial development in the unincorporated area are sand and gravel operations along the Salt River.

Three large public open spaces lie within the planning area. The largest, Tonto National Forest, is located in the extreme northeastern portion; covering 13.5 square miles within the East Mesa Planning Area. South of the Tonto National Forest lies Utery Mountain Recreation Area. This area covers approximately 5.25 square miles and provides various recreational opportunities for nearby residents.

Another regional park in the East Mesa Planning Area is the Spook Hill Recreation Area and is located north and south of the intersection of Sossaman Road and Brown Road. This park covers approximately 1,017 acres and is

Figure 9

EAST MESA




NORTH
 1" = 2 MILES

GENERAL EXISTING LAND USE

-  Vacant
-  Agriculture
-  Recreation
-  Incorporated
-  Developed

Source: MARICOPA COUNTY PLANNING & DEVELOPMENT

maintained by the City of Mesa. A more detailed description of the park and recreational facilities is provided in "Public Facilities and Utilities".

With the exception of the previously described public open space areas, most of the land north of Brown Road is either developed at residential densities of less than one dwelling unit per acre or is left substantially in a natural state.

The portion of the planning area south of Baseline Road contains some of the most productive agricultural land in the Valley. This area has a long history of intensive agricultural uses where citrus, cotton and alfalfa crops predominate.

The remaining portion of the planning area consists primarily of single family residential uses at an approximate density of one dwelling unit per acre. An exception would be the area bounded by University Drive on the north, Baseline Road on the south, Sossaman Road on the west and Meridian Drive on the east, which is developed predominately with mobile home parks and subdivisions.

Zoning:

Maricopa County enforces a zoning ordinance to regulate land development. The following provides an overview only. Specific uses need to be evaluated using the complete Maricopa County Zoning Ordinance. Established zones are described in part as follows, and are illustrated in *Figure-10*, "Existing Generalized Zoning".

1) **Rural Zoning District (Rural-190):**

Permitted Uses: One dwelling unit per 190,000 square feet of site; agricultural activities

2) **Rural Zoning District (Rural-70):**

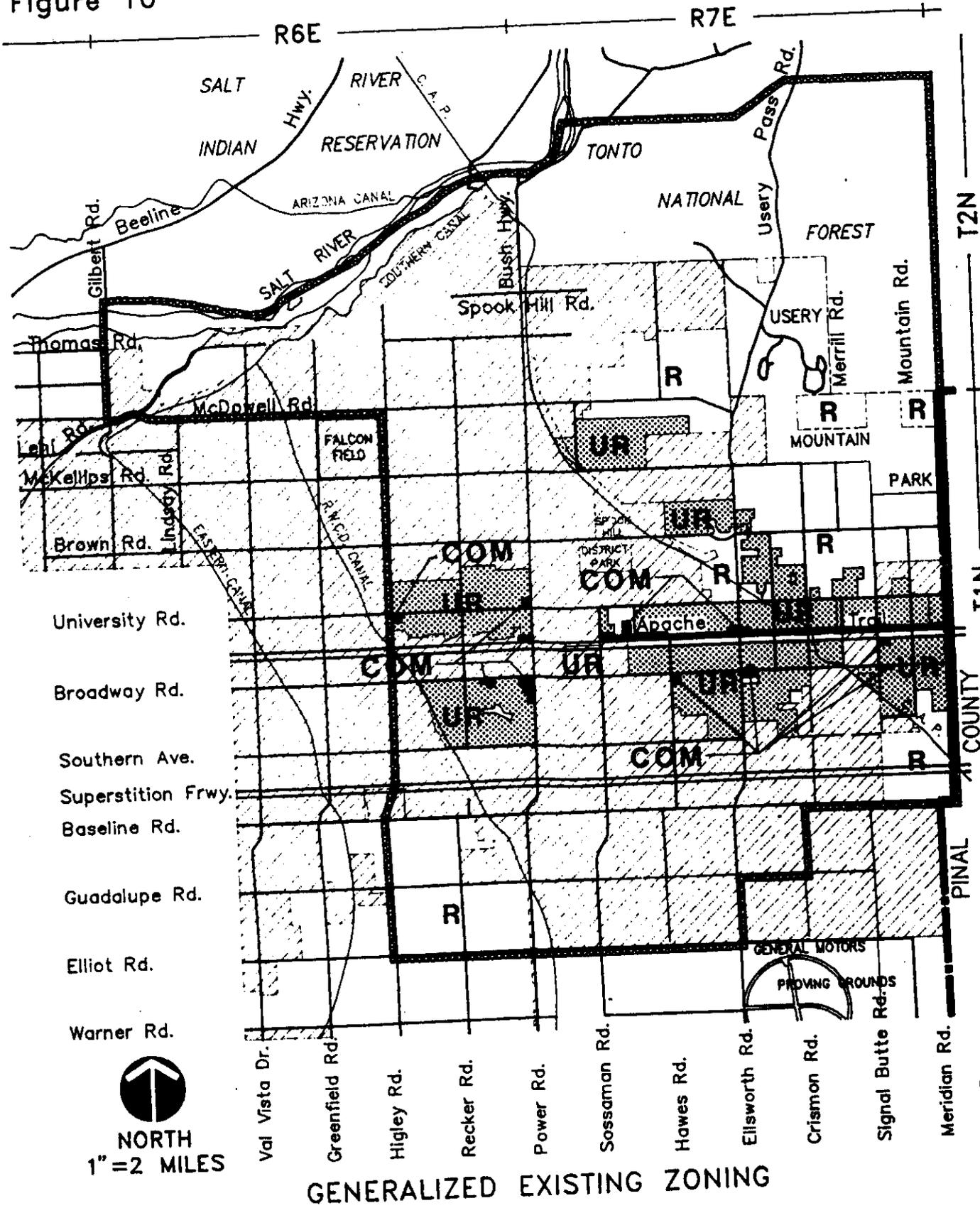
Permitted Uses: One dwelling unit per 70,000 square feet of site; agricultural activities

3) **Rural Zoning District (Rural-43):**

Permitted Uses: One dwelling unit per one (1) acre of site; agricultural activities

EAST MESA

Figure 10




 NORTH
 1" = 2 MILES

GENERALIZED EXISTING ZONING

- | | | | |
|-------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------|--------------------|
|  | R Rural Residential |  | COM Commercial |
|  | UR Urban Residential |  | Incorporated Areas |

- 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
- 9) Single Family Residential Zoning District (R1-6):
Permitted Uses: One dwelling unit per 6,000 square feet of site
- 10) Limited Multiple Family Residential Zoning District (R-2):
Permitted Uses: One dwelling unit per 4,000 square feet of site;
two-family dwelling. Limited multiple 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 develop-
ment site plan approved by the Board of
Supervisors

- 15) Commercial Office Zoning District (C-0):
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, art and music instruction
- 18) General Commercial Zoning District (C-3):
Permitted Uses: Retail and wholesale commerce and commercial 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):

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

2) Manufactured House Residential Overlay (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 (SC):

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

4) Planned Development Overlay (PD):

To establish a basic set of guidelines for the development of land and supporting infrastructure, which are to be implemented using 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.

The majority of East Mesa Planning Area is zoned single-family and multi-family residential. A large portion of these two zones are currently developed with mobile homes. Approximately one block along both sides of Apache Trail is zoned general commercial within the East Mesa Planning Area. There is no industrial zoned land in the unincorporated portion of the planning area.

Public Property Ownership:

Figure-11, "Public Land Ownership", illustrates the public property ownership in the East Mesa Planning Area. An understanding of the location and extent of lands under public ownership allows for planning adjacent uses that will protect the public's investment, particularly in the case of large parks. The public land owners in the area consist of:

- Federal Government
- State of Arizona
- Maricopa County
- City of Mesa

The Tonto National Forest lies in the northeastern portion of the area and is managed by the National Parks Department under the jurisdiction of the U.S. Department of Agriculture. Approximately 8,640 acres (13.5 square miles) of the forest is within the planning area. More information about the forest is found in "Public Facilities and Utilities."

Approximately three (3) square miles of land within the East Mesa Planning Area is owned by the Bureau of Land Management (Federal Government). No development plans are proposed within these portions, but there is potential for development to occur by private parties through land trades or sales.

The Arizona State Land Department owns approximately 760 acres (1.2 square miles) located adjacent to McKellips Road, between Hawes Road and Ellsworth Road. The State also owns land along the Salt River between Val Vista Drive and Recker Road and an additional parcel east of Signal Butte Road, south of Southern Avenue.

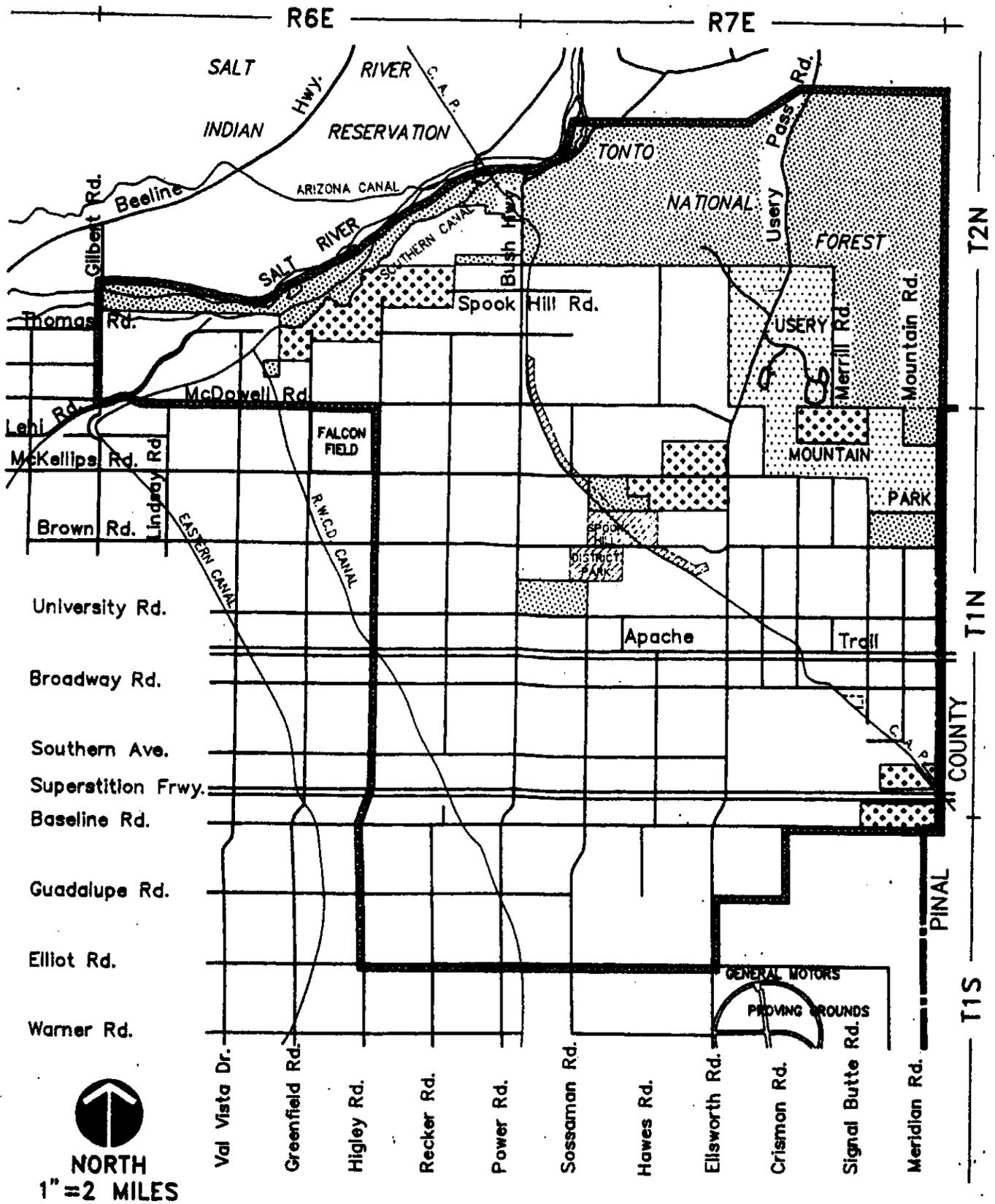
Usery Mountain Recreation Area is managed and owned by Maricopa County and covers 3,324 acres (6 square miles). The County has constructed more campgrounds and recreational areas. Additional information is available in "Public Facilities and Utilities".

Transportation:

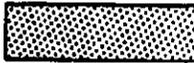
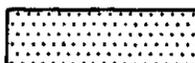
The existing County Highway system is illustrated in **Figure-12**, "Existing Transportation Facilities". Also included are proposed freeways. Streets not shown are local or collector streets.

Figure 11

EAST MESA



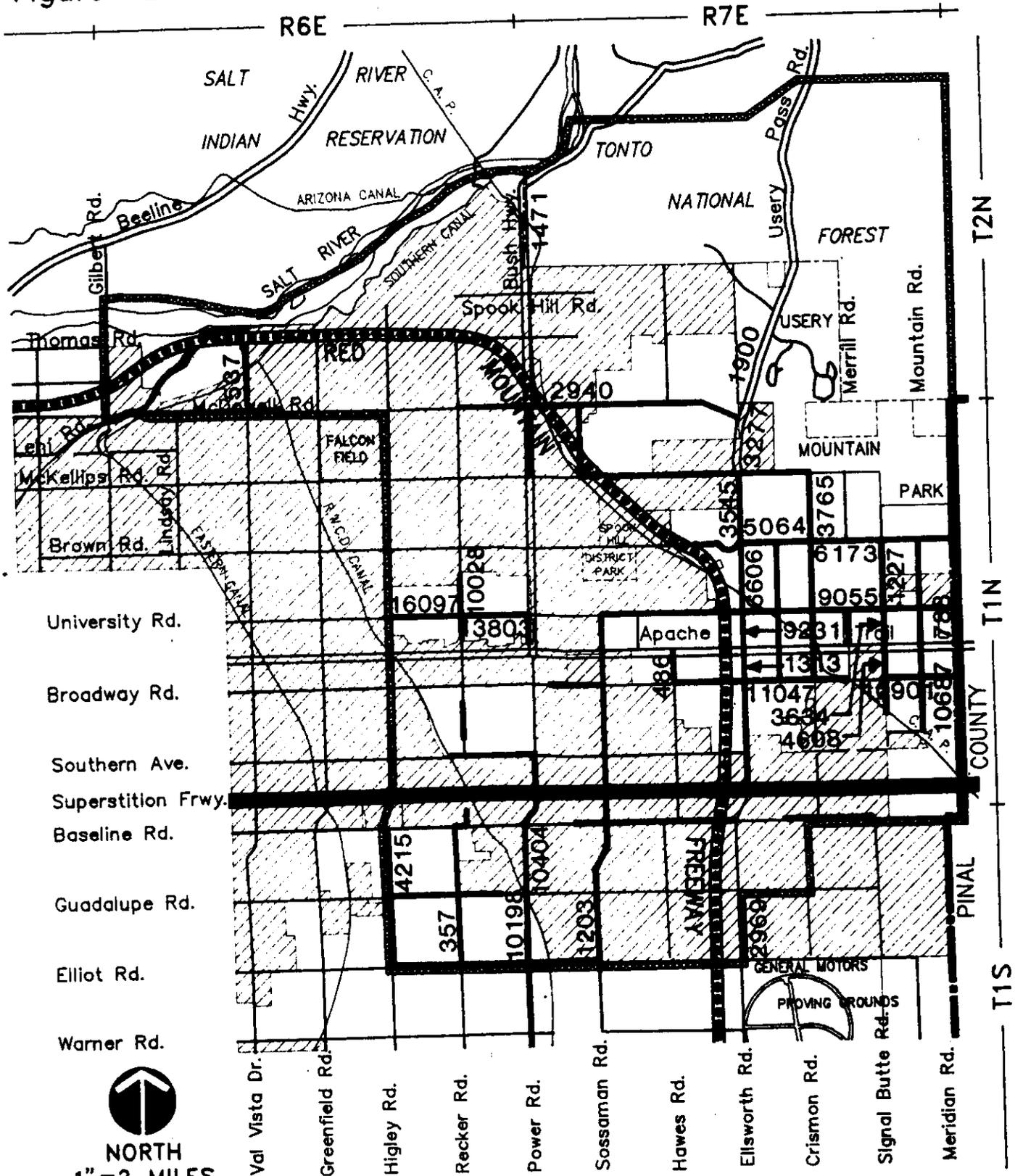
Public Land Ownership

	Federal		County		Private Property
	State		City/Mesa		

Source: MARICOPA COUNTY PLANNING & DEVELOPMENT

Figure 12

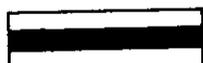
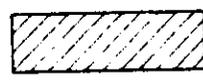
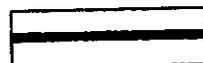
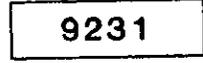
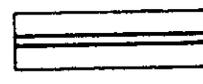
EAST MESA



University Rd.
 Broadway Rd.
 Southern Ave.
 Superstition Frwy.
 Baseline Rd.
 Guadalupe Rd.
 Elliot Rd.
 Warner Rd.


 NORTH
 1" = 2 MILES

EXISTING TRANSPORTATION FACILITIES

-  Freeway
-  Proposed Freeway
-  Incorporated Areas
-  Major Arterials
-  Average Daily Traffic Counts
-  County/State Highways

Source: MARICOPA COUNTY PLANNING & DEVELOPMENT

a) **Freeways/Expressways**

Implementation of the proposed regional freeway/expressway network will enhance accessibility of the East Mesa Planning Area to the balance of the Phoenix Metropolitan Region. Shorter travel times will be more attractive for development. Land use planning and zoning regulations must be exercised to ensure that development is compatible with the roadway network 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 certain distance from the freeways (as determined by specific studies) or should be provided with noise protection by developers in the form of continuous berms/walls to prevent future incompatibility problems.

Continuous frontage roads should be considered to parallel freeway corridors. These roadways not only provide traffic service to adjacent developments, but also provide access for shorter trips (i.e. less than 3 miles) which would discourage freeway use. Frontage roads also re-establish some of the local street system continuity which is interrupted by an access-controlled roadway. Segments of the following freeways are located in the planning area:

Superstition Freeway, extension east to U.S. 60
Red Mountain Freeway (proposed)
San Tan Freeway (proposed)

b) **Arterial Streets**

The primary function of arterial streets is to provide traffic service for large areas. Access to adjacent property is incidental to serving major traffic carrying movements. Apache Trail, which divides the area, is heavily congested, carrying over 40,000 vehicles per day over its length. The completed Superstition Freeway will provide traffic relief to Apache Trail, reducing average daily traffic by an estimated 20,000 to 10,000 vehicles per day. Other parallel arterials which will be relieved are Broadway and Baseline Roads.

Completion of the freeways will result in higher traffic volumes on north-south arterial streets with freeway/expressway access, particularly those with continuity from south to north. These streets include: Ellsworth Road, Power Road/Bush Highway and Higley Road.

Additional continuity in the north-south arterial grid system will need to be considered as development of the eastern portion of the planning area occurs.

For future arterial streets, a 110 foot right-of-way is usually secured by Maricopa County by requiring adjacent property owners to dedicate their frontage from the center line at the time of rezoning. This practice minimizes costly right-of-way purchases and should be continued for arterial streets. In the future, 130 feet of right-of-way may be required for major arterials.

c) Collector Streets

Collector streets provide the connection between the local streets (which provide property access) and the arterial streets (which provide traffic service). These streets are usually at the one-half and/or one-quarter mile spacing. Some continuity, particularly at the one-half mile spacing is important for transit service, bicycle and pedestrian routing, and emergency vehicle access.

d) Public Transit Service

The Regional Public Transit Authority (RPTA) Plan was officially adopted as the transit plan for the county, but because of the failed referendum in March 1989, no funding is available to implement this plan. Therefore, it is more likely that the City of Mesa will be planning public transit in the area.

Existing public transit service is very limited and includes the following programs:

- City of Mesa Dial-A-Ride Service
- Regional Rideshare car pool matching by M.A.G.
- Mesa Sunrunner Service

Operated by DAVE Transportation Services, Inc. through a contract with the City of Mesa, the Sunrunner has become a vital part of the overall transportation system of Mesa. The Sunrunner currently provides service on five routes

in west, central and east Mesa, Monday through Friday. A temporary commuter express service also is serving Falcon Field/McDonnell Douglas employment center.

In the near future funding will be available for the City of Mesa to expand its transit system.

e) Bicycle/Pedestrian Facilities

Existing facilities such as sidewalks or bikeways are limited and discontinuous, and should be included in all major collector and arterial street construction or reconstruction plans.

Bicycle facilities can range from special separated pathways (which are expensive to construct and maintain) to a striped lane, to signed routes on existing streets where bicycles mix with other traffic. The need for such facilities is usually greatest near schools (e.g., junior and senior highs and colleges) and recreational attractions.

With both junior/senior high school facilities and developed recreation areas in the East Mesa Planning Area, bicycle facility demand is high. Additional development of the Spook Hill and Utery Mountain Parks or school construction could increase demand.

A basic network to anticipate increased demand should be considered. Opportunities for a bicycle route system include development of low volume residential collectors (i.e. one-half mile grid streets) and routes along the canal system. Both systems present problems at intersections with arterial streets.

Guidelines on the use of State Gas Tax Revenues, Highway Revenue Funds prohibit funding of bicycle facilities for recreation purposes. These revenues are a major source of funding for local construction projects. As a result, local funding must usually be used if anything more than shared use of the street is proposed.

Public Facilities and Utilities:

The Public Facilities and Utilities section is an overview of the various public and semi-public utilities, municipal facilities (City of Mesa), public safety facilities and semi-public facilities in the East Mesa Planning Area. This section is presented in eight sub-sections:

Water Distribution System
Sanitary Sewer System
Sheriff's Department
Fire Department
Health Care Facilities
Educational Facilities
Public Safety
Parks and Open Space

The purpose of this section of the *East Mesa 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 of the public facilities and services inventory discusses the quality of water and its use as well as the location of the water distribution system within the East Mesa Planning Area.

Domestic Water Supply

Domestic water for the East Mesa Planning Area is supplied by the following water companies and municipalities:

Arizona Water Company
City of Mesa
Town of Gilbert

Ninety percent of the City of Mesa's water supply comes from treated surface water. Approximately two-thirds is from the Salt-Verde River system and the remainder is from the Central Arizona Project (CAP) system. The privately owned Arizona Water Company primarily pumps groundwater. Programs have been initiated by the City of Mesa to use reclaimed water as a domestic water source. Also, water (treated) will be pumped into the aquifer to supplement declining groundwater levels.

Agricultural Water Supply

Most of the agricultural activity is supported by water from the Roosevelt Water Conservation District, which receives water from Salt River Project. The canal system serving the East Mesa Planning Area is shown on *Figure-13*.

Future Water Supply Alternatives

As growth continues in the planning area, additional water will come from the Central Arizona Project (CAP) system.

b) Sanitary Sewer System

This section of the community facilities and services inventory discusses the present condition, capacity, and location of the sanitary sewer system in the East Mesa Planning Area with an analysis of the system's performance where pertinent.

Existing Sanitary Sewer System

The East Mesa Planning Area is served by a sanitary sewer system and individual septic tanks. The sanitary sewer system is operated by the City of Mesa, and is in adequate physical condition. However, to improve service and avoid a system overload in the future, there is a need to expand the system. The City of Mesa's sanitary sewer collection system extends into the East Mesa Planning Area through several main lines. These lines extend along McDowell Road to Power Road, Brown Road to Sossaman Road, and Baseline Road to 80th Place, University to Mountain Road, Southern Avenue to Signal Butte, then north to University Drive. Connected to these major lines, are numerous lateral and local collector lines throughout the area. All wastewater collected by the City's sanitary sewer system for the East Mesa area is transferred to a wastewater treatment plant in Phoenix.

The majority of the East Mesa Planning Area operates on individual septic tanks. Currently there are no major contamination problems with the use of septic tanks. However, should problems occur, the entire area could be served by a sanitary sewer system. The eastern portion of the planning area could tie into a future Apache Junction sewer system, while the western portion of the area could tie into Mesa's sewer system, though prior provisions would be required.

Improvements to the Existing Sanitary Sewer System

As mentioned earlier, the overall sanitary sewer system of the East Mesa Planning Area is in adequate physical condition and no major main line rehabilitation is required. The majority of the lateral and collector lines throughout the area are not overloaded and in good physical condition, with no rehabilitation of these sections of the system required.

Future Sanitary Sewer System

Any extension of the existing sanitary sewer system should be planned for future growth. Development approval should be coordinated with the City of Mesa so that sanitary sewer service can be planned for the urban portions of the East Mesa Planning Area.

c) Sheriff's Department

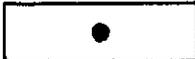
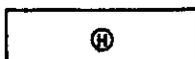
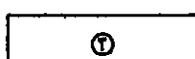
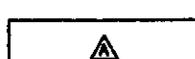
The Maricopa County Sheriff's Department, headquartered at 102 West Madison Street, in downtown Phoenix, patrols the unincorporated areas of Maricopa County. A new Mesa Substation and Jail are located at 1840 South Mesa Drive in Mesa. The new jail houses all prisoners from East Mesa. Burglaries are a major problem in the East Mesa Planning Area due to the large distances between each household, providing less block watch opportunities to prevent criminal activity.

d) Fire Department

The Rural Metro Fire Department, a privately owned operation, is headquartered at 3200 North Hayden, Suite 200, Scottsdale. Rural Metro will provide fire and ambulance services in the unincorporated areas of the County on a contract basis. Station 57, located at 334 North Bush Highway, Mesa; and Station 59, located at 11342 East Apache Trail, Mesa, serve the East Mesa Planning Area. These stations are depicted on *Figure-13*, "Existing Public Facilities and Utilities".

Station 57 operates with a staff of 1 full-time fire fighter on a 24-hour shift basis. Backup support is provided by staff on an on-call basis. The station is equipped with one (1) engine, one (1) rescue truck and one (1) tanker. Response times of less than five minutes are provided by Station 57. The

Categories

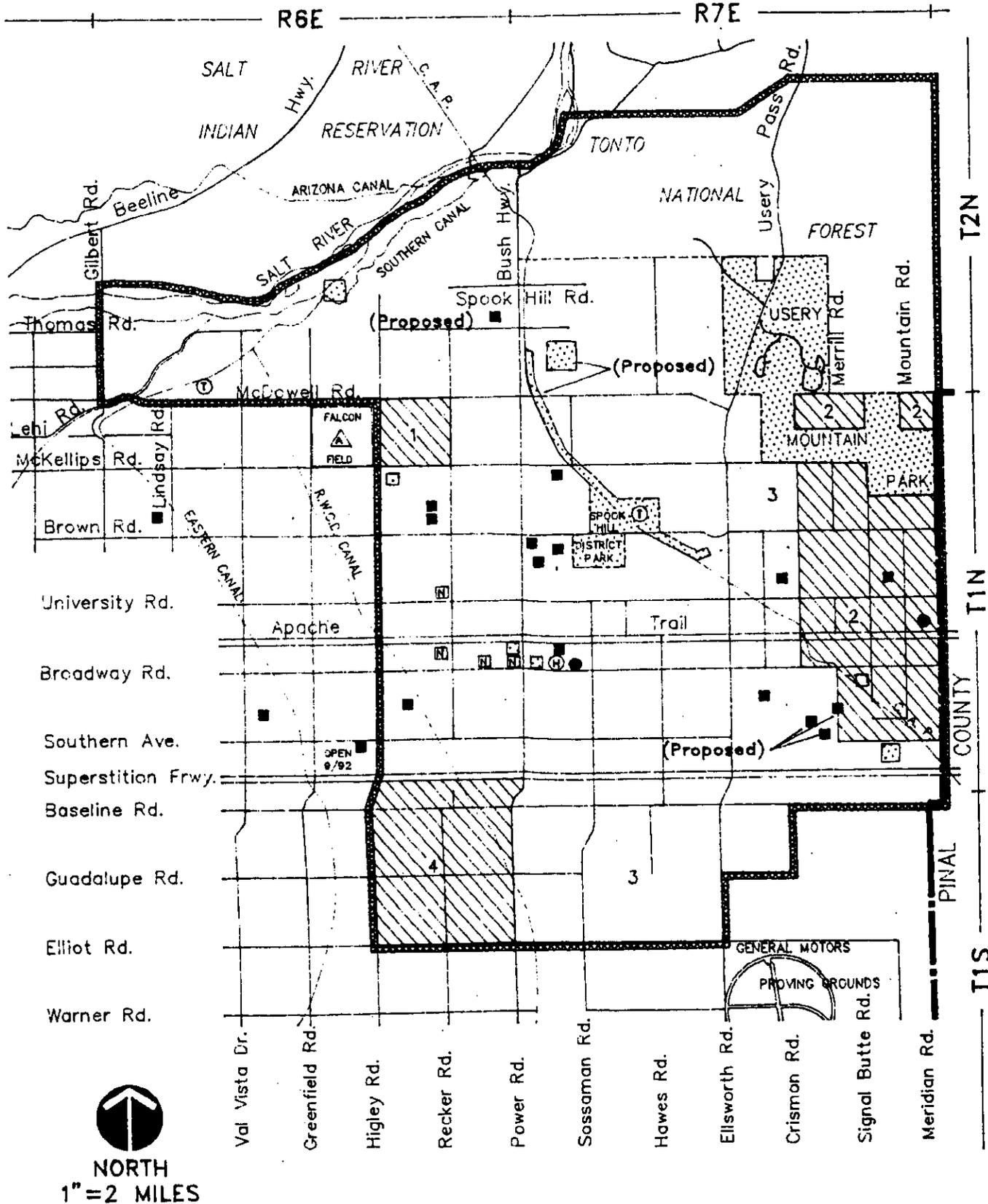
	School
	Fire Station
	Post Office
	Health Facility
	Treatment Plant
	Nursing Home
	Airport
	Park/Recreational Area
	Water Provider Service Area

- 1 City of Mesa
(formerly Racrest Water Co.)
- 2 Arizona Water Company
- 3 City of Mesa
- 4 Town of Gilbert

EAST MESA
EXISTING PUBLIC FACILITIES AND UTILITIES

Figure 13

EAST MESA



EXISTING PUBLIC FACILITIES AND UTILITIES

existing facility occupies approximately 1,620 square feet. As the area grows, and property is annexed into Mesa, an examination of possible expansion or relocation of the existing fire station will be needed. Station 59 also operates with a staff of one (1) full-time firefighter on a 24-hour basis and support staff on an on-call basis. The station is equipped with one (1) engine and provides response times of less than five minutes. This station occupies approximately 1,040 square feet. Expansion or relocation will be considered as development and annexation necessitates.

The East Mesa Planning Area had an Insurance Services Office (ISO) rating in 1989 from 7 to 9, depending on location.

e) Health Care Facilities

Valley Lutheran Hospital, a 172-bed acute care hospital, is located on Broadway Road just east of Power Road. First opened in January 1984, Valley was expanded from five to seven floors in the spring of 1989 with one wing of the sixth floor open for patient care in February. Phase two of this \$11 million expansion program continued through 1989 and employs 692 people of which 325 are medical staff.

Various nursing home facilities are also located in the planning area. Their location and capacity is given in *Table-12*.

f) Educational Facilities

The Mesa Unified School District operates eight elementary schools, two junior high schools and one high school in the East Mesa Planning Area, as illustrated on *Figure-13*, "Existing Public Facilities and Utilities."

Table-13, "School Enrollment and Capacity", illustrates the enrollment at each of the schools on October 19, 1991.

All school facilities are considered to be in good condition and several schools have just recently been completed. Some of the elementary schools utilize portable buildings and will continue using them as enrollment requires.

g) Public Safety

The State Department of Public Safety operates out of the Phoenix Compound located at 2310 North 20th Avenue, Phoenix. The area office, which serves the planning area, is located at 2409 North Country Club, Mesa. An Air Rescue

TABLE - 12
Nursing Home Facilities

<u>Nursing Home</u>	<u>Location</u>	<u>Beds</u>
Las Flores	6458 E. Broadway Road	100
Chula Vista	60 South 58th Street	100
Good Shepherd	5848 E. University Drive	80
Mi Casa	330 S. Pinnule Circle	180

TABLE - 13
School Enrollment and Capacity

<u>School</u>	<u>Total Enrollment</u>	<u>Building Capacity</u>
Freemont Junior High	1,345	1,250
Jefferson Elementary	888	750
Salk Elementary	859	755
Stevenson Elementary	707	750
Taft Elementary	703	700
Red Mountain H.S.	1,823	2,500
Sousa Elementary	459	1,060
Mendoza Elementary	1,052	840
Madison Elementary	768	800
Shepherd Junior High	1,182	1,250
Falcon Hill Elementary	786	800

Source: Mesa Public Schools

Operation, serving the eastern portion of Maricopa County, is located within the planning area at the northeast corner of McKellips Road and Val Vista Drive. The Air Rescue operates with a staff of 11 on a 24-hour shift and is equipped with one(1) helicopter and one (1) tactical ground ambulance. No future expansion of the facilities is proposed, but as population increases future expansion will be planned.

h) Parks and Open Space

The following described park and open space facilities are within the East Mesa Planning Area (*Figure-13*, "Existing Public Facilities and Utilities"). Several existing and planned neighborhood parks are owned and operated by the City of Mesa.

Future plans include a trail and linear open space system, along with several more parks. Please refer to the "Mesa General Plan" for further details.

Three major facilities in the planning area include:

Tonto National Forest
Usery Mountain Recreation Area
Spook Hill District Park

Tonto National Forest

Tonto National Forest is managed by the United States Department of Agriculture. The forest consists of 2,969,514 acres and is located in the northeastern portion of the planning area. Only 8,640 acres of the Tonto National Forest lie within the East Mesa Planning Area. Within the forest 580,000 acres are designated as wilderness areas. The Tonto National Forest includes Roosevelt, Apache, Canyon, and Saguaro Lakes, all of which include marinas and campgrounds. Available activities include boating, rafting, tubing, swimming, water and jet skiing, fishing, hiking, and picnicking.

Usery Mountain Recreation Area

Usery Mountain Recreation Area is managed by the Maricopa County Parks Department. Usery Mountain Recreation Area contains 3,324 acres and is about 12 miles from central Mesa.

Park facilities include picnic sites, several ramadas, restrooms, and family and group camping facilities. An excellent archery range, which includes field courses and practice ranges, is provided. An extensive hiking and equestrian trail system runs throughout the park, including a designated horse staging area.

Spook Hill District Park

The Spook Hill District Park is owned and managed by the City of Mesa as a District Park. The Park is 1,017 acres in size, located north and south of the Sossaman Road and Brown Road intersection. Facilities include ten ramadas with tables, seven cooking grills, one group fire ring, and one restroom.

Locations of Special Development Concerns:

Three areas in the East Mesa Planning Area receive special attention in the Land Use Plan. These areas include:

- The Apache Trail Corridor
- The North East Mesa Planning Area (north of McKellips Road)
- The Superstition Freeway Interface Area

These areas are, or will become, areas of intense development pressure and 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) Apache Trail Corridor

A majority of the mobile home parks and subdivisions are located within the Apache Trail Corridor, which runs west to east from Power Road to Meridian Drive, and between Brown Road to the north and Southern Avenue to the south.

The principal issue in the Apache Trail Corridor is the increasing development. There are approximately 15,000 mobile home spaces scattered throughout the area. A large portion of these spaces are used only during the winter months by seasonal residents. Because of the development pressures in the area,

consideration should be given as to the best use of the remaining vacant land in the Corridor and whether or not mobile home and travel trailer park development should be encouraged in this area.

A study to ascertain the most acceptable design standards for future development along the Apache Trail Corridor should be undertaken by the Maricopa County Department of Planning and Development.

b) North East Mesa Area

The area north of McKellips Road, to the Salt River, consists of Tonto National Forest, Usery Mountain Park, low density residential developments and undeveloped property. The area is characterized by a development pattern consisting of many unpaved, unlighted streets, a low residential development density, and the lack of commercial services. This provides a rural lifestyle desired by the residents of this area.

The main issue concerning this area is the question pertaining to the intensity level of future development. With increasing development in the East Valley, development policies should be developed and implemented to address open space preservation, proper density levels, and proper development types for any proposed or future development. This is particularly true if the area north of McKellips Road is to remain in a rural and/or natural state.

c) Superstition/Red Mountain Freeway Interface Area

The Superstition Freeway Interface Area is bounded to the north by Southern Avenue, to the south by Baseline Road and runs the length of the East Mesa Planning Area. The Superstition Freeway ends at U. S. Highway 60. A majority of the area adjacent to the Superstition Freeway consists of vacant or agricultural land uses, although some multi-family residential uses are located between Sossaman Road and Hawes Road.

The principal issue concerning this area is the development pattern which should occur in the Superstition Freeway Interface Area. The factors associated with future land use patterns, include traffic access on and off the freeway, as development is clustered around the freeway intersections, and buffering between the freeways and residential and commercial land uses. Appropriate land uses should be designated before determining the optimal operating efficiency of the freeway.

Policy Implications:

The analysis of data in the Land Use and Zoning section brought several issues to the surface which should be considered as the County continues to develop.

a) Residential Development

A large number of mobile home parks exist along Apache Trail corridor, many underutilized.

The northeastern Mesa area is currently low-density residential with rural and natural character. Increased development pressure might alter the land use pattern for this area.

Intense development pressure along the Superstition and Red Mountain Freeway areas will change the character of these corridors.

b) Transportation

The primary function of arterials is to carry traffic. The County should ensure freeway and arterial operation at acceptable levels and maintain the correct carrying capacity.

c) Public Facilities and Utilities

With the large projected growth in population, plans for expansion of law enforcement, fire, public safety, and schools should be discussed in such a manner as to direct growth in a particular direction.

RESIDENT ISSUE IDENTIFICATION

The Resident Issue identification element of the East Mesa Land Use Plan summarizes the major land development issues raised by the residents of the East Mesa Planning Area.

EAST MESA ISSUE IDENTIFICATION WORKSHOP

On December 18, 1985, an East Mesa Community Issue Identification Workshop was held at Salk Elementary School. Residents, business people, property owners, Maricopa County Planning and Zoning Commission members and the Maricopa County Board of Supervisors were invited to attend the workshop. The issuance of a workshop newsletter and articles in the Mesa Tribune and Mesa Independent newspapers occurred prior to the workshop.

Approximately 40 people attended the workshop. Participants at the workshop identified specific issues and expressed general ideas they felt should be pursued to resolve the issues.

Thirty-eight (38) 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 or high. Thirty-one issues were rated high in importance, these issues are shown in *Table-14*, "East Mesa Planning Area Resident Issue Identification".

On November 14, 1991, an additional public workshop was held to present the updated East Mesa Land Use Plan. Public input on issues and concerns since the original adoption of the Plan were received.

EAST MESA SUMMARY OF RESIDENT ISSUES

As the Inventory and Analysis document was prepared for the *East Mesa 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 Workshops. The issues include:

TABLE - 14
East Mesa Planning Area Resident Issue Identification

ISSUES

Environment

Preserve Natural Environment
Protect Parks, Mountains, Hillsides
Control Off-Road Vehicles
Plant Types Used for Revegetation, Landscaping
Control Flooding
Control Noise and Air Pollution (Highway and Air Field)

Land Use

Maintain Existing Development Patterns
Maintain Feeling of Rural Community
Encourage Low-Density Development North of Apache Trail
Limit Commercial Development
Prohibit Commercial Development North of McKellips
Encourage Large Lot Development (like Paradise Valley)
Encourage Infill Development (prevent sprawl)
Prohibit High Rise Development
Promote Quality Development
Utilize Design Review Along Major Streets
Site Plan Review; Tighten Up P.A.D. Requirements
Discourage Adult-related uses

Transportation

Increase Traffic Efficiency
Extend Southern Avenue and Baseline Road
Encourage a Public Transit System
Control Development at Freeway Interchanges
Driving Distance NOT a Problem
Upgrade Streets (pave dirt roads)
Design Roads to Match Development

Public Utilities

Water Availability
Improve Residential Street Lighting
Groundwater Usage
Upgrade Fire Protection
Require Underground Utilities
Control Signage

Environment

The residents of the East Mesa Planning Area perceived preserving the natural environment and controlling noise and air pollution as key issues to be considered for development.

Land Use

The residents of the East Mesa Planning Area felt maintaining the feeling of a rural community, by encouraging low-density development north of Apache Trail, by encouraging infill development in order to prevent sprawl and discouraging adult-related uses in the planning area as key issues.

Transportation

The residents of the East Mesa Planning Area perceived the need to develop a freeway system to handle future traffic needs, and upgrade existing dirt roads as key issues.

Public Utilities

The residents of the East Mesa Planning Area agreed that improvements in fire protection and other public utilities and facilities are key issues.

GOALS AND POLICIES

The formulation of a realistic and implementable Land Use Plan for the East Mesa Area is based upon a definite set of comprehensive goals and policies. The Land Use Goals and Policies are presented in three subject areas:

Natural Resources
Socioeconomic Development
Land Use

The following are generalized definitions which should be referred to as a guide when reading this chapter of the *East Mesa 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 East Mesa Planning Area; 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 environmental preservation.

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

- Policy A-1.1:** Consider noise generated by Williams Air Force Base and Falcon Field relative to Military Airport Zoning, and also consider roadway noise as generated by the Superstition and Red Mountain Freeways in the review of applications for land development.
- Policy A-2:** Encourage compatibility between land uses and development designs in environmentally sensitive areas such as floodplains, hillsides, wildlife habitats, scenic areas, and unstable geologic and soil conditions.
- Policy A-2.1:** Encourage the preservation of the scenic quality of the Goldfield and Superstition Mountains, as well as, other mountainous areas in the review of applications for land development. Develop other preservation programs and strategies.
- 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 fifteen percent or greater should be encouraged.

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-1.1:** Encourage cooperation with the Flood Control District to minimize land development conflicts relative to the development and implementation of the Spook Hill and Eastern Maricopa County Area Drainage Master Studies, and other drainage studies in the review of applications for land development.
- 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-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 recharge 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 Salt River and in areas of ponding for the purpose of minimizing the hazards due to flood waters.
- Policy B-7:** Limit 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:** Encourage the submittal of land development projects which minimize destruction to the natural environment in the northeastern portion of the East Mesa planning area.
- Policy C-1.2:** Encourage the protection of threatened and endangered wildlife species habitat (e.g., Peregrine Falcon, Desert

Bighorn Sheep, Yuma Clapper Rail, Mississippi Kite, Desert Tortoise and Bald Eagle) when reviewing developments in the East Mesa planning area.

Policy C-2: Support preservation practices in the Palo Verde-Saguaro plant community.

Policy C-2.1: Promote the unique character of the existing flora in the northeastern portion of the study area, and support preservation practices when reviewing proposed land uses.

Policy C-3: Encourage the use of replacement vegetation that is primarily indigenous to the Palo Verde-Saguaro plant 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 northeastern portion of the East Mesa planning area, at the time of 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 Office stating that the proposed land development will have no effect on historical and cultural resources.

SOCIOECONOMIC 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:** Encourage commercial development 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-2:** Encourage industrial development on property zoned industrial prior to rezoning of additional property for industrial use.
- Policy A-2.1:** Discourage the location of commercial and industrial land developments in areas outside of urban concentration and, more specifically, north of Apache Trail.
- 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-4:** Require existing or proposed 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-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: In the northern portion of the planning area, discourage residential developments at suburban or greater intensities (exceeding one dwelling unit per acre). Industrial land use will also be discouraged north of Apache Trail, to maintain the existing rural character.

Policy A-4: Direct residential development, at one (1) unit per acre, or greater intensities, towards urbanized portions of the County.

Policy A-4.1: Recognize the public benefits achieved by limiting urban sprawl and "leapfrog" development activities by encouraging infill development where possible.

- 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: Encourage a two-story height limitation for buildings in the northern portion of the planning area in the review of applications for land development.
- Policy A-6: Review development proposals along major streets and adjacent to existing and approved land uses, in addition to normal site plan review, to determine compatibility with those uses.
- Policy A-7: Discourage the location of commercial or industrial developments in locations specified for development with rural density land uses.
- Policy A-7.1: Encourage the location of commercial activities on vacant commercially zoned parcels along Apache Trail prior to rezoning of additional lands for commercial land uses.
- Policy A-7.2: Encourage the development of new commercial land uses only when their demand can be justified. Limit commercial activity in that portion of the study area north of McKellips Road.
- Policy A-8: Encourage signage to be located on the site for which it pertains.

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:** Encourage the location of compatible land uses at arterial interchanges of the Superstition and Red Mountain Freeways.
- 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-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-5: Encourage canal utilization as multiple use trails for recreational purposes.
- Policy C-5.1: Encourage the use of the Central Arizona Project corridor as multiple-use trails (e.g., pedestrian, horse, bicycle) 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 uses.**
- Policy D-1: New urban land use development is to be in accordance with the East Mesa Land Use Plan and respective land use categories.
- Policy D-2: New urban development shall 1) supply evidence of 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 land use development shall identify sites for parks and schools. The following standards apply:

(Space Standards see Table 19).

Location Standards

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).

Policy D-7: The Maricopa County Department of Planning and Development should begin an urban design study for undeveloped areas along the Apache Trail Corridor.

LAND USE PLAN

This chapter of the 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:

- Maintain existing development patterns
- Limit commercial development (none north of McKellips)
- Encourage large lot development (similar to Paradise Valley)
particularly north of Apache Trail
- Encourage infill development (prevent sprawl)
- Prohibit industrial development north of Apache Trail
- Require design review along major streets
- Protect parks, mountains, hillsides and areas prone to flooding
- Increase traffic efficiency

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

PLANNING AREA GROWTH AND DEVELOPMENT NEEDS

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

The estimated population of the East Mesa Planning Area is expected to grow from a 1985 population of 23,592 persons in 14,337 housing units to year 2010 population of 70,457 persons in 33,188 housing units. As shown in *Table-15*, this growth represents an increase of 199 percent in population and 131 percent in housing units. With 58 percent of the land already within the City of Mesa and the likelihood of more County land being annexed, much of this development will take place within the City of Mesa.

At an average density of four dwelling units per acre (4 d.u./acre), 6,567 acres or 10.3 square miles, of additional residentially developed land will be needed by the year 2010. This amount of growth could largely be accommodated south of Brown Road, leaving the area north to develop at lesser densities.

In addition to the residential land needs, commercial and industrial land needs were calculated. As discussed in "Inventory and Analysis", and illustrated in *Table-16*, "Projected Land Use Demand", 564 acres of additional industrial development appears to be necessary, and 740 acres of commercial development may also be needed. In both cases developed, or properly zoned property, does not exceed the demand through the year 2010. These figures apply to the unincorporated portion of the planning area only.

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 Plan provides an overall mix of land uses for the East Mesa Planning Area. The land use boundaries shown on the 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 Plan is not violated.

TABLE - 15

Projected Resident Population and Housing Units, 1985-2010

	Census 1985	Mid-Year 1995	Mid-Year 2010	Total Increase	Percentage Increase
Resident Population	23,592	32,148	70,457	46,865	199 %
Resident Housing Units	14,337	18,999	33,188	18,851	132 %

TABLE - 16

Projected Land Use Demand

Land Use	Acres Needed by 2010	Acres Zoned/ Developed	Additional Zoning Needed
Residential	6,567	9,612*	--
Commercial	740	409	331
Industrial	564	35	529

* Includes all Rural-43 and higher density existing zoning. Includes only developed or subdivided Rural-43 zoning.

Categories

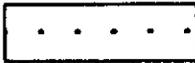
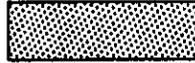
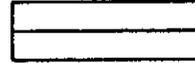
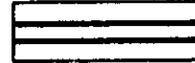
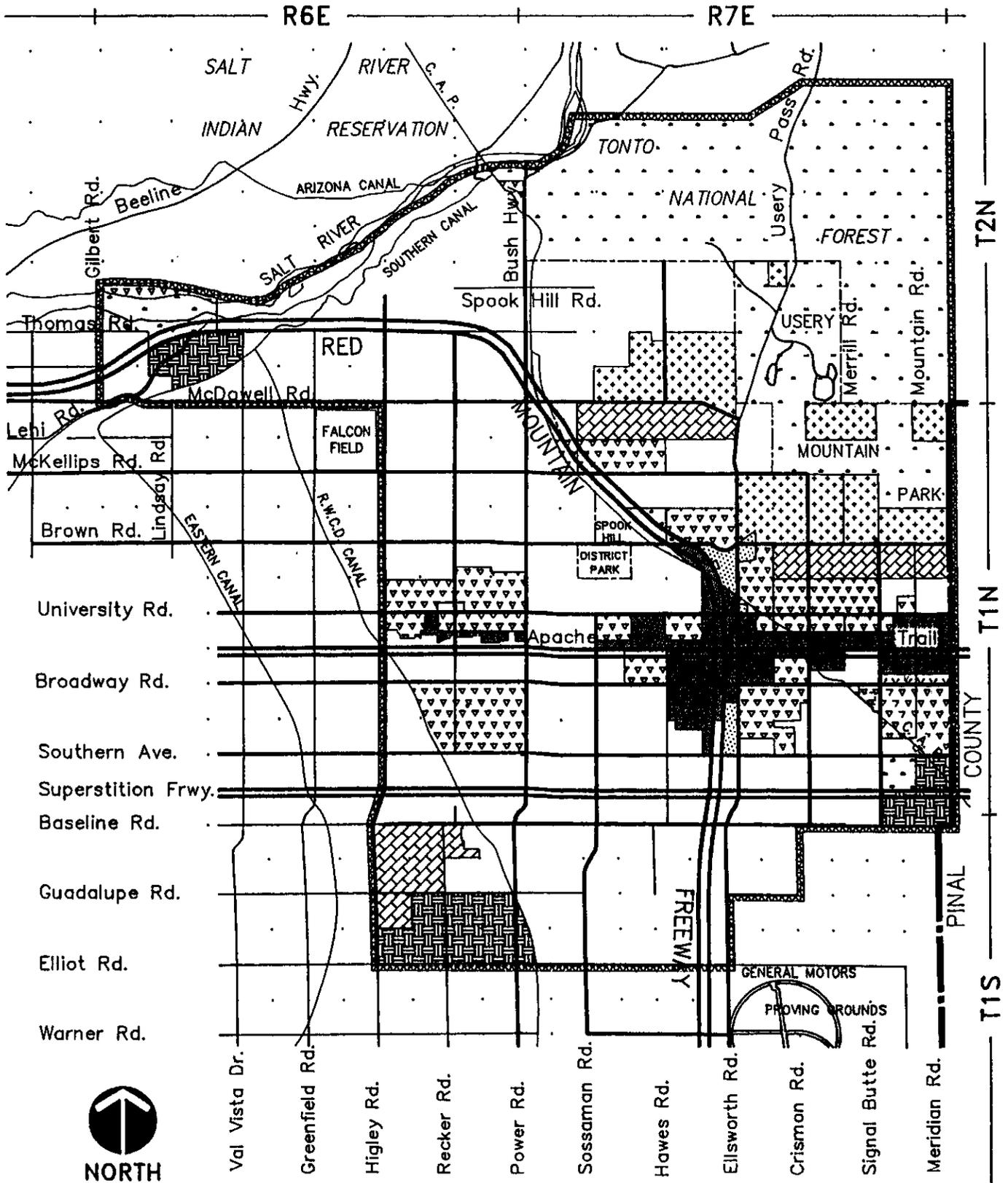
	Open Space
	Rural Residential (0-1)
	Suburban Residential (0-2)
	Urban Residential/Low (0-6)
	Urban Residential/Medium (0-12)
	Urban Residential/High (0-25)
	Mixed Use Center
	Light Industrial Center
	Incorporated Areas
	Principal Arterials
	Freeway/Expressway

Figure 14

EAST MESA



GENERALIZED LAND USE PLAN

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 given for only those Land Use Categories designated on the East Mesa Land Use Plan).

Open Space, (OS)

The Open Space category denotes areas which would be best precluded from development except as open space and recreational areas. However, development of such environmentally sensitive areas as steep slopes and flood plains may be developed when in compliance with the Hillside Development Regulations 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 d.u./acre may be permitted, but only if areas of lower densities off-set the increase such that an average of less than 1.0 d.u./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 d.u./acre may be permitted, but only if areas of lower densities off-set the increase such that an average of less than 2.0 d.u./acre is maintained. In addition to residential uses, limited convenience commercial uses may also be permitted, provided there is direct access to arterial streets. A community sewer and water system will be required for developments above 1.0 d.u./acre and may be required for those below 1.0 d.u./acre.

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 d.u./acre. Within any particular development, densities greater than 6.0 d.u./acre may be permitted, but only if areas of lower densities off-set the increase such that an average of 6.0 d.u./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/Medium Density, (UR/M), (0-12.0 Dwelling Units per Acre)

The Urban Residential/Medium Density category denotes areas where higher 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. Two family and multi-family developments may be permitted. Residential densities for specific projects may exceed 12.0 d.u./acre, but only if areas of lower densities off-set the increase such that an average of 12.0 d.u./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.

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 25.0 d.u./acre, but only if areas of lower densities off-set the increase such that an average of 25.0 d.u./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 one (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, mini-banks, 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 five 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.

Multi-Neighborhood Commercial, (MNC)

The Multi-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 a multi-neighborhood trade area. Such a trade area shall have a minimum population of approximately (10,000) people. Use of this category in a trade area shall prohibit the use of the Neighborhood Commercial category in the trade area. This category permits developments of 10 acres or less per trade area. A broader number of activities may be provided than those in a Neighborhood Commercial category. 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.

Mixed Use Center, (MUC)

The Mixed Use Center category denotes areas for the location of major employment centers which would have minimal impacts on surrounding areas outside of increased traffic demands. Uses permitted in this category would include offices, light industrial parks, business parks, research parks, government facilities, post secondary educational facilities, hospitals and major medical facilities. Access to a principal arterial or freeway will be required. No noise, vibration, smoke, dust, odor, heat or glare will be permitted. Only the minimum of 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.

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.

Freeways and Principal Arterial Streets

Freeways and Principal Arterial Streets represent streets which 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. Collector and local 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 and the application of the "Goals and Policies" the Land Use Plan was prepared. While the 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 within East Mesa and the surrounding area.

Based upon eventual total development of the area the following summarizes the Land Use Plan for the East Mesa Planning Area.

Residential Development Patterns

The overriding principal behind the Land Use Plan for East Mesa was recognition of the established land uses and existing approved development projects. This was particularly true for the area between Brown Road and Baseline Road, where patterns of urban-type residential development and supporting commercial development were in place. North of Brown Road development patterns had also been established, but residential densities were slightly lower than one d.u./acre.

Non-Residential Development

Within the East Mesa Planning Area, substantial commercial development has occurred along Apache Trail. This commercial development pattern will be retained. Depending upon access and effect upon adjacent properties, additional commercial development could also be permitted. North of University Drive, along Brown, McKellips, McDowell, and Thomas' Roads, commercial development should be discouraged in an effort to retain a more rural character of the area.

The only major Employment Center category provided for the East Mesa Planning area lies between Guadalupe and Elliot Roads in the southern portion of the area. Much of this Employment Center area lies within the noise impact area of Williams Air Force Base and is consistent with the Town of Gilbert General Plan.

USE OF THE LAND USE PLAN

Consistency in zoning for specific areas or parcels of land within the East Mesa 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
- Employment Center Land Use Guidelines
- Buffering and Transitional Land use Guidelines
- Amendments to the Land Use Plan

Development Master Plans

The use of Development Master Plans (DMP) 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 transitioned 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. Allowable Residential Densities

Rural Residential/Low Density	0 - 0.2 d.u./acre
Rural Residential/High Density	0 - 1.0 d.u./acre
Suburban Residential	0 - 2.0 d.u./acre
Urban Residential/Very Low Density	0 - 4.0 d.u./acre
Urban Residential/Low Density	0 - 6.0 d.u./acre
Urban Residential/Medium Density	0 - 12.0 d.u./acre
Urban Residential/High Density	0 - 25.0 d.u./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 East Mesa 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 it is 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 Guidelines

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

An amendment to this adopted plan may be filed with or without a rezoning request or Development Master Plan application. According to Article 28, Section 2809 of the Maricopa County Zoning Ordinance, "all applications for changes of zoning district boundaries that include property which totals 40 acres or more in size must be in compliance with the County's Comprehensive Plan and/or adopted area plan."

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 all or part of the planning area by:
 - a) Significantly altering acceptable land use patterns to the detriment of the plan.
 - b) Requiring public expenditures for larger and more expensive public improvements to roads, sewer, or water systems than are needed to support the planned land uses.
 - c) Adversely impacting existing uses because of increased traffic.
 - d) Affecting the livability of the area or the health and safety of the residents.
 - e) Adversely impacting the natural environment or scenic quality of the area.
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 may be requested by private individuals or agencies.

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 plant 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.

In many areas of Maricopa County, major and minor drainage ways exist as are illustrated in "Inventory and Analysis". Major drainage ways, particularly those with designated floodplains have been designated for open space corridors. As appropriate, more drainage ways may also be established as open space, but in any case, provisions for continued drainage should be maintained. Where possible, open space corridors should be encouraged to function as walkways or bicycle trails as well as drainage corridors. Where retention/detention basins are determined necessary by the County Flood Control District, these areas should also serve as recreation areas or be landscaped to provide attractive viewing areas, as individual cases permit.

The Palo Verde-Saguaro plant community represents the stereotypical desert environment and the natural beauty associated with arid landscapes. Although development can be compatible with Palo Verde-Saguaro plant communities, it must usually be maintained at relatively low densities (not greater than 2.0 dc/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 plant community exists in or near areas of steep slopes. Therefore, development restraints that are intended for either steep slope or Palo Verde-Saguaro areas will be compatible with the other situation.

Transportation

The Plan illustrates several freeways, expressways and arterial streets, including the Superstition Freeway, Red Mountain Freeway, and Apache Trail. The major arterial streets will carry the majority of trips into and out of the area. Other arterial and collector 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 (arterial) 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 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. Along Apache Trail this situation already exists through the length of the planning area, however efforts to minimize future access should be encouraged. *Table-17* 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-18* 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 Maricopa County, 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, law enforcement and fire protection services. This situation will generally apply to developments where densities remain less than 1.0 d.u./acre as in the Rural Residential categories. However, the County will be faced with reviewing major developments where densities exceed 1.0 d.u./acre and are more urban in nature. In these situations, community sewer and water service is 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-19* should be used as a reference when determining and sizing necessary facilities for a given development.

TABLE - 17

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 Arterials	Traffic Mobility	High
Arterial Streets	Traffic Mobility	Moderate
Collector Streets	Mobility/Accessibility Transition	Moderate
Local Streets	Accessibility	None

TABLE - 18

**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.

TABLE - 19

Facilities Space Standards

<u>TYPE</u>	<u>SPACE REQUIREMENTS</u>	<u>SOURCE</u>
<u>PARKS AND RECREATION FACILITIES</u>		
General Recreational Std.	10 Acres/1,000 persons	National Parks and Recreation
Individual Park Type Standards (Not including Regional Parks)		
Playgrounds	1.5 acres/1,000 persons	
Neighborhood Parks	2.0 acres/1,000 persons	
Playfields	1.5 acres/1,000 persons	
Community Parks	3.5 acres/1,000 persons	
Community Center	1 acre/1,000 persons	
Golfing	1 18 hole course/50,000 persons	
Swimming	1 outdoor pool/25,000 persons	
<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) Association	National Library

TABLE - 19
Facilities Space Standards
(Continued)

TYPE	SPACE REQUIREMENTS	SOURCE
<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	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.

GLOSSARY

acre feet: The amount of water required to cover one acre of land one foot deep; or 325,851 gallons.

affordable housing: Housing whose cost (rent or mortgage plus tax and insurance) is not more than 25 percent of the occupant's gross income.

air pollutant emission: Discharges into the atmosphere, usually specified in terms of weight per unit of time for a given pollutant from a given source.

alluvial: A general term for the sediments laid down in river beds, floodplains, lakes, fans at the foot of the mountain slopes, and estuaries during relatively recent geologic times.

annex: To incorporate an area/territory into a city, service district, etc.

aquifer: A geologic formation that stores, transmits, and yields significant quantities of water to wells and springs.

area plan: Plans adopted by Maricopa County which cover specific subareas of the unincorporated County. These plans provide basic information on the natural features, resources and physical constraints that affect the development of the planning area. They also specified detailed land use designations which are then used to review specific development proposals and the plan services and facilities.

arterial: A street providing traffic service for large areas. Access to adjacent property is incidental to serving major traffic movements.

artifact: A simple object (such as a tool or ornament) showing early human workmanship or modifications.

available water supply: The amount of water a soil can hold which is available for plants.

average daily traffic (ADT): The amount of traffic that passes any given intersection within a 24-hour time frame.

candidate species: Those species or subspecies for which threats are known or suspected, but for which substantial population declines from historical levels have not been documented (though they appear likely to have occurred).

carbon monoxide (CO): A colorless odorless very toxic gas that burns to carbon dioxide with a blue flame and is formed as a product of the incomplete combustion of oxygen.

Comprehensive Plan: A master or general plan containing guidelines for growth and development of the land within a jurisdiction, and coordinating policies affecting public services, benefits and regulations.

corrosivity: A soil's capacity to induce chemical reactions that will corrode or weaken metals and concrete.

critical habitat: Key land areas used by wildlife for forage, reproduction or cover.

cultural resource: Cultural resources are the tangible and intangible aspects of cultural systems, living and dead, that are valued by a given culture or contain information about the culture. Cultural resources include, but are not limited to, sites, structures, buildings, districts and objects associated with or representative of people, cultures and human activities and events.

decibel (dB): A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

dependent species: A species for which a habitat element (e.g. snags, vegetative type) is deemed essential for the species to occur regularly to produce.

developed recreation site: Distinctly defined area where facilities are provided for concentrated public use (e.g. campgrounds, picnic areas, boating sites, and interpretive facilities).

dwelling unit: Any building or portion thereof, including a mobile home or portion thereof which contains living facilities, including provisions for sleeping, eating, cooking and sanitation as required by the Development Code and Uniform Building Code, for not more than one family.

endangered species: Any species listed as such in the Federal Register which is in danger of extinction throughout all or a significant portion of its range unless conservation efforts are undertaken soon.

flood hazard areas: Areas in an identified floodplain.

floodplain: The lowland and relatively flat areas that are subject to a 1 percent (100-year recurrence) or greater chance of flooding in any given year.

game species: Any species of wildlife or fish for which seasons and bag limits have been prescribed and which are normally harvested by hunters, trappers, and fishermen under state or federal laws, codes and regulations.

goal: A goal describes a desired state of affairs. It is the broad public purpose toward which policies and programs are directed. Since it is a general statement, more than one set of actions could be taken in achieving the goal.

groundwater: Water beneath the earth's surface and stored in aquifers, accumulating as a result of recharge and serving as the source of springs, wells, etc.

habitat: The sum of environmental conditions of a specific place that is occupied by an organism, a population or a community.

household: The person or persons occupying a housing unit.

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

incorporated city: Area(s)/neighborhood(s) joined together for the purpose of self-government.

infilling: Development of vacant or underutilized parcels within urban areas.

infrastructure: The basic facilities on which the continuance and growth of a community depends such as roads, schools, power plants, transmission lines, transportation and communication systems.

ISO rating: A numerical value published by the Insurance Services Office (ISO) which classifies fire suppression agencies and districts throughout the United States for the purpose of establishing the basis for fire insurance rates. The point scale ranges from 1 to 10, with one representing the best rating for lower insurance rates.

landfill: A disposal site which disposes of solid wastes on land. Wastes are deposited and compacted. At specific intervals, a layer of soil covers the waste and the process of deposit and compaction is repeated without creating nuisances or hazards to public health or safety. The purpose is to confine the

wastes to the smallest practical area, to reduce them to the smallest practical volume.

land use: The primary or secondary use(s) of land such as family residential, multi-family residential, commercial, industrial, agriculture, etc. The description of a particular land use should convey the dominant character of a geographic area, and thereby establish the types of activities which are appropriate and compatible with primary use(s).

Ldn, day-night noise level: The average equivalent A-weighted sound level during a 24-hour day obtained by adding ten decibels to the hourly noise levels measured during the night (10 p.m. to 7 a.m.). In this way, Ldn takes into account the lower tolerance of people for noise during nighttime periods. Ldn noise level measurements are typically plotted onto a map to identify noise contours around a significant noise generator (e.g. freeways, airports, etc.).

manufactured housing: A dwelling unit installed at the building site by connecting one or more segments which have been made in a manufacturing facility located off of the site. A manufactured home is built in compliance with the federal Manufactured Housing Construction and Safety Standards Act of 1974.

median: The mid-point in a range of numbers.

mobile home: A movable, factory-built home, built prior to the 1974 federal Manufactured Housing Construction and Safety Standards Act.

National Register of Historic Places: A listing maintained by the U.S. National Park Service of areas which have been designated as historically significant. The Register includes places of local and state significance, as well as those of value to the nation in general.

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

noise exposure contours: Lines drawn about a noise source indicating constant energy levels of noise exposure.

nongame: Species of animals which are not managed for sport hunting.

nonmotorized recreation: Recreational opportunities provided without the use of any motorized vehicle. Participation in these activities travel by foot, or horseback, etc. Bicycle riding is generally included under nonmotorized recreation, but some land management agencies may restrict their use.

objective: An objective is a specific statement of the desired result of public action. An objective should be measurable, or precise enough so the community can determine when they have reached the objective. Objectives may define intermediate steps toward a goal or may address a single aspect of the goal.

open space/open space use: Open space use means the current employment of land, the preservation of which conserves and enhances natural or scenic resources, protects streams and water supplies or preserves sites designated as historic pursuant to law.

park and ride: A voluntary system where participants drive to a central location in order to carpool or gain access to public transportation to another location.

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

permeability: Rate at which water runs through soil.

policy: A policy is a statement of government intent against which individual actions and decisions are evaluated. The wording of policies conveys the level of commitment to action: policies which use the word "shall" are mandatory directives, while those using the word "should" are statements of direction to be followed unless there are compelling reasons to do otherwise.

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

potable: Water suitable for drinking.

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

raptor: A bird of prey such as eagle, hawk or owl.

rare species: One that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens.

regional park: A recreation site, typically larger than 100 acres, developed for diversified use by large numbers of people. Regional parks are intended to serve all residents of the County as compared to neighborhoods or smaller communities. Regional parks can accommodate active and passive activities, and special facilities including boat ramps, shooting ranges, zoos, etc.

response time: The time interval between the receipt of a request for public service or assistance, and the arrival of the service provider. Typically, response time measures the ability to get emergency service to a specific location, with delays attributed to dispatch time, driving distance, traffic conditions, ability to find the specific location, and the backlog of service requests.

rideshare: A techniques employed in traffic reduction programs which encourages commuters to carpool to work or other designations (e.g. shopping, medical visits, etc.).

right-of-way: The width of publicly dedicated streets, including the pavement, sidewalks, and planting area; the width between the property lines on either side of the street.

rural: When used in the context of this Plan, rural areas shall be those areas intended for residential development on no greater than one acre lots, with limited supporting nonresidential uses.

scenic area: An area of outstanding or unique visual quality.

scenic corridor: A roadway with recognized high quality visual amenities that include background vistas of mountains, open country, or city.

shrink-swell potential: Capacity of a soil to expand or shrink as the moisture is increased or decreased.

subdivision: Any land, vacant or improved, which is divided or proposed to be divided into five or more lots, parcels, sites, units or plots, for the purpose of any transfer, development or any proposed transfer or development of the original parcel.

subsidence: The gradual, settling or sinking of the earth's surface with little or no horizontal motion. Subsidence is usually the result of water extraction from

underground supplies, compaction, and not the result of a landslide or slope failure.

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

threatened species: Any species or subspecies which is likely to become endangered within the foreseeable future because serious threats have been identified and populations are (a) lower than they are historically or (b) extremely local and small.

total suspended particulates (TSP): Total amount of solid material suspended in the air.

Traffic Analysis Zones (TAZ): A small geographic area within a municipal planning area designated by the Maricopa Association of Governments for the purpose of estimating and projecting population.

trip: A one-way vehicle movement that either begins or ends at the location being considered; thus, a vehicle leaves a home and later returns to it would account for two trips under this designation.

urban: When used in the context of a Maricopa County Land Use Plan, urban includes development of three or more residential units per acre and comparable nonresidential and public development.

visual resource: The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

wastewater: Includes sewage and all other liquid waste substances associated with human habitation, or of human or animal origin, or from any producing, manufacturing or processing operation of whatever nature.

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

zoning: A local ordinance that divides a community into districts to guide, control and regulate the future growth and development in order to promote orderly and appropriate use of the land.

