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# RIO SALADO DRAFT EVALUATION REPORT

CARR, LYNCH ASSOCIATES, INC.

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# RIO SALADO DRAFT EVALUATION REPORT

Prepared for

RIO SALADO DEVELOPMENT DISTRICT

by

CARR, LYNCH ASSOCIATES, INC.

November 15, 1982

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PART I  
EXECUTIVE SUMMARY

# Reclaiming the Rio Salado

## Preliminary Findings

This draft of the first phase analysis of the reclamation of the Rio Salado is divided into four principal sections: 1) the physical structure of the project area and its surroundings; 2) the social structure of the same; 3) the economic situation; and 4) the question of water supply and flood control.\* This complex picture is best summarized by stating the major potentialities and problems that our analysis reveals.

1. Perhaps most significant is that the reclamation of the Rio Salado can literally turn the Phoenix region inside out. The disorderly outward spread of urbanization is now being checked as costs and public policy restrict the further extension of utilities and services. Phoenix is lucky to have a sizeable inner frontier where she can continue to grow, and yet grow in a way that makes use of existing infrastructure and begins to knit the city together. Particular features along the river's course such as ASU, the airport, the centers of Tempe and Phoenix, and the Papago Park and the Indian Bend Wash, all offer special opportunities. The check to growth at the edge is creating a strong market for inner-city housing and industry, and the space is there to provide for it. Moreover, this central space is large enough that all potential users, even including facilities of large scale, can be accommodated without conflict.
2. Reclamation depends on the availability of water, and analysis shows that sufficient water is potentially available: some 30,000 acre-feet from 2 or 3 major sources. These sources would not draw on potable water supplies to any great extent, but would use treated sewage effluent, or already polluted or salty groundwater, to fill the lakes and canals, and to irrigate the plantings. In addition, a channel could be set aside to carry up to 200,000 cfs of flood water safely, without preventing good use of the remainder of the Rio Salado lands. Thus, development could begin even before any work was accomplished on upstream dams, and, if necessary, could continue independently of them.

} large enough?

\*To be submitted at a later date.

3. Reclamation will provide a great bonus of outdoor recreation, new institutions, and public services for all the citizens of the metropolitan region. The recreational potential is enormous, and will have the strong support of the people of Phoenix. Since it will be possible to integrate housing and industry with the recreational development, new modes of recreation-related living and working, as well as new ways of financing and maintaining recreational facilities, will also be possible.
4. The Rio Salado affords the chance to demonstrate, not merely to the nation but even to the world, how arid areas can be made delightful while yet using water wisely and maintaining a stable desert ecology. Water can be celebrated and also conserved. A new arid land ecology can be created which is compatible with human use. The project will demonstrate how water otherwise unusable <sup>? water deemed unusable today may not be in 20 yrs</sup> can be recycled in the landscape. Enjoying this landscape, people will come to understand the desert and its history, and the crucial role of water in the living process.
5. Analysis of the real-estate market in the Phoenix area indicates a substantial demand for industrial development, as well as the signs of an evolving demand for in-town water and recreation related housing. Current population projections suggest that the county will double its population over the next 25 years and that the growth rate within the project area will be even greater. The summary chart which follows shows what we believe will be the Rio Salado's share of regional growth for population, employment, and various uses.

In addition, there are special market opportunities here. The overall demand for future hotel rooms is significant. The hotel industry is likely to be a major new employment generator in the Rio Salado area. If it is properly designed, large numbers of tourists can be attracted by the new water landscape. The potential for a special industrial development related to ASU and the airport is also strong. Although there are no large shopping centers envisioned, there will be some demand for new retail facilities, both tourist oriented and to serve the

Table 1  
 Preliminary  
 Regional and Rio Salado Development  
 District Growth Projections  
 1981-2005

<u>Share</u>	<u>Estimated Regional Growth</u>	<u>Estimated Rio Salado Development District Share</u>	<u>Number</u>	<u>Percent</u>	<i>1990 - 2005</i>
Population	1,437,900	49,300	3%		<i>5%</i>
Jobs	705,400	63,900	9%		<i>15%</i>
Dwelling Units	551,400	22,300	4%		<i>6%</i>
Acres Developed					
Residential	105,000	1,900-2,800	2 -3%		
Light Industrial	6,000	800-1,400	13-23%		
Office	2,500	75 - 150	3 -6%		
Retail	3,300	75 - 225	2 -7%		
Hotel	800	75 - 150	10-19%		

Source: Economics Research Associates.

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new housing. These market demands will not only assure a steady improvement of the Rio Salado, once properly launched, but give us a means for financing that improvement, through a public-private partnership. A substantial tax base will be created, on which bond financing can be secured, and which will bolster the finances of the adjacent local jurisdictions.

6. The development of the Rio Salado, since it passes through many of the lower-income areas of the region, is an opportunity to show the nation how development can be accomplished with the participation of low-income groups, and be a means for their economic and social advance. It can provide jobs, housing, sorely needed public services, and opportunities for economic enterprise. In the process, it will contribute to better cross-cultural understanding. This is a potentiality that must be addressed forcefully and early, however, if it is to be realized.
7. All of these possibilities are underpinned by the substantial, widespread, public support that the Rio Salado project enjoys. Although 80% of the people are largely unaware of what it entails, almost as many said they would support it if it were to come to a vote, and 2/3 would approve the use of tax money to support it. The respondents were especially enthusiastic of its recreational potential, and its ability to improve the quality of their lives. This is not yet an informed support, nevertheless, the project begins with a great fund of good will. Given effective progress and good public relations, that base of support should only grow stronger.

## Constraints and Difficulties

As in many complex projects, concerned with a large area and affecting many diverse interests, there are a substantial number of problems that must be faced. Our analysis indicates that the most salient ones are the following:

1. Perhaps the most serious difficulty that must be overcome is not a tangible obstacle, but an image in the mind. The Rio Salado, in everyone's experience, has been an emptiness, a back door or barrier to be crossed and then forgotten, a wasteland lined with the houses of the poor, junkyards, dumps, heavy industry and unpleasant activities. Citizens look outwards to the mountains and not inward to the center. The potential of the Rio Salado--that of reversing the outward urban sprawl--can only be realized when this popular image is also reversed. This means that something dramatic must be accompanied by equally dramatic events which attract people to experience that change. Development should be accompanied by intense public relations efforts and must deal with its particular context of neighboring use.

The enormous size and sheer "emptiness" of the Rio Salado--which is one of its advantages because of its ability to absorb substantial, continuous growth of great diversity--means that first growth cannot be scattered along its length, if it is to have any impact. It must, at least initially, be focused in one or two special places.

2. Access is another initial difficulty, despite the location of the Rio Salado at the heart of the metropolitan area. The Rio is cut off along its borders by a whole series of barriers: linear ones like the elevated wall of I-10, the extensive railroad tracks and the numerous transmission lines, as well as the belts of impenetrable use such as the airport, the large public works, and the various industrial districts. The major bridges leap across without offering any access, and cut the river into separate parts. Streets which come directly down to it, or run alongside it, are infrequent. The Phoenix central business district, which is the heart of the region, is cut off from the Rio by 1½ miles of deteriorated industry, empty lots,

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railroad yards, and highway underpasses. The Rio is itself a giant barrier, separating north from south.

Securing functional and visual access, especially the first point of development, will be difficult. Every effort must be made to sew the new growth back into its immediate context, and this will probably take priority over creating any large-scale arteries along the length of the Rio as a whole. Innovative means must be found to penetrate existing linear barriers. Present policies which tend to locate industry and large public works as if they were insulating belts along the edges of the river must be reversed.

3. Water is of course a key problem, perhaps the key problem, along with finance and the popular image. While we find that sufficient water is available, the system of water rights is extremely complex, and conflict over them is endemic. Implementation of the Rio Salado plan is certain to set off a squabble, even if the liquid employed is water which no one else will make use of. Moreover, since the popular image--quite rightly--sees the approach of a serious shortage and an urgent need for conservation, and since the various public agencies are now pressing with increasing vigor to cut back and control the waste of water, it will be disastrous to the Rio Salado project if it is seen as a water spendthrift. Yet its principal market advantage will lie in its watery landscape and this evidently corresponds to the expectations of the general public. In this dilemma, the Rio Salado must use water to great effect, and still use little of it. This will require an ingenious design, and innovation in some respects, but one which also draws on the past triumphs of man-made landscape in arid countries.

4. The long term financing of the Rio Salado reclamation will be a continuing problem. Costs will be substantial, and the competition for public money will be sharp, despite the expressed willingness of citizens to contribute their tax support. The Rio Salado Development District has at present no bonding or taxing powers, and any granting of such powers will be sharply scrutinized by local jurisdictions. Whether a tax increment district can be created is a very open question. State legislation is at present being written to that end, but has been rejected before, and in this case a number of separate localities are involved. Whether any bonds will be secured on the public credit, or whether they will be revenue bonds--and in that case on what revenue will they be secured--is another open question. Substantial federal assistance is unlikely.

It is clear that the improvement of the Rio Salado must generate sufficient private development that the necessary public investment can be paid for, whether in an immediate sharing of costs, or in the long term, via a return as taxation. A balance between market opportunity and the scale of public improvement will be crucial and the creation of a workable financial instrument by which private capital and public resources can be pooled will be just as crucial.

5. The division of the Rio Salado into separate local jurisdictions--several cities and two Indian reservations--is a stubborn problem in its own right. Each jurisdiction has its own policies, which may conflict with its neighbor's. Each is naturally jealous of the course of events in its own domain, and of the revenues that may arise from them. Without a coherent initiative this will result in a scattered development along the Rio, while the strategic requirement is that the initial development be concentrated and smoothly integrated. These inevitable jurisdictional divisions are sharpened by the traditional mistrust between the cities and the Indian communities.

Ways must be found to insure broad participation in the planning, and a just distribution of costs and benefits. Conflicts between local policy and those proper to the Rio as a whole are bound to arise, and there must be a reasonable way of resolving them. Unfortunately, the fragmentation of control is accompanied by very little actual public ownership of the Rio Salado ground.

6. There are a number of environmental conditions which impose special burdens on the area. Foremost, perhaps, is the airport, which not only blocks lateral access for a substantial distance, but requires large cleared areas at the ends of runways. Zones of severe noise impact run for long distances along the course of the Rio, making development and outdoor use difficult. Extensive areas are made unsuitable for residential use, and some areas are poor even for manufacturing and would require an expensive noise-proofing of any buildings. The impacted areas unfortunately lie at the heart of the Rio Salado territory.

Other uses along the Rio Salado cause further difficulties. The many sanitary landfills are noisome in operation and threaten the contamination of the ground water even after they are closed. The odoriferous sewage treatment plants, and the noisy sand and gravel mines are unpleasant neighbors. There are scattered illegal dumps, and run-down industrial uses. All of these restrict the areas which can be occupied, or they will require expensive relocation and clean-up.

The sand and gravel mines are a special problem, since they occupy substantial areas of the river bed, and have a strong motive for resisting relocation. The gravel is of excellent quality, and ideally located for servicing construction in the metropolitan region. Moreover, these companies own much of the river bed, which is held as a series of reserve mining sites. Some sites approach exhaustion, others will be useful for another 50 years. Downstream sites have more sand than gravel and are therefore less attractive to exploit. Relocating sand and gravel operations from their current locations may have an adverse impact on the

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cost of construction materials. Plans for the Rio must deal with this profitable industry, staging a gradual relocation of some plants to less critical locations in the Rio Salado or other washes, avoiding the near-term redevelopment of others, and insuring that the landscape remaining after extraction is handsome and useful.

7. Finally, the Rio Salado is bordered by the homes of many of the poorest people in the region: white, black, Hispanic, and Indian. Unemployment is serious, housing is indecent, and public services are lacking. The quality of schools and of health care is particularly low. School completion is well below the city average, and 1/3 of adult Indians are in need of basic education. While confronting these inadequacies is one of the opportunities of the Rio Salado project, it clearly puts a constraint upon it. Development must not so rapidly inflate adjacent land values that present residents can neither remain nor take advantage of the rise. Physical and psychological barriers must not be erected, so that bordering communities are shut out from the benefits of development. New residential populations will not be attracted unless good schools, at the very least, are installed. These exemplary schools could then become a route of advancement for low-income neighbors, but not without careful pre-planning. Similarly, mechanisms for housing improvements must be created which keep units in the hands of their present owners. Job opportunities must be opened up for local people, as construction and landscaping proceed.

Like any major accomplishment, the Rio Salado will generate substantial dangers and great opportunities. We find that the latter will outweigh the former. The draft analysis which follows spells out these findings in more detail.

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PART II  
PHYSICAL STRUCTURE

# Character and Topography

The Rio Salado Development District lies within Maricopa county and includes parts of the Gila River Indian Community in the west and part of the Salt River Pima-Maricopa Community in the east. The Planning Area also falls within the political jurisdictions of the cities of Mesa, Tempe, Phoenix, and Avondale. It is a narrow strip of land which includes the natural bed of the Salt River and adjoining lands within the one hundred year floodplain ——— ? beginning at the Granite Reef Dam in the east and following the riverbed for approximately 40 miles to the west. The width of the planning area varies from approximately one to five miles, and it covers about 100 square miles. The Rio Salado Development District derives its name from the Spanish name for the Salt River, Rio Salado, on early maps of the area. The old Spanish name and the current legal English name for the river are both commonly used.

It is more than the 100 yr floodpl.

Approaching Phoenix by air, one sees a study in contrasts. The sprawling grid of green agricultural fields rests the eye from the bright, highly reflective manmade surfaces throughout the residential and commercial areas. The flatness of the landscape is randomly pierced by the jutting forms of solitary basalt buttes. Large, irregularly shaped industrial parks and housing developments scattered through the region seem to be consuming the remaining agricultural fields. Phoenix's once crystalline air is now lightly clouded by the combination of pollutants and dust which hangs over the city, dulling the edges of one's field of vision. Man's efforts to tame and develop the desert have been impeded only by the mountain ranges bordering the region and by the winding, gravelly bed of the Salt River, whose periodic flooding has kept development back from its banks.

Once on the ground, the topographic contrasts are more dramatic. The skyline of Phoenix's central business district competes for attention with the Papago, Tempe and South Buttes and the farther horizons of the Superstition, McDowell and Sierra Estrella ranges. Within this context, the Salt River basin seems even more vast than from the air. During the 1980 flood, the waters breached the steeply sloped banks and in places covered a six-and-one-half mile wide area. Aerial photography taken before and after major floods indicates that major changes occur in

the stream cross-section and also in the stream profile. Where previously an island or protruding bank may have existed, the erosion and scour can wash materials downstream and create new islands or filled in areas as the floodwaters recede. A typical section of the Salt River would show rocks and boulders at the river's edges, sandy to very soft material in the center, and alluvial deposits of gravels and river rock scattered intermittently throughout. The riverbed is therefore very dry except for some areas of standing water--those being below the sewer treatment plants, in deep gravel pits which contain ground and rain water, and just below the dam where water has spilled over and become trapped. The river banks comprise a floodplain which consists largely of a sand and gravel wasteland. There are two dozen commercial sand and gravel operations along the river, and as many known landfills. The mining operations are continually changing the shape of the riverbed. Unofficial dumping occurs frequently, creating unsightly piles of decaying household appliances, automobile tires, and the like.

The Rio Salado Development District is segmented north/south by bridges and temporary roads through the wash. The area comprises three types of landscape: the upper and lower six-mile reaches are still largely undeveloped; the adjacent eight-mile stretches consist of agricultural and residential areas, interspersed with occasional industrial development; the central fourteen miles from the Mesa/Tempe line to Phoenix's 40th Avenue is highly urbanized.

The first landscape type appearing in the two endmost segments is an arid, desert ecology in which the impact of flooding is not as severe as in the more populated areas. Even in these sparsely settled stretches, however, the press of new development threatens the fragile desert environment.

In the agricultural segments of the Rio Salado District, residential, industrial, and commercial growth is consuming more and more agricultural land. The landscape is slowly being reshaped by higher density urbanization, but the riverbed is continuing as a dumping ground and mining area.

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In the densely urban central portion of the planning area, which encompasses the city centers of Phoenix and Tempe, the landscape is varied. The riverbed itself is the site of major sand and gravel operations and landfills. The banks of the Salt River have large areas of junk car yards, old and new light industrial and storage plants, and low to moderate income residential areas. Beyond the floodplain the urban landscape is visually stronger with well kept residential and commercial neighborhoods.

The landscape of today is far different from that of the past, prior to the construction of the up-stream storage dams. Because the Rio Salado was once a flowing river it supported a rich array of plants, including large groves of tamarisk trees. The design of the planning area should incorporate, where appropriate, plant species and communities historically found in the area. The landscape is spotted with plants having strong xerophytic characteristics, separated by considerable areas of bare ground or ground occupied by widely spaced small desert plants. Adapted to withstand severe drought, these plants have unusual features which give further identity to this area. Common plants include creosotebush, mesquite, desert salt bush and burroweed. A richer habitat exists west of the 91st Street sewage treatment plant, where one finds willow, cottonwood and tamarisk along the banks of the flowing stream.

If protected from too rapid flood waters, these native Arizona desert plant materials can be easily established within the planning area because of their low water and maintenance requirements. Leguminous plants, such as palo verde and ocatilla, can play a major part in the new landscape. They sustain themselves during the dry periods, then leaf out and burst into flower during and following the rains. This rapid cyclic nature of plant materials is unique to this climate and can add great interest to any arid region planting design.

Although wildlife is scarce, muledeer and smaller mammals and reptiles can be found. Below 91st Street, one can find indigenous streamside breeding birds and migratory and wintering birds. A concentration of small animals and birds is also found at the easternmost end of the planning area. Obviously, the introduction of water will attract

more wildlife as well as support a wider palate of plant materials.

## Climate

The area is characterized by long hot summers with maximum temperatures reaching over 110°F and short mild winters with minimum temperatures of 38°F. One of the principal attractions of this area is the high percentage of sunshine (86% of the year).

The mean annual precipitation range is 6" to 9", with 40% of the total rainfall occurring during the summer months. Winds and precipitation generally move into the area from two distinct directions--in summer from the south, originating in the Gulf of Mexico, and in winter from the west, originating at the Pacific Ocean.

The character of the rains is also varied. In summer, the rains appear as short intense thunder showers, occurring over small areas and sometimes producing destructive flash floods. In winter, the rains may last for several days and usually occur as gentle showers over large regions.

The design implications of these climate conditions should include the following:

1. Shade structures and low water shade trees--to modify the intensity of sun, heat and glare.
2. Water retention areas--such as ponds, lagoons, canals and fields, to alleviate and ease potential flash flooding problems.
3. Location of buildings, shade structures and plantings --to take advantage of and to channelize cooling summer winds.

The planning area is largely a basin and range formation: a series of broad alluvial basins enclosed by widely separated hills that extend southward from Camelback Mountain to Tempe and Bell Buttes. These "basins" or valleys are filled to a substantial depth with unconsolidated sedimentary material. Most of the hills and higher lands of the project area are underlaid with basalt, and in some places, such as the band between the Tempe and Bell Buttes, this basalt even appears over the surface.

Within the study area there is an abundance of sand, gravel and stone cobbles. Within the Salt River channel, particularly in the narrower, deeper areas of the riverbed, the finer particles of sand, clay and silt have washed downstream, leaving an abundance of larger cobbles in the 4" to 10" range. In the wider areas there is normally a deposition of fines, as the floodwater recedes. The gravelly, stoney material usually extends to a depth of more than 100', with mixtures of silty, clay materials and occasional clay-silt lenses.

Outside the Salt River area, within about two miles, the same soil conditions exist, except that there normally is an overburden up to about 12' thick consisting of sandy, silty fines with some small stones and gravel. This is covered with topsoil to a depth of about 1" to 6".

The bottom lands of the Rio Salado District, being composed of very coarse soils of low water holding capacity, are generally unsuited for agriculture. The broad plains and side slopes of the valleys and river on the other hand, being composed of potentially very productive soils when irrigated, will be very suitable for agriculture. Any intensive development of green ways would be most easily developed within the broad plain areas. With soil improvement, including increased water holding capacity, some green spaces could be developed within the bottom lands.

In both soil situations, if exogenous plant materials are to be introduced, high saline levels may make it necessary to separate soils via semi-permeable membranes to keep the salt from injuring or killing the plants. Constant and well maintained drip or trickle irrigation systems will need to be incorporated into any planting design except one utilizing naturalized plantings. Because of their need to be protected from salt and high water and maintenance costs, exogenous plants like those

used in most urban parks will be best used in dense clumps rather than long greenbelts.

### **Seismology**

The chance of earthquakes occurring in the Rio Salado project area is extremely low. However, some tremors from earthquakes in California and Mexico have been felt here.

Many recreational opportunities exist in the Rio Salado Development District. There are several overriding goals for this central element of the project:

1. To bring people together across existing physical and social barriers, offering more opportunities for informal gathering.
2. To directly and indirectly teach people to respect and appreciate their special and fragile desert environment.
3. To create a more positive image of the Rio Salado.
4. To provide accessible regional and local facilities for active recreation, from wilderness trails to fields for organized sports.

In planning for recreation in Rio Salado it is important to be aware of existing recreational resources. Also important are the trends in recreation based upon user needs and economic factors. Significant regional recreational areas are listed below. Those which are close to or within the planning area or that impact the planning area are marked with an asterisk (\*).

## 1. National Trails Systems

- a) North Mountain Trail--9 miles in northwest Phoenix: climbs 738 feet through interesting rock formations to an observation point where one can view the surrounding area.

- b) South Mountain Trail--14 miles of desert trail in the center of South Mountain Park, providing for hiking and horseback riding.
- c) Sun Circle Trail--110 miles of urban to open desert trail forming a loop around the Phoenix Valley for hiking and bicycling.
- d) Squaw Peak Trail--1.2 miles of very popular urban wilderness area with a rich desert landscape and views.

## 2. State Parks

- a) Painted Rocks State Park--Historical park (Indian Petroglyphs) of 140 acres with restrooms and 25 primitive camp sites, 15 miles west of Gila Bend.
- b) Lost Dutchman State Park--300 acres of desert park on the Apache Trail in Pinal County bordering Maricopa County. Facilities include shade ramadas, picnic areas, restrooms and primitive campgrounds. This park serves as the trail head for hiking and horseback riding.

## 3. BLM Lands--Greenbelt Resource Conservation Area-- South of Buckeye. Hunting and hiking.

## 4. State Game and Fish Department

- a) Black Canyon Shooting Range--20 miles North of Phoenix. 1290 acres, plus 160 acres of federal lands.
- b) Base and Meridian--173 acres of wildlife habitat, 3 miles south of Cashion.
- c) Gila River Wildlife Area--6896 acres of wildlife habitat from the Avondale to Gillespie Dam.

## 5. Major Water Bodies (all of those listed have at least one boat launch ramp)

- a) Apache Lake Marina--Maricopa and Gila County, 33 miles northeast

- b) Bartlett Lake--Maricopa County
- c) Canyon Lake--Maricopa County
- d) Lake Pleasant--Maricopa and Yavapai County; heavily used for recreation, including sail-boating during spring, summer and early fall.
- e) Sugaro Lake--Maricopa County; heavily used for recreation during spring, and early fall.

6. Maricopa County

- \*a) Estrella Regional Park--three miles south of Goodyear. 18,000 acres with tent campsites, archery range, golf course, and picnic facilities.

7. Municipal Parks and Recreational Areas (small urban parks in Phoenix are generally underequipped, lacking in trees, shade structures, and benches)

- \*a) Casey Abbot Recreational Area
- \*b) Papago Park--(Phoenix)-picnic facilities and ballfields
- \*c) South Mountain Park--(Phoenix)-picnic facilities and ballfields
- \*d) Arizona State Fairgrounds
- e) Phoenix Municipal Stadium
- f) Phoenix Zoo
- g) A.S.U. Sun Devil Stadium (Tempe)
- \*h) Moeur Park--(Tempe)-10 acre picnic area with playground for handicapped individuals on Mill Ave.
- \*i) Tempe Beach Park--15 acres of picnic, ballfields, swimming pool, and playground facilities at 1st Street and Mill Avenue
- \*j) Playa Margarita--(Phoenix, 36th Ave. and Roeser)-5 acre neighborhood playground

- \*k) El Prado--(Phoenix, 19th Ave. and Alta Vista)-a large 40 acre open, largely passive recreation area with one basketball court and some picnic benches
- \*l) Lindo Park--(Phoenix, 23rd Ave. and Roeser)-10 acre neighborhood park
- \*m) Rio Salado Industrial Park--(Phoenix, 12th St. and Elwood)-now under construction, this facility will have picnic facilities, ball courts, golf course, and a swimming pool

In addition, there are other resources that reflect the strength of the Valley as a center for recreation. Located in this area are:

1. Nine riding stables.
2. Fifty-six golf courses, thirteen of which are private courses.
3. Six race tracks, two for dog racing, one for horse racing, and three for auto racing.
4. Twenty-one amusement parks, water sports, and skating rinks.

Phoenix is said to have more than 30,000 backyard swimming pools. There are 25 man-made lakes in the region, and Arizona has more boats per capita than any state in the nation.

As the price of gasoline increases and as the economy drags, people will be (and are being) forced to spend more time using local recreational areas. The Rio Salado District is ideally located to serve this need. In developing this area, particular thought should be given to designing places to support the following list of activities:

- a) Lakes for fishing and non-power boating--small lakes and canals can be designed using water pumped up from below the river bed. Treated sewage effluent is excellent for irrigation of plant materials along the banks. Long cooling canal systems would be especially interesting waterways where one could enjoy canoeing and,

along their edges, biking, walking and jogging. Canal systems are especially prudent in conservation of water since only a small surface area is exposed to evaporation and, being in a solid channel, no water percolation need occur.

- b) Local wilderness and camping areas--these could be developed at the western end of the project area by the Gila River Indian Community. Care must be taken that the development not encourage public use that may intrude upon the Indian Community.
- c) Scenic drives and walking trails--both could be accomplished along the Rio Salado. The walking trails could meander from high on the river banks, along the small lakes and canals, down past creative playgrounds and through beautiful dry desert landscapes and lush mini-oases. These walks and drives could be combined with educational self-guided tours.
- d) Horseback riding trails--these could follow and break apart from the scenic drives and walking trails. An equestrian facility could be located near water to refresh horses and riders.
- e) Public golf course--golf is one of the most popular forms of recreation in this region. A golf course could be located in the Rio Salado Project Area, possibly at the eastern end of the site. A.S.U. currently plans one there for its own use.
- f) Courtgames--tennis, handball, racquetball and the like are popular sports, especially among the non-residents of the area. Such sports facilities should be in close connection with public transportation routes and urban areas.
- g) Rollerskating--specially paved and graded "loops" and "hills" can be designed for this revived sport. It could also become a track for go-carting, tricycling and skateboarding, if need arose.

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- h) Creative and adventure playgrounds--besides stationary play environments, which with imagination can be made quite interesting, adventure-type playgrounds should be considered. Environments that can be built and modified by the children themselves, movable play equipment, cars, trucks and old railroad engines for climbing on, pony rides, water games and even an area for operating small bulldozers could all happen in the riverbed and on terraces along its banks.
  - i) Grass fields for field games--as in Indian Bend Wash these multi-use open spaces can also serve as a flood channel during times of high water.
  - j) Domed stadium/arena--at present, the need for this facility is somewhat controversial. Further economic studies will help determine feasibility and location.
  - k) Recreation for the handicapped--17% of this region's population is handicapped in some way. There are many possibilities for providing additional, appropriate, and accessible recreation for these people in the Rio Salado District. Herb gardens and specially designed paths for the mobility impaired and blind person could be part of larger walking trails and arboretums. Playground design should also respond to the needs of handicapped children, and there have been many playgrounds of this type designed which can serve as models for this endeavor.
  - l) Arboretum--a special opportunity in the Rio Salado may be the creation of a large arboretum of low water plants. With its close proximity to Phoenix, this facility could serve as a learning center for desert landscaping.

- m) A water museum--focused around the natural and human uses of water, and displaying these uses in dramatic ways, such a facility could be a unique desert attraction.

The uses of the bed and banks of the Rio Salado are varied.

Sand and Gravel mines are found in extensive operation throughout the Rio Salado District. In 1981, 8 million tons of excellent quality gravel were mined from the river bed, most of which was used locally. Figures show that two-thirds to three-fourths of all sand and gravel mined in Maricopa County is taken from this river. Also, contrary to previous belief, sand and gravel are expendable resources with the life of the existing mines on the river varying from 10-50 years. At the end of their productivity, with some forethought, these gravel mines can be reclaimed and reused for active and passive recreational uses.

Approximately 20 landfills occur along the Salt River. Only five of these are active. These landfills present numerous constraints for the development of the project area. The details will be outlined in later sections of this evaluation. There are also two large sewage treatment plants found within the District. The environmental problems associated with these will also be discussed later.

Silt extraction occurring by the stockyards in the western part of Phoenix is a minor operation in the riverbed. This mine could be an excellent source of supply for planting medium for any new landscape development in the project area. In addition, with their machinery and knowledge of the riverbed and grading techniques, the silt extractor company could be instrumental in reshaping and terracing some of the landforms within the Rio Salado District.

Finally, the river's bed and bank are presently being used as "free" dumping grounds for old cars and garbage. Future development should discourage these negative activities by eliciting a strong positive sense and character for the river.

As one would expect in a fast growing metropolitan area, there are many new developments now occurring and being planned. Following is a list of projects which we are currently aware of. Only some of the activities outlined below are actually within the project boundaries. Others have been included because they either have a direct impact upon the project area or because they will need to be taken into account as alternatives are being developed for the Rio Salado.

## I. Phoenix:

### A. Housing.

1. With Phoenix residential neighborhoods extending to the mountain edges, and with 40% of the land vacant, in-fill housing, both apartments and single family, has begun.
2. The City has targeted an area in South Phoenix (Neighborhood Strategy Area B) for a major rehabilitation and infusion of public aid for housing and commercial development.
3. The City's utility infrastructure is no longer being extended.
4. Conflicts between low income neighborhoods and new industrial facilities are apparent in South Phoenix and especially the I-10 area.

### B. Industrial/Manufacturing.

1. New industrial parks are developing in the areas adjacent to I-10, the airport, in the agriculture zone of West Phoenix, and in the Rio Salado Development District.
2. These industrial parks are primarily warehouse and shipping/distribution centers and not manufacturing operations.

C. Civic.

1. The central Phoenix (downtown) area has a street improvement program starting in 1983 and wants to become the cultural center of the city.
2. The fairgrounds is rapidly outgrowing its present location.
3. There is talk of a domed stadium for the Phoenix Tempe area.
4. Several new bridges have already replaced those washed out in the last flood and more are programmed.
5. There are plans to expand Sky Harbor Airport. Residential areas have been cleared for this purpose.

D. Commercial.

1. There is a major effort underway to redevelop downtown as an active primary center of commerce.

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II. Mesa:

A. Housing.

1. Development continues rapidly in the south and west sections of Mesa.

B. Industrial.

1. A major new contributor to Mesa employment will be the Hughes Aircraft plant in north-east Mesa.
2. Hi-tech and electronic base firms are choosing the Mesa area as the primary location point in the region.

C. Civic.

1. New bridges will replace washed out ones. A new one is planned at Thomas and McDowell to connect across to the Salt River Pima-Maricopa Indian Community.

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III. Tempe:

A. Housing.

1. Continued expansion is occurring in the south section of Tempe.
2. Trailer courts and apartments are developing on the east side adjacent to Mesa.

B. Industrial and Manufacturing.

1. A.S.U. is planning a large research park in South Tempe on their existing property.
2. Hi-tech and electronic companies are also locating in the Tempe area.

C. Civic.

1. The Downtown and A.S.U. continue to grow and expand.
2. A.S.U. is planning for expansion of its recreation and sports facilities, including a golf course bordering on the river, as well as for a new school of engineering.

D. Commercial.

1. There is a perceived need for an additional new shopping center.

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IV. Gila River Indian Community:

- A. Maricopa County plans to construct or improve roads and river crossings at 91st and 115th Avenues.

V. Salt River Pima-Maricopa Indian Community:

A. Industrial/Manufacturing/Agriculture.

1. Industrial areas will be expanded along the river edge.
2. Agricultural land will remain constant.

B. Civic.

1. Health care facilities will be increased to serve residential clusters.

C. Commercial.

1. There are plans to develop a commercial office park at their boundary to Scottsdale and where new Thomas Road Bridge will be constructed.
2. Commercial recreation is contemplated near the dam in the future.

Public land ownership will likely be critical to the success of the Rio Salado development both to make large scale recreational development possible and to control key sites. Such publicly owned parcels reduce the time consuming and costly process of land assembly, and insure a greater degree of land use control in the development process. Except for some small holdings by the State Land Trust, the Indian Communities, and the Federal Government, there is little publicly owned land now available to help steer or stimulate development. Each municipality does own land, but these parcels are occupied by important, long-term uses such as landfills, sewer treatment facilities, and public housing developments. Indian community land is, of course, tightly guarded for the primary benefit of its residents.

The State Land Trust holds more than 500,000 acres of land in the Phoenix area, a tiny part of which falls within the project area boundaries. The Trust now earns revenues for education by leasing this land, primarily for grazing and agricultural uses. The average value of this land is \$3,000 per acre, leased at less than \$1.00 per acre. The State is also entitled to receive 200,000 additional acres from the Federal Government in the future. Some of this acreage may be in the river bottom.

Another resource is the 9.5 million acres the State Land Department holds throughout the State. These Trust lands, and especially those in the Phoenix area, may potentially be a valuable resource for the Rio Salado through exchanges with private landowners in the District who may be interested in acquiring State land at another location.

The recent thinking of the State Land Trust is favorable to Rio Salado Development. A Task Force which studied the Land Trust leasing system recently recommended that "procedures should be implemented to support such community oriented public projects as the Rio Salada Project..." Current policy is to promote development of urban lands for income to the Trust. The Trust recognized that far greater earnings are possible if lands are leased or sold for commercial uses rather than for grazing. They see their lands in particular as a resource for increased housing development.

Several problems exist within the current statutes, however, which prevent the Land Trust from realizing its fullest positive potential. First, land must now be sold or leased to the highest bidder at a public auction. The Task Force has recommended that this be changed to allow factors such as compatibility of the use with existing public and private facilities and energy and water conservation to enter into disposition decisions. Second, the maximum terms for leases are extremely short--10 years for agricultural use and 20 years for mineral and other uses. The Task Force has recommended that commercial leases for as long as 65 years be allowed, and that lessees can be required to make payments to the relevant jurisdiction in lieu of property taxes.

Third, current law requires that disposal and leasing of property be tied to the appraised value. The Task Force recommends that the rental rates be more flexible and creative. One approach, for example, might be a percentage of the profits of the commercial lessee. Fourth, the statute allows land exchanges, but prohibits these exchanges from crossing county lines. The Task Force has recommended that this prohibition be removed.

Finally, a real limit to possible land exchanges is imposed by the small staff and operating budget of the Trust. Such exchanges are complex and legally cumbersome and the Trust can presently manage only four or five such exchanges per year on a state-wide basis. For land exchanges to be a significant factor in development of the Rio Salado, the Trust must be given more staff to manage them.

The majority of Phoenix area residents have private means of transportation--most often a passenger car. One-third of area residents own pickup trucks. In a recent consumer survey, 3% of those interviewed indicated that they use public transportation. In fact, most residents complain about the mass transportation system, reporting that there are too few bus lines and that scheduled pickups are infrequent and unreliable.

The heavy reliance on private automobiles has caused a steady flow of traffic on the roadways in the planning area. While traffic tieups are relatively minimal compared to most other large urban centers, there is indeed quite a bit of traffic on the area's wide and well maintained streets. This is especially so in Tempe where traffic is funnelled through from the rapidly developing areas of Mesa and Tempe to Phoenix. The Mayor of Tempe reports that 24,000 cars use Mill Street each day. He also indicates that 70,000 people attend football games at the Sun Devil Stadium at A.S.U., causing severe traffic problems. Backups also occur daily on the I-10 freeway during the peak rush periods.

The planning area is primarily served by numerous major arteries, the Maricopa freeway (I-10), the Hohokam Freeway, and the Bee Line Highway. The road system is in relatively good condition and each municipality has planned to continue upgrading these thoroughfares in the coming years. The City of Pheonix, for example, has programmed \$179.5 million to be spent on major street improvements from 1981-1987. Phoenix road construction projects which will affect the planning area are: University Drive in Phoenix between 40th and 48th Streets; 40th Street from Broadway Road north to University Drive; and, Broadway Road from 19th Avenue to 27th Avenue. The proposed extension of I-10 westward through Village A would likely stimulate growth of new industrial parks, and would diminish agricultural land.

The City of Tempe has begun construction of a parkway system which will run along the river bottom connecting into the freeway system. The City of Mesa is considering the continuation of this parkway system through its boundaries. Maricopa County has recently obtained a right of way to improve the river crossings at 91st Avenue and 115th Avenue. The Salt River Pima-Maricopa Indian Community is planning the extension of Curry Road easterly from Hayden Road across Pima Road.

Bridges across the Salt River serve an important function for the proper flow of workers and industrial goods to and from their destinations. During the last major floods of 1978 and 1980, most bridges were washed away. Some of these have now been replaced, while others are planned for construction during the next three to four years. Following is an inventory of the bridge crossings and their status:

<u>Bridge</u>	<u>Status</u>
67th Avenue	desirable, but not programmed
51st Avenue	newly constructed
35th Avenue	programmed
19th Avenue	programmed
7th Avenue	box culvert-no bridge planned
Central Avenue	withstood the floods; still in place
7th Street	programmed
16th Street	newly constructed
24th Street	newly constructed
I-10, east of 24th Street	withstood the floods; still in place
44th Street	newly constructed
Mill Street	withstood the floods; still in place, but needs repairs
Rural Road	newly constructed
Hayden Road	programmed

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<u>Bridge</u>	<u>Status</u>
Pima-Price Road	programmed
County Club Road	programmed
Gilbert Road	programmed
Alma School Road	newly constructed

## **Fire Protection**

Fire protection is supplied by the Phoenix, Tempe, Mesa, and Rural Metropolitan Fire Departments. Except for one fire station needed, but not funded, at 35th and Southern Avenue in Phoenix, service seems quite satisfactory for the existing population and businesses. Future needs will depend on the amount and type of new development proposed.

## **Police Protection**

Although the Phoenix metropolitan area is 26th in size nationally, it ranks 9th in crime. Phoenix police report numerous burglaries and thefts in areas along the river. Much of this is crime against businesses carried out by adults. Other than high crime areas around public housing developments and within downtown, the Phoenix Rio Salado area seems to have an average crime rate for household burglaries and crime against individuals. As in most cities, juveniles are responsible for 50-75% of all burglaries in the City.

Only one police station is located within the Phoenix Rio Salado boundaries, at Sky Harbor Airport. The Tempe police facility is located several miles south of the river. The County Sheriff is responsible for all unincorporated areas and small municipalities, and the Salt River Pima-Maricopa and Gila River Indian Communities are policed by their own departments, funded by the Bureau of Indian Affairs.

Given the high crime rate for the City, and for businesses along the river in particular, new development might be discouraged from locating within the Phoenix boundaries unless policing becomes more visible and effective.

**Solid Waste  
Disposal**

The tremendous problem of what to do with urban solid waste has not evaded the Phoenix area. Only two sites are now open to serve the City of Phoenix. One of the two will be filled to capacity within five years. The City is seeking an alternative site within South Phoenix due to the prohibitive costs of hauling waste to new sites that may be located in outlying suburban areas. The Salt River banks have traditionally served as the dumping ground. Pressure to establish a new landfill along its shores may be strong if another suitable site away from the river is not found soon.

The Cities of Mesa and Tempe also operate landfills on the River. Future alternatives for these sites have not been considered. The Salt River Pima-Maricopa Indian Community also leases a landfill site to the City of Scottsdale. Plans for this community imply that this activity may continue for some time. The negative aspects of all landfills along the river are not only aesthetic. They also create foul odors which may inhibit development and they have contaminated ground water. This is discussed in greater detail in the Environmental Problems section of this report.

The barriers considered here are physical elements that separate neighborhoods or districts by restricting movement and connection physically, socially, psychologically or visually. Many such barriers are found throughout Rio Salado and generally fall under one of two categories: lineal barriers or mass barriers. Lineal barriers include the railroad tracks, I-10, transmission lines, airline flight paths, and the Rio Salado itself.

The impact of the railroad tracks as a barrier is particularly strong at Central Avenue where the street passes under the tracks. The underpass creates a "dark pit" which makes the southbound driver feel he is coming up on the "wrong side of the tracks". Ways of opening up this underpass should be explored in the design process. On other streets such as 7th Avenue, and 7th and 16th Street, where the street passes over the railroad, the barrier effect is less. Neighborhoods all along the route are, of course, effected.

The elevated I-10 is an even more significant barrier, which closely parallels the river from Central Phoenix to Tempe. It also crosses the river in a broad swath. Because it is elevated on an earth beam, this barrier can only be penetrated at major streets. Further, since it is becoming lined with industrial developments, its zone of influence and separation of the Rio Salado from residential areas is much extended. This barrier will likely prove very resistant to change but local connections may be improved at key crossings. Particular crossings needing attention are Central Avenue, 16th Street, 7th Avenue and 7th Street from the North, and 32nd and 40th Street from the South, where important pedestrian connections to the Rio Salado should be made.

Transmission lines allow free movement under them, but create a problem in several ways. First, the high poles and wires are a visual barrier, dividing a long stretch of land. Second, the static electricity given off from the current is somewhat dangerous and pedestrian activity below these wires should be restricted. The noise of the current through the wires is also unpleasant and distracting. Third, building codes do not permit the building of structures under high voltage power lines, although parking and paving is allowed with the permission of the utility company. Although it is probably too costly to

relocate the existing wires, for the immediate future, any new high voltage lines in Rio Salado should be carefully located so as not to interfere with prime housing development, business or recreational areas.

The Rio Salado itself is a lineal barrier between the northern and southern parts of the Phoenix metropolis. Many residents of South Phoenix appear to feel that the area has been accorded second class status by the City government. They feel they are on "the wrong side" of the river. The fact that Tempe and Mesa have become major centers of regional, industrial and residential growth has made separation from Phoenix a more acute problem than in the past. Mill Street in Tempe has become a daily commuter bottleneck as a result and the isolation of this area during the last major flood creating severe problems. The new bridges now under way, together with the development of the Rio Salado should have as a primary goal the knitting together of the northern and the southern metropolis.

Mass barriers include sanitary landfills, sewage treatment plants, large industrial districts, the airport, large areas used primarily for junkyards and open lot storage, unplanned "free" dumping areas, and the sand and gravel mines. The sanitary landfills, sewage treatment plants, and airport are necessary operations which cannot be relocated in the short run, but by minimizing pedestrian and residential uses within close proximity, the negative impact of these large barriers can be lessened. Special planting and grading at the edges of these operations can also help to screen them from view. Nonetheless, they will continue to influence the type of development possible in their vicinity.

So too, the large industrial parks, some of which are made up of well designed and well landscaped buildings, will not be moved. Unfortunately, these "parks" create no useful park areas, and instead are substantial barriers to approaching the river. Care should be taken in the future to avoid such large areas of a single use along the Rio Salado.

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One of the most visually disturbing of the mass barriers are the areas of open lot storage and junkyards. These are especially prevalent on the north and south banks west of Central Avenue. They are intermixed with areas where people have sporadically and thoughtlessly dumped their old cars, broken household items and trash. The image of the Rio Salado as a place where such activity can occur must be changed, since this type of use makes for very unpleasant connections to the rest of the city. If the proposed development is successful, these areas will be gradually upgraded. In the short run, they must at least be screened along key approach routes.

The sand and gravel mines are numerous and restrict movement into and along the Rio Salado. If they cannot be relocated or at least reduced in number, they will severely restrict the recreational and urban development potential of the riverbed. At the end of their productive lives, these mines should be reclaimed and developed as recreational areas.

## Landfills

There are 24 official landfill sites along the river's edge and some unofficial dumping areas. Following complaints about the contamination of well water in the area of the closed Estes Landfill, located adjacent to the active 40th Street Landfill, the Arizona Department of Health Services investigated conditions at this site. What these experts found was that leachate had been produced at the Estes sites for a period of three years (1978-81). This was caused when the water table rose as a result of recharging from the major flood of 1978. The water mixed with the landfill matter to produce leachate which migrated through the aquifer and contaminated local ground water and wells.

The ground water testing in 1982 revealed an excess of common cations and anions. The most dangerous substance present was a potential carcinogen, vinyl chloride. Fortunately, the present water use down gradient from this landfill is for industrial and irrigation purpose. The two industrial wells are contaminated. This ground water is now unsuitable for domestic use without prior treatment for trace metals and organics. Although other landfills have not been similarly tested, there is a fear that they too may have caused contamination of a major portion of the ground water within the river bed and closeby areas. The City of Phoenix has budgeted several surface modifications and monitoring programs for these landfills into its Capital Improvements Budget. Total correction of this problem, however, is doubtful.

This problem has implications for Rio Salado Development. New water bodies must be isolated from these fills, and water used for irrigation also kept away. Water pumped from the vicinity of the fills, which is desirable to prevent further leaching, must be carefully monitored for possible toxic substances and, if reused for water features, must be heavily diluted with unpolluted water.

Another problem documented by the Department of Health is the build up of explosive gases. Methane gases are created within the landfill matter as a by-product of solid waste decomposition. The gases become dangerous when the volume exceeds a suitable level. This gas also migrates and collects in structures such as buildings, sheds, utility lines, and drainage lines, causing fires and explosions. The City has also been ordered to install gas

monitoring systems and migration control systems for gases at its landfills. This problem may also limit the ability to place structures near certain landfill sites.

### **Sewage Treatment Plants**

Three sewage treatment plants are found along the Rio Salado, one in Mesa and two in Phoenix. Odors from the sludge beds of these treatment plants, especially those near 91st Street north of the Gila River Indian Community, can be very offensive and the plan must take this factor into account. New residential and recreational areas must be located upwind and far enough from these operations so that the odors will not intrude.

This undrinkable water is also a positive resource. Second day water from the plants could be reused for the irrigation of golf courses, special plant communities to create small lush oases along the Rio Salado, and for the irrigation of other landscape and recreational uses.

### **Air Quality**

The EPA reports that airborne dust is the dominant particulate pollutant in the Phoenix air. The Zoning Administration, therefore, has placed emphasis on enforcing regulations regarding the paving of the parking areas and roadways. This factor will be important in the design and cost of developing the desert character of the Rio Salado. Its recreational uses must not exacerbate this pollution problem.

## The Airport

According to leading experts in the field of airport related noise, areas that have Noise Exposure Forecasts (NEF) levels greater than NEF-40 are generally unacceptable to people, while levels less than NEF-30 are acceptable. Following is a list of uses and the maximum noise levels that are advisable and compatible.

	<u>NEF</u> (maximum level)
Residential	30
Commercial/Retail	40-45 *
Research or Scientific Activities	30
Industrial/Manufacturing	45-50
Recreation	40

The presence of Sky Harbor Airport will be a significant factor in the noise levels and development possibilities within the project area. Given the above maximum noise levels several areas within the project area are currently severely impacted. The land area bounded by 7th Avenue on the west, Apache Blvd. on the south, Scottsdale Rd. on the east, and Van Buren Rd. on the north, exceeds a level of NEF-30. This means that residential areas currently located within this boundary are already experiencing unduly high noise levels and that the placement of new housing there must be seriously evaluated.

Another, smaller area exceeds the NEF-40 level and is therefore, somewhat incompatible for recreation as well. This area is bounded by 16th Street on the west, Priest Drive on the east, the railroad right of way on the north, and University Drive and Buckeye Road on the south.

Obviously, the closer one moves to the airport, runways, and other activities, the higher the noise level becomes and thus more and more uses are eliminated.

In a 1974 study, experts predicted that the noise impact would increase by 1985 unless modifications are made in the engines of aircraft, the source of most noise. Many

\* Regardless of use, structures within areas that exceed NEF-40 should be required to have noise level reduction measures built in.

proposed means have been recommended to try to alleviate this increase. However, market conditions, the economy, and a national government reluctant to force changes have thwarted these attempts.

Plans for airport expansion are now being considered by the Phoenix City Council. It is not known in what way these boundaries for noise levels will change. There is every reason to suspect that the boundaries within which certain uses are incompatible will increase.

A regional archaeological overview of the Phoenix metropolitan area has been prepared by the Office of Cultural Resource Management, Department of Anthropology, Arizona State University. This office has developed an inventory of all recorded aboriginal archaeological sites and has ranked them in terms of their potential scientific and historical significance. The designations are as follows: very high sensitivity, high sensitivity, moderate sensitivity, and low sensitivity. In all cases, an intensive, on-foot survey of areas that will be directly affected by construction must be conducted before archaeological clearance is given. The Environmental Protection Agency will not award 201 Facility Construction Grants without a demonstration of archaeological clearance.

Areas along the Salt River in the agricultural district west of Phoenix have been ranked as high sensitivity districts. There are also several other areas which have been ranked as moderately sensitive, since they contain extensive evidence of past Hohokam habitation sites and irrigation systems. Although no surface evidence of any kind remains, sub-surface materials are a real possibility.

Those areas mapped as archaeological sites and therefore subject to an examination before construction grants are awarded are:

1. The flood plain from Price Road in Tempe to the easternmost boundary of the planning area.
2. Mill Avenue to Scottsdale Road in Tempe on the north bank of the Salt River.
3. 40th and 48th Street at Buckeye Road in Phoenix.
4. 35th Avenue and Southern Avenue in South Phoenix.
5. 99th Avenue and Baseline Road on the south bank of the river.
6. 107th Avenue from Baseline north to Broadway Road.
7. The river bottom and extending southward in the westernmost section of the planning area from just west of Litchfield Road to Reems Road.

This section highlights those policies and development control issues that will influence the Master Plan for the Rio Salado.

## **Mesa**

House development in Mesa is concentrating along the freeway corridor considerably south of the River. The City is discouraging new housing in the northern sector by withholding the extension of water and sewer services. This policy has been supported by the residents of this low density area and by owners of agricultural land along the river. Although city planners envision little change within the project area, the construction of the Hughes Aircraft facility may create a demand for increased housing and commercial development along the Rio Salado, requiring a change in current Mesa policy.

## **Salt River Pima- Maricopa Indian Community**

Since 1960, this Indian community has had a General Development Plan which has been updated from time to time. To enforce this plan, the Land Management Board assisted by staff makes recommendations to the Community Council which acts on each development proposal. This process involves a complex and time-consuming schedule of hearings and other evaluations. Major features of the General Development Plan include increasing land for commercial use on sites along the major arterials such as McDowell Road, encouraging commercial and recreation development at the eastern boundary with the Rio Salado District and the western tip of the Indian community at Hayden Rd., prohibiting new non-Indian housing, encouraging low density housing development which preserves the existing natural characteristics of the land, and maintaining the amount of land devoted to agriculture. The two Indian housing clusters are located away from the major arterials and some distance north of the river.

This land development policy currently dictates that industrial uses will continue to be the predominant landscape feature near the river. These economic activities are a vital resource to the overall health of the community. There will be little or no chance of bringing housing or people-oriented activity close to the river. The Community has also begun to assume ownership and control over some economic activities which are currently operating under lease arrangements with outside interests. Indian take-overs of the sand and gravel operations makes most unlikely the discontinuance of that activity in this part of the Rio Salado.

## Tempe

The City of Tempe has invested significant staff time, volunteer energy and public resources in developing a Master Plan for the Tempe portion of the Rio Salado Development District. The City has carefully considered the current use and several future development options. It has recently adopted a final plan and zoning overlay, which are now the documents which give guidance to the City Council and its Boards and Commissions in making decisions. City Officials have indicated that proposed changes to this plan will be considered. It is unlikely, however, that this City would be initially receptive to proposed major changes in their plans, given the intensity of their prior effort.

The Tempe Plan is a moderate water development scheme encompassing 200 acres of multi-use lakes, ponds and inter-connecting streams. The reclaimed river bed and flood plain would have several new recreational facilities such as an equestrian center, an auto course, and a new golf course at A.S.U. Additional high quality, low density housing on the north edge of the River from 48th Street to Priest Drive would be created, light and heavy industrial uses would be continued at their current locations, a new highrise resort hotel, restaurant and lakeside retail site would be created at Curry Road, and Mill Avenue, and a new commercial area east of Mill Avenue, wrapping partially around the base of Tempe Butte, is envisioned. The plan also features a proposed Rio Salado parkway system on the south and north of the channel, connecting to the regional freeway system.

## Phoenix

Working with citizens throughout the City, the City of Phoenix developed the "Phoenix Concept Plan 2000: A Program for Planning" in 1979. This plan is intended to help public and private decision makers shape the growth in Phoenix in the most desirable, efficient, and equitable manner. Also created was the Interim 1985 Plan, which outlines development trends desired by the year 1985. Overall, the development of Rio Salado for multiple uses is stated as a goal within Concept Plan 2000 and has been restated many times by numerous public officials.

Concept Plan 2000 is based upon the Urban Village concept. This is an approach which divides the City into 11 distinct sub-areas and proposes that each village be a mini-community with an identifiable core. Each village will have its own character and emphasis, but it is intended that each village will have an adequate housing supply and mix, employment opportunities, and other physical and social resources for its residents.

In considering planning options for the Rio Salado District, development plans for Village 8 (the Inner City), Village 9 (South Phoenix), and Village A must be examined. A principal feature of Village A is the reservation of the Rio Salado area for agricultural and industrial use. No new residences are recommended. The Inner City Area Plan (Village 8) shows a solid industrial strip between the freeway and the river, except for a 5 block residential pocket west of 16th Street. If implemented, this industrial strip would create a barrier constraining the mixed use character of Rio Salado Development and making it more difficult to create active connections between South Phoenix and Downtown.

The cores for both Village 8 and 9 are located along Central Avenue. Within these cores, higher density housing, commercial development and other intense activities are encouraged. This concept offers the Rio Salado District the opportunity to consider higher density development in the Central Avenue Corridor, without conflicting with current City planning policies.

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Although the Concept Plan 2000 is designed to serve as a guide for decisions by the Planning and Zoning Commission, City officials made it clear that new industrial uses are a high priority. A Single User Employment District zone was created in 1981. This allows single companies to create campus-like light manufacturing or research plants on sites of 20 acres or greater in residential areas. Generous building set backs and landscaping are required.

Even with such specifications, however, the end result is not always desirable to the neighborhood. The land use plan for Village 9, for example, restricts industrial activity to areas east of 32nd Street. Citizens of Village 9 indicate the proposals to rezone land to industrial designations west of 32nd Street have continued to be approved by the City. They believe that such approvals are destroying neighborhoods in South Phoenix. A continued failure to follow industrial location plans in the future could undermine the success of the Rio Salado project.

The City has also begun making changes in the zoning ordinance to stimulate the development of a higher density, multi-family housing stock. A new residential zoning district was created which calls for 22 units per acre. The previous zones allowed either 14.5 in the R-3 or 29 units per acre in the R-4 zone, leaving a considerable gap in between. There are also fee waivers and density bonuses available for multi-family and highrise development. These policies offer opportunities for higher density development within the Rio Salado Development District.

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**County**

The County has very minimal control over the development of its land. This is particularly true for plots of 5 acres or more or for agricultural, mining, or railroad holdings, all of which are exempt from zoning requirements. In fact, we were told by a County planner that some people move to the unincorporated area precisely to avoid government regulations. It may be that increased State Land Trust ownership of land here would be a desirable and more effective approach to controlling the future development of this sector of the project area.

**Gila River  
Indian  
Community**

Although the precise plans of this community have not yet been identified, it appears that little change in current land use is envisioned. Agricultural use with a small housing settlement represents its current land use. The Community has total control over its land area and development proposals are generally slow to be considered and difficult to have accepted by the Tribal Council.

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PART III  
SOCIAL STRUCTURE

An analysis of 1980 census data for tracts located within the boundaries of the Rio Salado project area, compared with estimates of socio-economic characteristics for the Phoenix metropolitan area obtained through a consumer survey in 1981, has revealed several interesting conditions. The Rio Salado planning area has a younger population, greater concentration and percentage of non-white residents, a lower ratio of homeownership, and lower rents and home values than metropolitan area averages. Data on income levels has not yet become available. Based upon all other indicators, however, it is reasonable to assume that individual and family incomes are also lower than the metropolitan average.

Residents of Rio Salado have a median age of 23.8 versus 29.9 regionally. In outlying Avondale and the unincorporated areas, the median ages are 35 and 31 respectively. On the other hand, Tempe has an extremely young population with a median age of 22 due to the University. The percentage of children under 18 is 30%, normal for the region. The senior population over 65 years of age, however, represents a smaller percentage than the metropolitan average (7% in the Rio Salado area versus 11% in the metropolitan area).

The Rio Salado project area has a much higher percentage of non-white individuals than does the metropolitan area. 81% of the region's residents are white, whereas 58% in the Development District are white. In the Phoenix sector this group is only 30%. The white population ranges from 72-100% in other jurisdictions, except for the Indian communities. The Hispanic population is 29% in the Rio Salado District, nearly twice the metropolitan average of 15%. This group is strongly represented in the Phoenix portion (33%), but is less than the metropolitan average in Tempe, Mesa, and Avondale. Blacks account for 10% of the Rio Salado population, whereas the metro total is 3%. In the Phoenix sector 19% of the population is black, but there are negligible numbers in all other jurisdictions. Indians are scarcely represented in any jurisdiction outside the Indian communities except for a 15% showing within the unincorporated area.

Housing statistics show that the Rio Salado has a higher than average percentage of renters. Twenty-two percent of the metro area units are renter occupied versus 38% in the project area. This percentage is highest in Tempe (90%). Rent levels are low in the project area. The median rent in the metro area is \$263; the median rent in the Rio Salado is \$180. Rents average \$150 in the Phoenix sector, compared to Mesa and Tempe's higher averages of \$275 and \$225 respectively. Rio Salado's lower rents suggest that project area renters may be limited in their ability to move to more expensive areas of the region, to pay higher rents resulting from an increase in property values, or to afford home ownership without significant subsidies. These statistics suggest that the present Rio Salado population is quite vulnerable to speculation, and will therefore be significantly impacted by rising land values in the District.

Following is an overview of the major sociological features of each jurisdiction:

Avondale: There are 42 white people living here divided into 14 households. Rent averages less than \$100 per month.

Unincorporated Areas: One-third of the households are small two-person families. Forty-five percent (45%) of the housing stock is mobile homes with low rents. Indians represent 17% of the population, possibly as a result of a housing shortage at the Gila River Indian Community.

Gila River Indian Community: District Seven of this community within the Rio Salado, has a population of 500. Unemployment is reported to be extremely high.

Phoenix: The population within the Phoenix portion of the Rio Salado District is 24,164. Thirty seven percent (37%) of the residents are under 18. Only 30% of this population is white, another 33% is Hispanic, and 19% is black. The homeownership rate is low for the region at 66%. The median value of homes is also low for the region at \$25,000. The median rent is \$150 and nearly all units have a rent under \$400. The fact that 16% of all households in this jurisdiction have 6 or more occupants suggests overcrowding. Females head up 31% of all households, a statistic that also implies strained socio-economic conditions.

The 1980 Village Planning Handbook and the Inner City Area Plan provide even greater insight into the difficult conditions of some Phoenix Rio Salado residents showing that less than 64% of households have at least one job holder. This area has been designated as having high and persistent unemployment at 8.6%, versus 3 - 4% in most other areas of the City. Although the profile below of the inner city of Phoenix north of the river to Buckeye Road is based on 1970 census, conditions have not changed significantly.

<u>Characteristic</u>	<u>City-wide</u>	<u>R.S. Inner City</u>
Population under 18	25.7	40%
Female heads of households with children under 18	7%	15%
Median Income	\$9,952	\$5,786
Receiving public assistance	4%	17%
High school graduates	59%	17%
Overcrowded households	9%	27%
Unemployed Males	6.5%	9.7%

Tempe: 9,542 individuals populate this sector of the project area. College students seem to dominate, resulting in a median age of 22. There are few children (14%) and few senior citizens (4%). The children tend to be pre-school age, probably families of graduate students and faculty. The great majority of the population is white (89%). The homeownership rate is the lowest of all jurisdictions at 30%, a result of a market which serves students. Most non-whites in these boundaries are homeowners, perhaps reflecting the minority middle class that has migrated to this suburban setting.

Mesa: This area is heavily white (89%) with some Hispanics and only 112 blacks. The median age is 25, with a strong representation of retirees (13% over 54 years of age). Twenty-one percent (21%) of the households live in mobile homes. As in Tempe, all non-whites are homeowners. There are many homes which are valued at amounts greater than \$100,000 with 26 valued at more than \$200,000.

Salt River Pima-Maricopa Indian Community: There are some 3,500 residents in this entire community. Only about 1,200 live within the project boundaries. Eleven percent (11%) or 400 persons are Hispanic. Only 7% of this community is over 65 years of age.

TABLE 2: RESIDENTS' SOCIAL CHARACTERISTICS  
 WITHIN THE RIO SALADO PROJECT AREA

	Metro Area	County	Phoenix	Mesa	Tempe	Avondale	Salt River P.-M. Indian Community	Gila River Indian Community	Rio Salado Area Total
1. <u>Population</u>	1,592,000	6,321	24,164	10,711	9,452	42	1,200 est.	500 est.	50,350
2. <u>Race:</u>									
a. White	81%	72%	30%	89%	89%	100%	-	-	58%
b. Hisp.	15%	13%	33%	10%	7%	-	11%	-	29%
c. Indian	1%	15%	1%	<1%	<1%	-	89%	100%	3%
d. Black	3%	-	19%	1%	2%	-	-	-	10%
e. Others (Asian, etc.)	1%	-	17%	1%	2%	-	-	-	<1%
3. <u>Age:</u>									
a. Median Age	29.9 yrs.	31 yrs.	23 yrs.	25 yrs.	22 yrs.	35 yrs.	N.I.	N.I.	23.8 yrs.
b. Under 18	33%	30%	37%	32%	14%	50%	N.I.	N.I.	30%
c. 18-64	46%	58%	53%	61%	82%	43%	N.I.	N.I.	63%
d. 65 and over	11%	12%	10%	7%	4%	7%	N.I.	N.I.	7%
4. <u>Female Heads of Households with Children Under 18</u>	N.I.	5%	12%	6%	8%	N.I.	N.I.	N.I.	9%
5. <u>Housing:</u>									
a. Homeownership	78%	82%	66%	72%	30%	57%	N.I.	N.I.	62%
b. Renters	22%	18%	34%	28%	70%	43%	N.I.	N.I.	38%
c. Trailers	27%	45%	11%	21%	14%	21%	N.I.	N.I.	18%
d. Median Value of Houses	\$63,943	\$65,000	\$25,000	\$65,000	\$45,000	\$35,000	N.I.	N.I.	\$35,000
e. Median Rent	\$ 263	\$ 200	\$ 150	\$ 275	\$ 225	<\$ 100	N.I.	N.I.	\$ 180

NOTE: N.I.=No Information

The project area has a wide variety of low density housing. It is mostly single family with some apartments and many mobile homes, and it ranges widely in age, size, style and quality. Housing conditions tend to be worst along the Rio Salado or near industrial areas. According to the Housing Condition Survey conducted in 1980, one-third of all Phoenix housing units which were judged in good condition in 1972, had slipped to the substandard category by 1980.\* This report stated that the City would be faced with a housing crisis by the end of the decade if this trend continues. The study reveals that a significant portion of these substandard dwellings were found within the project boundaries. Thirty percent of the Phoenix land area within the project contained 95-100% of the substandard dwellings.

The predominant housing style in the Rio Salado District is a small, flat-roofed, single-family dwelling of vaguely Spanish origin, made of stuccoed concrete block, painted in a bright color. These houses are typically surrounded by dirt yards, adorned by an occasional shade tree, trellis, fence, arched gateway, or low concrete wall. Occasionally, terra cotta statues and raised pools can be sighted. Almost always there are large TV antennas, swamp coolers or air-conditioner boxes and cars. Frequently, several ancient relics linger in the front or backyards for spare parts or play, together with other discarded equipment.

The streets in these areas often become playgrounds for the area residents. Basketball hoops mounted on telephone poles and hop-scotch games drawn on the pavement attest to the inventiveness of children whose own yards are too restricted for group games. At night, adults and children gather in groups in the streets, seeking out the cool evening breezes.

Clearly established residential neighborhoods are numerous throughout the development district and within each of these areas, one will find a broad range of conditions and types. The city of Phoenix, for example, has targeted Neighborhood Strategy Area B in South Phoenix for intensive strengthening. A portion of this approximately 40-square-block area lies within the Rio Salado Development District. Within this residential area, planners of the Housing and Urban Redevelopment Department have identified fourteen (14) distinct sub-areas of different

\*When repairs required to bring a unit up to code compliance exceeds \$5,000.

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quality levels. Although the current homeownership rate is surprisingly high at 55%, this neighborhood will require a significant infusion of public and private investment to bring about stabilization.

For purposes of this evaluation residential areas will be characterized as follows:

- o Healthy (H): These neighborhoods show few signs of decay. Homes are generally well-maintained and public facilities are in relatively good condition and repair. In-fill development of vacant land and occasional buffers against incompatible uses are the extent of actions needed.
- o Declining (Dec.): A neighborhood is in generally good condition, although there are beginning signs of blight and deterioration. Public facilities, including roads and parks, may be in a poor state of repair. Burned-out, vacant buildings, population decline and lack of private investment generally characterize such areas. Assistance to these neighborhoods would include in-fill development, loans to owners for improvements, repair of public facilities, demolition of some structures, and buffering from incompatible uses.
- o Deteriorated (Det.): These neighborhoods have already experienced years of decline. Building maintenance is poor and much of the housing is renter occupied and in substandard conditions. Public facilities are generally in poor conditions or insufficient. Homes and businesses are vacant, and industrial use, junkyards and storage areas are growing. In order to reverse this trend, a major infusion of assistance would be required, although in some cases, the transition to industrial use may be appropriate if the remaining residents can be relocated to more attractive locations.
- o Destroyed (Des.): These areas have passed the point of residential rehabilitation and consist of vacant land, some industrial use, and some poor quality residential or commercial development. For those remaining low income residents, the best solution will be subsidized relocation. This will leave the area open to improved industrialization.

- o Forming (F): These generally rural areas are scattered with small residential pockets which will likely become the core of larger communities in the future. There will be a future need for public services in these areas.

Moving through the development district from west to east, the following residential areas have been identified and rated:

#### Avondale

1. 115th Avenue - west for several blocks, north of the river (F)  
Small pockets of houses and mobile homes forming along Southern Avenue. Housing is modest to middle income.

#### County

1. 115th Avenue - 100th Avenue along Southern Avenue, north of the river (F)  
Mostly trailer homes of moderate quality.
2. 60th Avenue - 67th Avenue along Baseline, south of the river (H)
3. 48th Avenue - 35th Avenue, south of the river (H)  
There is a medium-sized trailer community at 40th and Southern Avenue.

#### Gila River Indian Community, south of the river

1. One small residential area and scattered low income housing characterize the Indian community.

#### Phoenix

1. 23rd Avenue-16th Avenue, south of the river (H)  
There is a trailer park at Broadway Road and 29th Avenue.
2. 16th Avenue - 16th Street, south of the river (Dec. - Det.)  
A wide range of housing types and conditions and increasing industrial use. There are several small trailer parks scattered between 7th Avenue and 7th Street.

3. 9th Avenue - Central Avenue, north of the river (Det.)  
Mostly modest housing with mobile homes mixed in. The area is suffering from the encroachment of industrial use. There are two dense public housing complexes in fair condition.
4. 7th Street - 20th Street, north of the river (Det.)  
Mostly low income, modest housing, some mobile homes, suffering from increasing industrial use.
5. 16th Street - 32nd Street, south of the river (Dec.)  
Low income homes, but in reasonably good condition. In need of strengthening and protection from industrial use.
6. 32nd Street - 48th Street, south of the river (Des.)  
Only scattered houses are left in this area, now characterized by industrial use, storage, and vacant parcels.

#### Tempe

1. Priest Drive and University Avenue south of the river (H)
2. University and Mill, south of the river (Dec. - Det.)  
This residential area is mixed with industrial usage.
3. Scottsdale Road, north of the river (Dec.)  
This modest area is mixed with industrial use and undesirable adult commercial establishments.

#### Mesa

1. Alma School Road - Mesa Drive, south of the river (H)  
This stable area also has middle income mobile home communities along McKellips.
2. East Mesa, south of the river (H)  
This low density area has middle to upper income homes mixed in with orange groves.

### Salt River Pima-Maricopa Indian Community

Only one modest mobile home community and scattered low income houses lie within the project boundaries. Newer single-family homes within the Indian community are northwest of the project area.

These conditions correlate with the statistics related to median housing values, rent levels, and ownership status in a previous section of this report.

Overall, there is a severe problem of the slow deterioration and undermining of residential areas in favor of non-residential usage. This is particularly true within the City of Phoenix. This trend was documented in a study of multi-family housing in Phoenix. It showed that most rezoning cases within the project boundaries in recent years have been to remove land zoned for housing use to non-residential uses.

This study also highlighted another problem - the inadequate supply of multi-family units. The Planning Department has recommended that "every conceivable effort be made to encourage high density development (in Village 8)." Further, they pointed out that "development of the Rio Salado project may be necessary to facilitate substantial multi-family development (in Village 9)." The City's policy of encouraging the creation of multi-family housing stock and the sheer availability of land in the project area may represent positive opportunities for the Rio Salado District.

Opportunities also exist to strengthen several residential areas, to create improved living conditions for many Rio Salado residents, and to bring about a better usage of land. Some of these opportunities come about as a result of new trends in the housing market. The favorable climate and characteristically simple construction have helped maintain the cost of new construction and rehabilitation at a relatively low figure in the Phoenix area. New houses in South Phoenix are being offered for \$40,000 and rehabilitation costs average \$15,000 - \$20,000 per unit. Efforts on the part of the City's Planning Department to streamline approval procedures should help lower construction costs further. The City's Housing and Urban Redevelopment Department is also encouraging higher density cluster developments which offer cost savings per unit.

Local private builders such as Black Cloud Construction Co. and Romeros Realty should be looked to for their experience in building moderate income housing. Tiempo Real Estate Development, an off-shoot of Chicanos Por La Causa, represents a potential new financial resource for lower income housing development.

A full set of programs and mechanisms designed to stimulate housing construction and rehabilitation in Phoenix represent key resources in achieving the goals of the Rio Salado. Some are available city-wide, some are currently restricted to target areas. All of them will require additional funding in the future if an impact is to occur within this project area. The experience of these programs, however, is definitely an asset. They are as follows:

1. HUD Section 312 Loans provides 3% loans for the improvement of single family and multi-family residences and commercial properties. These funds are also available to Urban Homestead area homeowners.
2. BMIR Loans provides 3% - 11% rehab loans to qualified owner-occupants of homes in the Target Area. They are processed through local lending institutions with the City-subsidized interest rates.
3. Deferred Loans allow eligible single family owner-occupants to apply for rehab funds with no payback interest. The loan is forgiven after ten (10) years of continuous occupancy.
4. Home Emergency Loan Program (HELP). Under this program, repairs to homes to correct emergency or critical maintenance problems may be made without bringing homes up to code standard. In order to qualify, a home must be determined to be too costly to rehabilitate or be located in a sub-area designated for HELP assistance.
5. Emergency Home Repair Program. Under this program City staff may make emergency improvements up to \$800.00 to substandard homes where owners qualify as low income in accordance with Federal guidelines.
6. Urban Homestead. The Urban homestead project provides for purchase of HUD repossessed dwellings, resale to qualified owners, and rehabilitation financing.

7. Neighborhood Assistance Program. Under this program the City may provide public improvements including landscaping along major roads at entrances to neighborhoods and at various key locations within neighborhoods to improve appearance and pride in the area. The City may also provide technical and financial assistance to homeowners of property in standard condition who want to paint, landscape or otherwise improve the appearance of their homes or screen outdoor storage areas.
8. New Development Incentive Program. Through this program, incentives may be provided to developers to expedite the development of vacant land in the Target Area. Incentives may include the provision of public improvements, aid in land assembly and clearance, and help in securing financing.
9. Operation Paintbrush provides funds to reimburse property owners in Target Areas for paint and other materials used to improve home and building exteriors.
10. Major Home Repair Program. The Citywide program provides repairs to low and moderate income homeowners. The repairs correct major deficiencies and eliminate conditions threatening the health and safety of homeowners.
11. Weatherization Home Repair Program. This fund supplements home weatherization repairs beyond the \$100 limit imposed on the use of the Department of Energy funds for this program. The program reduces cooling and heating costs of low income homeowners.
12. Neighborhood Rehabilitation Loan Pool. Continuation funding for loan pools providing financing tools for housing and commercial rehabilitation projects in Target Areas. Approximately 200 residential units will be addressed in 1982-83.
13. Fair Housing Counseling/CHIPS. Comprehensive housing counseling, mortgage default and delinquency counseling, counseling to participants in HUR housing assistance programs, and the provision information to the community on fair housing laws.

14. Section 8 Moderate Rehabilitation Loan Pool. Funds to provide interest buy downs on approximately 50 rehabilitation loans on investor-owned subsidized rental property leased to Section 8 certificate holders. The program is designed to upgrade and prevent further deterioration of substandard, but basically sound housing.
15. Project Shipshape. Funding for the home maintenance and repair program for the elderly in Target Area B.

Finally, some attention must be paid to the presence and future role of mobile homes in the project area. Eighteen percent of all households (2,925) within the project boundaries reside in mobile homes. This ratio is highest in the unincorporated area (45%) and in Mesa (21%). Although Mesa officials report that their trailer parks house middle income retired and seasonal people, statistics reveal that the income of retirees is nearly half the area median (\$12,872 vs. \$21,933) suggesting limitations in their ability to move. A visual observation of trailer parks in Phoenix and the County suggest that residents of mobile homes here are economically limited. These parks appear to be occupied by younger, lower income families, in keeping with the characteristics of mobile home dwellers nationwide.

The location and design of mobile home parks in the area present aesthetic problems. The Rio Salado development offers an opportunity to integrate this important low cost housing alternative into its overall design and development.

Social services delivery to the existing population varies from jurisdiction to jurisdiction as follows:

County: There are no social service facilities located within the project area.

Gila River Indian Community: There are no social service facilities located in District 7. The nearest health care is 10 miles southeast.

Phoenix: The City of Phoenix provides a wide range of social services and neighborhood health care to low income individuals. They are organized and administered through Neighborhood Councils and Human Resource Centers. They are relatively accessible to most current residents of the Rio Salado area. At least two are located within the project boundaries in Central Phoenix. Memorial Hospital is located north of the river on 7th Avenue.

Several private organizations and churches also provide social services.

The Urban League, located on 7th Avenue, provides job training, basic education, job placement, summer camp, and housing repair services.

Community Legal Services, Inc. is located on 16th St., and provides legal assistance to low income persons.

Friendly House, Inc., located on 1st Avenue, offers counseling, job placement, youth and senior citizens activities, and alcoholism programs.

Valle Del Sol is located on 1st Avenue and coordinates programs in improved education, employment, health, and drug treatment and rehabilitation.

Wesley Community Center is located on 10th Street. This Center specializes in youth and child development, community organizing, senior citizens activities, and cultural development.

Chicanos Por La Causa operates several facilities within and near the Rio Salado project area. Its services and programs include sports activities, elderly services and counseling, cultural development, educational development, nutrition and food distribution, health screening, parenting education, alcoholism services,

employment training and job placement, a credit union, and entrepreneurial development assistance.

A more extensive list of relevant social service resource groups in Phoenix is found in the appendix.

Based on this inventory, the inadequate availability of health care facilities may be an issue and constraint in attracting new residents to the District. Social services of all types are needed for the residents of North Mesa, the unincorporated County area, and the Gila River Indian Community.

Probably the most important cultural influences in the Valley are historical: the three heritage strands, Indian, Hispanic, and Pioneer American West. Art, architecture, events, and literature all reflect the strong influence and attraction of these cultural strands to present day residents. The iconography, materials, shapes, colors, textures, motifs, and artifacts of these cultures are visible everywhere in the Phoenix landscape. The design vocabulary of the area is largely drawn from the design expressions of these three cultures.

## Indian

The longest influence is that of the Indians. Because of findings at Ventana Cave, archaeologists believe that human beings resided in Arizona for a least 10,000 years. Archaeological finds of Indian culture in the Rio Salado project area date as early as 800 A.D. The Indian culture is varied, from the Basket Maker pre-historic cultures through the Great Pueblo Period of the Hohokam era to the remaining tribal cultures of today. Arizona has one of the largest Indian populations of any state. More than 16,000 are living in the Phoenix area according to the 1980 Census. The Indian Nations primarily represented appear to be the Pima, the Maricopa, the Navajo, the Apache, and the Papago.

The Indian culture is-and has always been-influential in this state. Many of the national monuments in the state are artifacts of Indian culture (such as Walnut Canyon, Tuzigoot, Montezuma Castle, Tonto, and Casa Grande). Three of the state's foremost museums feature Indian Culture: the Arizona State Museum in Tucson, the Museum of Northern Arizona in Flagstaff, and the Heard Museum in Flagstaff.

Indian influence is subtle but pervasive-especially in terms of arts and crafts. The iconography of the area borrows heavily from Indian motifs (for example, the new Phoenix airport). Indian art is widely appreciated and displayed. It is also easy to trace Indian influences in the building types, since many buildings seem to echo forms, shapes, and colors of the Indian pueblos-as well as Indian building materials. The canals that nourish the Salt River Valley were originally laid out by Indians.

## Hispanic

The credit for the first European visit is usually given to Fray Marcos the Niza, sent by the Viceroy of New Spain (Mexico). Coronado led an expedition to Arizona in 1540. Efforts of missionaries in the early 17th century were not overly successful, culminating in the Pueblo Revolt in 1680. However, by 1711, Father Eusebio Francisco Kuio had established a number of missions in southern Arizona. Mission San Xavier del Banc is still in use, near Tucson. Tumacacori's partially restored ruins are part of a national monument north of Nogales.

The area was part of Mexico until 1848. The Mexican-Spanish influence is readily apparent. Not only are a number of persons of Mexican descent, (the Chicano population of Phoenix is said to be 16%), the influence of Spanish motifs is visible everywhere in decorative detail, in architecture, and in lifestyle. Mexican cuisine is popular, as is Hispanic style "patio-living" (a fusing of indoor and outdoor space for private living), as is the guayabera, a man's dress shirt with short sleeves.

The Spanish were brilliant water engineers, a skill learned from the Moors. They make very small amounts of water seem endless through ingenious fountain and reflecting pool designs. The pervasive Spanish influence in architecture can be seen most notably in the Churches and missions of the region.

## Black American

(To be added)

## White American

The white American influence began with the first trappers, early settlers, cattle ranchers, and prospectors of the region. As the area became settled in the 1880's, the culture of the American West played an important part in shaping Arizona's cultural style. Arizona prides itself on its western heritage, reflected in its clothes, its interest in the outdoors, its sense of entrepreneuring independence.

Phoenix began as a place where hay was raised for the horses of Ft. McDowell. It was an unlikely place to become a large metropolitan area: it was not on a transcontinental railroad; it was oppressively hot; it had no water storage facilities for irrigation. It did have bold, imaginative and energetic leadership by persons like Dwight Heard who came from Chicago in 1895. These individuals successfully utilized the ancient Indian irrigation ditches and developed a system of canals and dams that led Phoenix to its prominent position. In 1889, the Territorial capital was moved from Prescott to Phoenix, and in 1912, Arizona became the 48th state.

By 1914, the Salt River project was a going concern with 240,000 acres of land under irrigation. The valley became a thriving agricultural enterprise, growing long staple cotton, sugar beets, oranges, melons, fruits of all kinds, and even boasting of ostrich farms.

Agriculture was the first important economic endeavor. After World War II, the five C's--cattle, cotton, copper and climate--were supplanted by manufacturing and tourism.

The rapid influx of new residents coming from the East and other areas of the U.S. since World War II has influenced the outdoor Western culture of the past. These newcomers have brought theater, classical music, Chinese food, and other diversities to the culture of the area.

## Existing Cultural Resources and Organizations

The following is a list of physical resources. These resources usually lie outside the project area. Those within or close to the project area are starred.

### Cultural Resources

- \*Arizona State Capitol Museum
- Arizona State Fairgrounds
- \*Celebrity Theater
- Center for Performing Arts
- \*Desert Botanical Gardens
- Heard Museum
- Maricopa County Fairgrounds
- Phoenix Art Museum
- \*Phoenix Civic Plaza
- Phoenix Historical Society Museum
- Phoenix Main Library
- \*Phoenix Municipal Stadium
- \*Phoenix Zoo
- Pioneer Arizona History Museum (north of city)
- \*Pueblo Grande Indian Ruins and Museum
- Rawhide Western Town
- \*Arizona History Room (First Interstate Bank Plaza)
- Arizona Museum
- Japanese Gardens
- Arizona Mineral Museum
- Royal London Wax Museum
- Veteran's Memorial Coliseum (1965)
- Scottsdale Center for the Arts
- Rosson House
- Talies in West
- Cosanti Foundation
- Central Arizona Museum of History
- \*Harmon Library
- Medical Museum, Phoenix Baptist Hospital
- The Galeria (Arizona Bank Building)
- House of the Future (ah wua tukee)
- Arizona Military Museum
- McDowell Exhibit Plaza, Indian Bend Wash

## Tempe

Grady Gammage Memorial Auditorium  
Community Cultural Center  
Escalante Community Service Center  
Plazita de Descanso  
University Art Collection  
Salt River Project Exhibit  
Gammage Center  
Tempe Historical Museum  
Kerr Cultural Center

## Mesa

Mesa Community Center  
Mesa Museum  
Champlin Fighter Museum  
The Museum for Youth

## Prominent cultural organizations in the Valley

Phoenix Symphony Orchestra  
Valley Shakespeare Theater, Inc.  
Arizona Ballet Theater  
University Dance Theater  
French Quarter Dinner Theater (Safari Hotel)  
Jed Nolen's Music Hall Dinner Theater  
(Scottsdale Mall)  
Windmill Dinner Theater  
The Heritage Foundation of Arizona  
Office of Cultural Resource Management, Arizona  
State University  
Pierre's Playhouse (Cave Creek), Stone Soup Players  
Jazz in AZ  
Classical Film Society  
Arizona Theater Company  
Open Stage II  
Scottsdale Community Players  
Scottsdale Center for the Arts  
The Sunshine Players (Glendale)  
Esoteric Speakers Platform  
Arizona Authors Association  
Phoenix Art Museum League  
Glendale Little Theater  
Arizona State University Theater

The Cookie Company Children's Theater  
City of Tempe Parks and Recreation Dept.  
City of Phoenix Parks and Recreation Dept.  
City of Mesa Parks and Recreation Dept.  
Metropolitan Youth Symphony  
League of Arizona Metropolitan Ballet  
Mesa Youth Center  
Lyric Opera Theater (ASU)  
Tempe Symphony Orchestra  
Tempe Little Theater  
Tempe Historical Society  
Phoenix Historical Society  
Pheonic Arts Coming Together, Inc (PACT)  
Arizona Humanities Council  
Arizonians for Cultural Development  
Helen Mason's Black Theater Troupe  
Artists in the Black Community in Arizona  
Arts Council of Phoenix  
Arizona Theater Company  
Actors Lab

Although this list implies a wealth of culture within the Phoenix area, there are indeed some problems which in turn provide the development of the Rio Salado opportunities for filling voids. First, this list of resources reveals minimal offerings of the cultures of the Hispanic, Indian, or Black population despite the importance of these groups to the history of this area. The rapid influx of people to the area suggest an attraction of the romantic aspects of the Indian, Hispanic and Old West heritage, but there is no direct grounding in these heritages.

The Phoenix Indian Center, for example, cites a lack of understanding between the Indian and non-Indian communities and has made the increase of cross cultural understanding one of its goals. Other than special arts programs from time to time sponsored by the Indian Center, and small exhibits of Indian artifacts in local museums, there are few opportunities to gain a full understanding of the Indian culture. Thirty-eight percent of Indians surveyed in Phoenix indicated a need for a cultural center. The Hispanic community is similarly without a substantial mechanism through which to educate others of its rich cultural heritage. Except for small programs sponsored periodically within area schools, there is little opportunity to find Chicano culture.

"Racism is still a significant factor in the lives of blacks in Phoenix. Discrimination and barriers are more subtle than they used to be...but it is still here," according to Brenda Smith, Deputy Director of the Governor's Office of Small Business. One factor that perpetuates racism is lack of contact and understanding of black culture by non-blacks. Despite the fact that 60,000 blacks reside in the metropolitan area, there is no standing African or Afro-American exhibit. Black student groups at local colleges sometimes offer art exhibits for 2 or 3 day durations, and one small black theater group struggles to stay alive in Phoenix. The local branch of the Opportunities Industrialization Center of America (O.I.C.) located in downtown Phoenix is currently working on a project to construct an addition to its career development facility which will include a gallery, exhibit area, and small theater.

The development of the Rio Salado offers an opportunity to bring about better cross-cultural understanding. A center or series of facilities could provide space within which various cultural groups, including that of the Pioneer West, would share their cultures.

Cultural resources are particularly lacking for the residents of South Phoenix. Given the low-density, neighborhood life is important in Phoenix. Many residents of South Phoenix have cited a need for space for carnivals, public meetings, and outdoor concerts and plays. Neighborhood cultural centers with an emphasis upon amateur participation in the arts might also be created within the Rio Salado District. One small amphitheater is planned for construction at 35th Baseline in Alvord Park. More are needed. A library facility for the residents of southwest Phoenix and the adjacent unincorporated areas is also needed.

The Rio Salado project will need local attractions to bring people from other parts of the community to this area and to bridge the gap between north and south in Phoenix and between the individual municipalities. Some residents indicate that people in the north, west and east of Phoenix are not interested in what happens in South Phoenix, Tempe or Mesa. People do not circulate much. For this project to succeed, there must be widely based community support. This will necessitate some strong, community-wide attractions. Some possibilities would include: a Children's Youth Science Center

being considered by the Junior League, Youth Art Museum being discussed in Mesa, and a small scale World's Fair.

It might also be wise to reevaluate the city's plan to construct a 15,000 amphitheater at the base of South Mountain. Residents are fearful of the negative impact that heavy traffic will have on their neighborhoods nearby. Locating such a facility within the Rio Salado project area could serve South Phoenix and attract residents from North Phoenix as well. Many of Phoenix's major cultural facilities are also seeking to relocate into new, larger buildings. There is talk of locating a cultural center area within downtown Phoenix. Some have also suggested that this cultural area be centered within the Rio Salado project boundaries. The final location of this regional attraction should be carefully studied.

Finally, although Indian and Mexican culture is currently evident in the architecture of Phoenix, development of the Rio Salado should take care to continue this tradition. Successful translation of this heritage into large-scale development might be a key design element and helpful in making the Rio Salado a place for all of the people.

The Phoenix area is divided into numerous public school districts which operate independently of one another. They are separately funded and each has its own school board and administrative structure. These school districts also have little relationship to jurisdictional boundaries. Thus, children in Tempe, for example, may be attending Scottsdale High School, Tempe Union, or Mesa High School, depending on which part of Tempe they live in.

Five high school districts and thirteen elementary school districts serve children in the Rio Salado Development District:

Aqua Fria Union High School District  
Avondale Elementary School District

Tolleson Union High School District  
Fowler Elementary School District  
Union Elementary School District  
Littleton Elementary School District

Phoenix Union High School District  
Phoenix Elementary School District  
Riverside Elementary School District  
Wilson Elementary School District  
Murphy Elementary School District  
Balsz Elementary School District  
Roosevelt Elementary School District  
Laveen Elementary School District

Tempe Union High School District  
Tempe Elementary School District

Mesa High School District  
Mesa Elementary School District

In addition to the public school system, there are numerous privately run schools and special schools operated by the Indian Communities. In Phoenix alone, there are 24 private elementary schools and 11 private high schools. The Salt River Pima-Maricopa Indian Community operates the Salt River Day School which currently serves approximately 200 students through grade six. Some children in District 7 of the Gila Indian Community attend the Indian school in District 6 within the Community. Others attend the Union Elementary School District. Some high school students from both Indian communities attend the Phoenix Indian High School.

There are some nine post-secondary schools which serve the Phoenix area. Among them is Arizona State University in Tempe, the 6th largest University in the Country with a student population of 39,000. The others include:

- Glendale Community College
- Scottsdale Community College
- Grand Canyon College
- American Graduate School of International Management (Glendale)
- Phoenix College
- Rio Salado Community College
- South Mountain Community College
- Maricopa Community College

Generally, there appears to be an adequate number of schools for current residents of the area, with the possible exception of the area south of the river west of 51st Street. This particular area has been experiencing an increase in residential use and students must travel a great distance to existing schools. Although the number of schools seems adequate, the quality of many of the public schools has been criticized. Academic requirements for graduation appear minimal. This may partially explain the presence of numerous private schools. This is also partly the reason why the majority of white children in South Phoenix attend private schools or public schools in North Phoenix. Mesa schools seem to enjoy the greatest confidence amongst those interviewed.

According to 1970 Census data within the Inner City Plan, adult residents living within the project boundaries just north of the river have completed an average of only eight years of school, well below the 12.3 average of the City as a whole. In addition, a needs assessment survey conducted by the Phoenix Indian Center revealed recently that 32% of Phoenix's adult Indian population is in need of basic education. The inadequate educational attainment of some of the current Rio Salado residents, has serious implications on their ability to participate in future development or employment opportunities within the project area. The quality of schools will also affect the willingness of families with children to live within the project boundaries.

The Rio Salado project may offer a unique opportunity to create outstanding new educational facilities that will draw students from all parts of the City, similar to the Skyline High School in Dallas and Magnet schools in other cities. A bold educational concept and facility will have great appeal.

The non-white population of the area is also concerned about the dearth of courses which concentrate on the history and culture of the various minority groups in the area. This oversight deprives minority groups of taking pride in the contribution of their culture to the overall fabric of American life and perpetuates the lack of understanding between minorities and the white population. The Rio Salado schools should consider this important issue as an opportunity to expand and broaden their curricula.

Finally, the area currently lacks a high technology post secondary educational facility similar to Lowell Tech in Massachusetts. The availability of such institutions is important to high tech firms' decisions to locate in an area. The administration of A.S.U. is discussing expanding its engineering division to fill this void. It may be possible to situate this school within the Rio Salado Development District.

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PART IV  
ECONOMIC PROJECTIONS

The Arizona Department of Economic Security (DES) is the official population projecting and estimating agency for the State of Arizona, and has projected population and employment for Arizona Counties to the year 2035. The DES County population projections are employment driven. A detailed report on the methodologies used by DES to make both the employment and population projections for Maricopa County is shown in Appendix A.

The Maricopa Association of Governments Transportation and Planning Office (MAGTPO) allocates DES population projections to municipal planning districts within Maricopa County, as shown in the map in Appendix A. These allocations are then reviewed and adjusted by the municipalities within Maricopa County. Final allocations to municipal planning districts must be approved by the Maricopa Association of Governments (MAG). However, each municipality has a great deal of input into the allocation of these projections within the county, based on their projections of land availability, employment, and population.

The most recent population projections by municipal planning district were adopted by the Maricopa Association of Governments on July 21, 1982 and are shown in Appendix A. In addition to population, MAG has projected acres of residential development, population per dwelling unit, and number of dwelling units by municipal planning district. These, too, are shown in Appendix A. ERA has reviewed these regional projections and feels that they have been thoroughly researched and prepared. A summary of the projected Maricopa County population trends is shown in the text table below.

Projections of Maricopa County  
Population, Dwelling Units, and  
Acres of Residential Development

	<u>1980</u>	<u>1990</u>	<u>2005</u>	<u>2035</u>
Population	1,508,030	2,033,200	2,945,900	4,812,883
Dwelling Units	597,497	805,480	1,148,889	1,915,368
Acres of Residential Development	169,229	207,304	274,256	452,205
Population per Dwelling Unit	2.457	2.458	2.495	2.458
Dwelling Units per Acre	3.531	3.886	4.189	4.236

Source: Maricopa County Association of Governments  
Transportation Planning Office.

As seen above, the population of Maricopa County is expected to almost double by the year 2005 and to triple by the year 2035. The projected increase from 1.5 million in 1980 to 2.9 million in 2005 represents an average annual growth rate of 3.8 percent. The increase from 2.9 million in 2005 to 4.8 million in 2035 represents an annual average growth rate of 2.1 percent. The average number of dwelling units per acre is expected to increase from 3.5 in 1980 to 4.2 in 2005 and 2035. The Department of Employment Security has projected Maricopa County employment, by category, to the year 2005, as seen in Table 3. Total employment is projected to increase by 99.4 percent from 1980 to 2005, at an average annual rate of 4.0 percent.

Employment categories, ranked according to the projected increase in the numbers of jobs, are shown in the text table below. The greatest increases will occur in manufacturing, trade, and services.

Table 3

Employment Projections  
Metropolitan Phoenix  
1980-2005

	<u>1980</u>	<u>1990</u>	<u>2005</u>	<u>Absolute Increase 1980-2005</u>	<u>Percent Increase 1980-2005</u>
Agriculture					
Proprietors	2,654	2,400	2,064	(590)	(22.2%)
Labor	6,232	5,092	3,761	(2,471)	(39.7%)
Mining	346	1,200	2,696	2,350	679.2%
Construction	55,201	65,342	88,168	32,967	59.7%
Manufacturing	111,503	177,046	298,874	187,371	168.0%
T.C.P.U. <sup>1/</sup>	30,082	38,949	57,920	27,838	92.5%
Wholesale/ Retail Trade	162,196	213,816	300,471	138,275	85.3%
F.I.R.E. <sup>2/</sup>	45,184	55,684	75,183	29,999	66.4%
Services	133,905	172,272	242,229	108,324	80.9%
Government	111,618	145,109	208,069	96,451	86.4%
Other	50,919	80,611	135,855	84,936	166.8%
Total	709,841	957,522	1,415,285	705,444	99.4%

<sup>1/</sup> Transportation, communications, public utilities.

<sup>2/</sup> Finance, insurance, and real estate.

Source: Arizona Department of Employment Services.

Table 6

Major Regional Shopping Centers  
Phoenix Metropolitan Area

<u>Name</u>	<u>Location</u>	<u>Year Completed</u>	<u>Square Footage</u>
1. Metrocenter	Black Canyon Freeway & Peoria	1973	1,600,000
2. Valley West Mall	59th Avenue & Northern	1973	600,000
3. Maryvale Mall	Indian School Rd. & 51st Avenue	1960, 65, 79	503,400
4. Westridge Mall	75th Avenue & Thomas Road	1981	800,000
5. Chris-Town Shopping Center	Bethany Home Rd. & 19th Avenue	1961, 73, 77	1,250,000
6. Park Central Shopping Center	Central Avenue & Earl	1957	762,000
7. The Colonnade	Camelback Rd. & 29th Street	1963, 77, 79	721,000
8. Biltmore Fashion Park	Camelback Rd. & 24th Street	1963, 79	330,884
9. Tower Plaza	Thomas Rd. & 36th Street	1960, 67	575,000
10. Thomas Mall	Thomas Rd. & 44th Street	1963	698,000
11. Paradise Valley Mall	Cactus Rd. & Tatum Blvd.	1979	697,668
12. Camelview Plaza	Camelback Rd. & 70th Street	1974, 77	374,108
13. Scottsdale Fashion Square	Camelback Rd. & Scottsdale Rd.	1959, 62, 74	332,000
14. Los Arcos Mall	McDowell Rd. & Scottsdale Rd.	1969	643,000
15. Tri-City Mall	Main Street & North Dobson	1968	600,000
16. Fiesta Mall	Southern Avenue & Alma School Rd.	1977	1,068,963

Note: Includes malls containing 300,000 square feet or more.

Source: Coldwell Banker Commercial Real Estate Services, Phoenix, Arizona.

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Projected Employment Growth  
Maricopa County  
1980-2005

<u>Category</u>	<u>Number of New Jobs</u>	<u>Rank</u>
Manufacturing	187,371	1
Trade	138,275	2
Services	108,275	3
Government	96,451	4
Other	84,936	5
Construction	32,967	6
F.I.R.E.	29,999	7
T.C.P.U.	27,838	8
Mining	2,350	9
Agriculture	(3,061)	10
TOTAL	705,444	--

Existing data has been compiled on projected growth in population, dwelling units and employment within the Rio Salado Development District for the cities of Phoenix, Mesa, and Tempe. Projections of population and employment were prepared by the Planning Departments of these cities for planning areas in zones which fall within the District, and reflect their knowledge of current population, land use trends and zoning within these areas.

Phoenix: The Phoenix Planning Department has projected the socio-economic profiles of traffic analysis zones (TAZ) throughout the city, including projections of population, dwelling units, employment and land use. ERA has compiled data on the 43 traffic analysis zones which fall within the Rio Salado Development District boundaries in Phoenix (shown in Table 1 in Appendix B). The relevant traffic analysis zones lie within three "villages" and one "area" as defined in the Concept Plan 2000. A map of these TAZ's is shown in Figure 1.

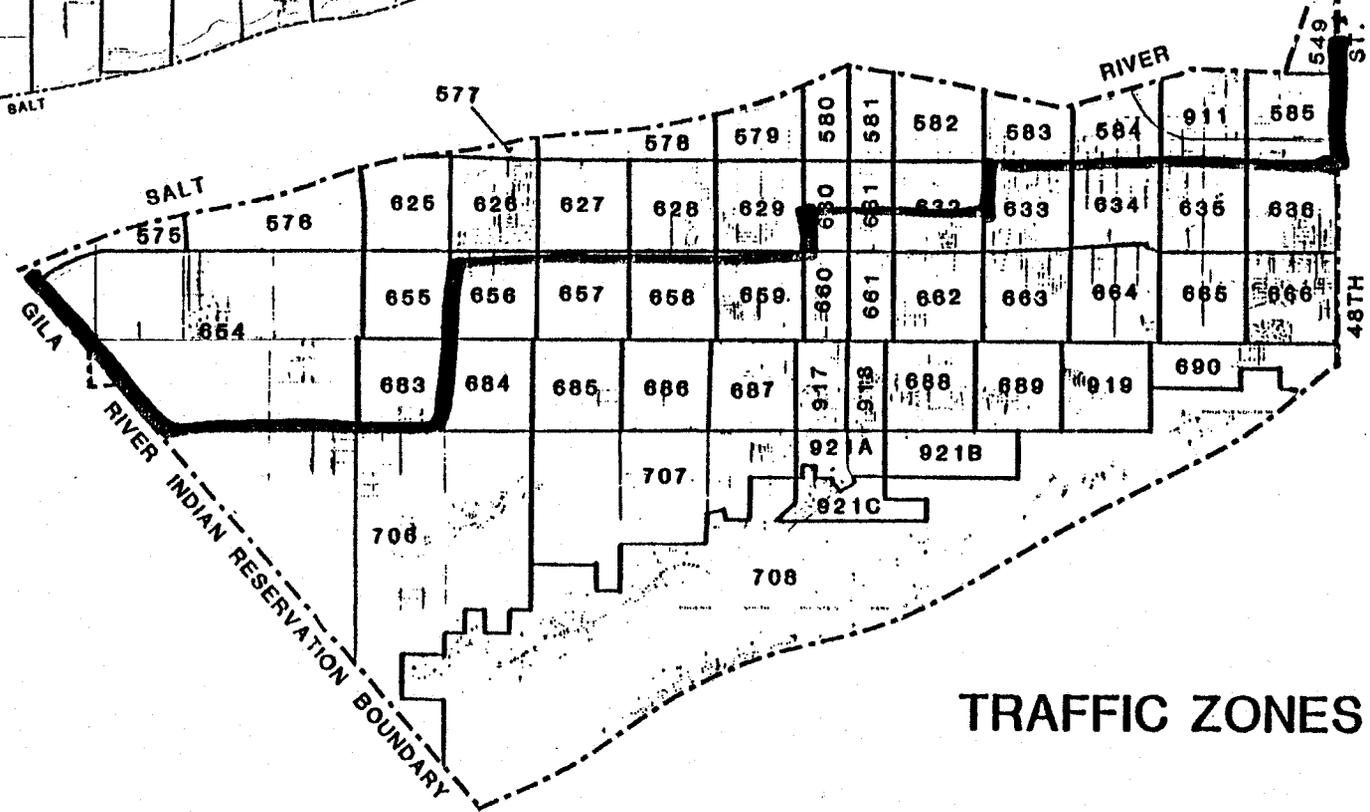
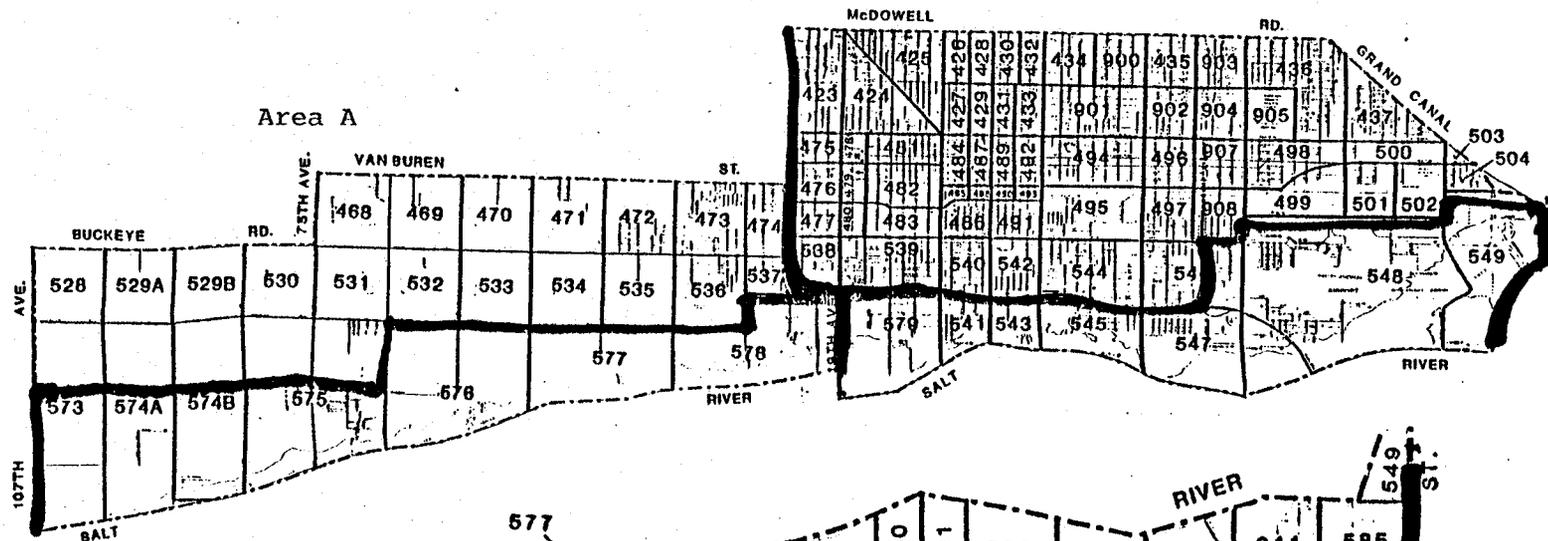
In making their projections, the City Planning Department assumed that 1) there would be a reduction of the flood plain through upstream flood controls by 1995 limiting maximum flow to 50,000 c.f.s, and 2) the Rio Salado project would occur in some form. Thus, the TAZ projections have taken into account an increase in developable land.

In making their projections, the Planning Department took into account the following factors and policies:

- o The Concept 2000 Plan, adopted by the City Council in 1979, designates Area A for industrial use. The City plans to convert this agricultural area into an industrial area on a phased basis to ensure suitable employment sites in Phoenix over the next 30 to 40 years. Because of this policy, most of the TAZ's within Area A will experience a decline in resident population and an increase in employment. Population is projected to increase only in TAZ 575 and 576, for an overall Area A population increase of 900 between 1980 and 2005. Employment is projected to increase by 8,200 or 273 percent. The residential development projected is low density, at 5 units per acre.
- o Most of the TAZ's in Village 8 which are within the District are in high noise level zones, restricting potentials for residential development.

Figure 1

Village 8



Village 9

TRAFFIC ZONES

- o Village 9 TAZ's are seen as having the greatest potential for resident development. The density of development projected ranges from 1.1 dwelling units per acre in TAZ 654 to the west, to 16 dwelling units per acre in TAZ 580 on Central Avenue and the Salt River. These density figures are conservative and could be higher in some areas.

By comparison, along Indian Bend Wash in Scottsdale, approximately two-thirds of new residential developments are townhouses and most of the remainder are apartments, with densities as follows:

Townhouses: 6-8 units per acre  
 Apartments: 22 units per acre  
 Overall density: 12 units per acre

Portions of Rio Salado can be expected to be more intensely developed than Indian Bend Wash, which is located in an essentially "suburban" area. In a recent analysis of the economic impact of Rio Salado Development projects under Plan Six, residential densities in some lakefront areas were projected at 29 dwelling units per acre. This type of density could be realized in some of the core areas of the District which take maximum advantage of the presence of water bodies.

Projections for the Phoenix portion of Rio Salado are shown in the text table below.

Projections of Growth in Phoenix Portion  
 of Rio Salado Development District  
 1981-2005

	<u>1980</u>	<u>1990</u>	<u>2005</u>
Population	31,500	32,400	55,000
Employment	36,000	51,500	77,900
Dwelling Units	9,900	11,800	23,700
Residential Acres	3,100	3,600	6,100

Mesa: Growth in population, employment, and dwelling units has been projected by the Mesa Planning Department for Mesa Planning Districts and Zones within the Rio Salado Development District. These projections assume that there is upstream flood control by 1990 and that Rio Salado will occur. This data, by district and zone, is shown in Table 2 in Appendix B. From 1980 to 2005 population is projected to increase by 115 percent and employment by 780 percent. New employment includes 12,000 employees projected to be working at the Hughes Helicopter plant. From 1990 to 2005, which correlates more closely with Rio Salado, population is expected to increase by 4.3 percent per year and employment 5.3 percent per year. The projected Maricopa County growth rates for the same time period are 3.5 percent and 3.8 percent respectively.

The Mesa Land Use Plan for 2000 shows areas bordering Rio Salado as primarily industrial, with sand and gravel operations dominating the area. Once depleted (or removed), there will be potentials for other types development there.

Summary of Socio-Economic Projections  
for Rio Salado Development District  
in Mesa

	<u>1980</u>	<u>1990</u>	<u>2005</u>
Population	13,400	17,500	28,800
Employment	2,300	11,300	20,300
Dwelling Units	5,600	5,900	11,400

Tempe: Projections prepared by the Tempe Planning Department for planning "sections" in Tempe within the Rio Salado Development District are for "saturation", which is expected to occur between 1990 and 1995.<sup>1/</sup> Employment projections are not available by section.

<sup>1/</sup> Projections by section are found in the Tempe '81 Statistical Report and Land Use Inventory '82.

These projections were made based on flood control through channelization, not upstream flood control. The Tempe Planning Department feels that a small amount of additional population growth would occur above the saturation figures if upstream flood control were achieved. The City of Tempe has adopted a Rio Salado Plan which defines the City's goals and objectives for their portion of Rio Salado and which conceptualizes a land use plan for a moderate water development.

Current residential density in the District in Tempe is 13 dwelling units per acre and 2.2 persons per dwelling unit. Airport noise is a factor in reducing the residential development potential in Tempe.

	<u>1980</u>	<u>1990<sup>1/</sup></u>	<u>2005<sup>2/</sup></u>
Population	13,637	16,300	23,000
Dwelling Units	4,859	5,800	9,600

1/ Saturation.

2/ ERA estimate based on undeveloped residential acres.

**Summary** The data in Table 4 combines the population, employment, and land use projections for Phoenix, Mesa, and Tempe. These totals represent the growth potentials for the District, as seen by persons knowledgeable about the three largest municipalities within the District. A summary of these projections is shown in the text table below.

Projected Growth in Population and Employment  
in the Rio Salado Development District<sup>1/</sup>

	Absolute Increase		% of Maricopa County	
	<u>1981-1990</u>	<u>1991-2005</u>	<u>1981-1990</u>	<u>1991-2005</u>
Population	7,400	41,900	1.4%	4.6%
Employment	29,100	34,800	11.7%	7.6%
Dwelling Units	3,500	22,300	1.7%	6.5%
Residential Acres <sup>2/</sup>	300-400	1,900-2,800	0.1%	2.8-4.1%

1/ Minimum level expected. Phoenix, Tempe and Mesa only.

2/ ERA estimate based on 8 to 12 dwelling units per acre.

Table 4

Projected Population, Employment, and Dwelling Units  
Rio Salado Development District  
1981-2005

	Population			Dwelling Units			Employment		
	1980	1990	2005	1980	1990	2005	1980	1990	2005
Phoenix	31,449	32,411	55,981	9,880	11,768	23,712	35,998	51,521	77,886
Mesa	13,387	17,500	28,829	5,623	5,900	11,355	2,300	11,300 <sup>1/</sup>	20,268
Tempe	13,637	16,000	23,000	6,314	7,620	9,050	NA	NA	NA
Total	58,473	65,911	107,816	21,817	25,288	44,117	33,698	62,821	97,618
Absolute Change from prior period	--	7,438	41,905	--	3,471	22,300	--	29,123	34,797
Percent Change	--	+12.7%	+63.6%	--	+15.9%	+102%	--	+86.4%	+55.4%
Average annual percent change	--	+ 1.3	4.2%	--	1.3%	4.1%	--	8.6%	3.7%

<sup>1/</sup> Includes 8,000 new employees at Hughes Helicopter plant in Mesa.

NA: Information not available.

Source: Tempe '81 Statistical Report, Mesa Planning Department data, Phoenix Planning Department Data and Economics Research Associates.

As seen below, these projections reflect slightly higher growth rates than is projected for Maricopa County as a whole. However, once underway, the Rio Salado growth rate should be considerably higher than that of the County as a whole, because there is such a small existing base of employment and population, and because Rio Salado should become one of the more attractive development areas in the region.

Projected Annual Growth Rates  
1990-2005

	<u>Maricopa County</u>	<u>Rio Salado Baseline Condition</u>
Population	2.9%	4.2%
Employment	3.2%	3.7%

These are preliminary demand figures, intended to give an idea of the magnitude of the project relative to regional growth trends. The Rio Salado planning process itself could alter the potentials for growth, through such action as limiting densities for development in certain areas, restricting industrial development in some areas, or encouraging more residential development. The ultimate level of water use in the Rio Salado will also affect growth patterns and potentials.

Other methods of projecting the potential for population and employment growth within the District include projecting a likely "capture" rate of regional growth. Depending on a variety of physical planning issues, the capture of regional population growth from 1990 to 2005 could be somewhat higher than the 4.6 percent indicated here, probably in the range of 5 to 10 percent. The projections presented here, which represent the opinions of each jurisdiction, are a good starting point and benchmark for further study.

An analysis of the impact of Rio Salado on overall regional growth is also underway, including analysis of the impacts of major public works investments on regional growth in San Diego (Mission Valley and Mission Bay), San Antonio (Riverwalk);

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Dallas (Dallas Town Lake project) and San Francisco (BART System). A project of the scale of Rio Salado has to have some impact on overall regional growth, by making the Phoenix area more attractive to industry and to potential residents. The question is not "will there be an impact," but "how large will the impact be?" Initial findings indicate that, on a percentage basis, increases in regional growth from major public works projects are real but very modest.

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Among the most likely uses to be developed in Rio Salado are residential, light industrial, office, retail, hotel, and recreational. This section presents an analysis of the regional market characteristics and future demand for light industrial, office, retail, and hotel space, which represent the major new employment generators within Rio Salado. The demand for recreational uses will be addressed separately in a later phase of work.

**Industrial** As of the end of 1981, there were approximately 63,000,000 square feet of industrial building space in metropolitan Phoenix, including 5,000,000 square feet of vacant space. Absorption of industrial building space in metropolitan Phoenix over the past three years was as follows:

Industrial Space Absorption  
(Square Feet)

1979	3,925,000
1980	3,600,000
1981	3,800,000
Annual Average	3,775,000

Source: Coldwell Banker.

The greatest concentration of industrial space is in Southwest Phoenix, (including the area west of the airport to

Avondale) which accounts for 30 percent of total industrial space in the metropolitan area. The airport area of Phoenix accounts for 18 percent of space and Tempe 13 percent of space. While the southwest Phoenix and Airport areas combined represent 58 percent of the industrial space concentration in the region, Mesa and Chandler are expected to capture an increasing share of the metropolitan industrial space market.

Industrial Space Concentration  
Phoenix Metropolitan Area  
1982

<u>Area</u>	<u>Percent of Space</u>
Phoenix	
Airport Area (Villages 8, 9)	28%
Northwest (Villages, 1, 3, 4)	11%
Central East (Villages 7, 5, 2)	0.2%
Southwest (Villages A, 6, 7, Avondale, Tolleson)	30%
Tempe	13%
Mesa/Chandler	7%
Glendale/Sun City	7%
Scottsdale	2%

Source: Coldwell Banker.

The primary types of tenants occupying industrial space in the region are as follows:

Manufacturing	58%
Wholesalers	25%
Transportation and Utilities	9%
Other	8%

The most likely type of industrial space to occur within the Rio Salado Development District will be for light industry. The regional demand for new light industrial space is shown below, based on projected employment increases in sectors using such space.

Projected Light Industrial Employee Increase  
Metropolitan Phoenix  
1981-2005

<u>Category</u>	<u>Projected Sector Employment Increase <sup>1/</sup></u>	<u>Percent Using Light Industrial Space</u>	<u>Light Industrial Employment Increase</u>
Manufacturing	187,371	75%	140,500
Trade	138,275	25%	24,600
Services	108,324	5%	5,400
Total	--	--	180,500

<sup>1/</sup> Arizona Department of Employment Security projections.  
Source: As noted above and Economics Research Associates.

Based on the above employment projections, acreage requirements for light industrial space are as follows:

New Light Industrial Acreage Requirement  
Metropolitan Phoenix  
1981-2005

Projected Light Industrial Employment <sup>1/</sup>	180,500
Average Employees per Industrial Acre <sup>2/</sup>	30
Resultant Acreage Requirement	6,000
Average Annual Acreage Requirement	240

<sup>1/</sup> From previous table.

<sup>2/</sup> ERA estimate based on Industrial Development Handbook, Urban Land Institute and ERA experience.

Source: Economics Research Associates.

## Office

The total metropolitan Phoenix office base (in buildings in excess of 10,000 square feet) at the end of 1981 was 16.5 million square feet. Metropolitan Phoenix has six major submarkets: the largest submarket is the midtown area, followed by northeast Phoenix, Downtown Phoenix, and Scottsdale, Tempe and Mesa.

The overall vacancy rate in the metropolitan area is 20 percent, with the highest vacancy rate (40 percent) being experienced in Mesa/Chandler.

### Office Space Concentration

<u>Area</u>	<u>Percent of Space</u>	<u>Vacancy Rate<sup>1/</sup></u>
Phoenix		
Midtown (Central Corridor)	37%	16%
Downtown	14%	6%
Northeast (Villages 2,5)	18%	26%
Northwest (Villages 1,3,4)	8%	34%
Airport Area	3%	8%
Scottsdale	10%	21%
Tempe	6%	21%
Mesa/Chandler	3%	40%
Glendale/Sun City	0.5%	7%

<sup>1/</sup> Vacancy rate in existing buildings only.  
Source: Coldwell Banker.

While Camelback corridor has recently been the "hottest" office market in the Valley, the availability of land for office development on east Camelback is rapidly being depleted and should be exhausted within the next five - ten years.

The downtown and mid-town office markets encompass the "Central Corridor," including properties between 7th Avenue and 7th Street and extending from downtown north to the Arizona Canal. This area contains nearly all of the high-rise office buildings in the metropolitan area. The City of Phoenix is committed to encouraging office development in the Downtown, and would not like to see another competing office center developed within the Rio Salado Development District.

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Annual Office Space Absorption  
(square feet)

1979	1,900,000
1980	1,300,000
1981	1,800,000
Average Annual	1,500,000

Source: Coldwell Banker.

The future regional demand for office space is projected through analysis of anticipated increases in key-sector employment and of replacement demand.

The projected growth among the office-using employment sectors is shown in Table 5. The second column in the table indicates the approximate percentage of employees within each category typically located in commercial office structures.

As shown, 80 percent of the Finance, Insurance and Real Estate categories are typically located in commercial office buildings, while 25 percent of the Services categories are so located. The other categories are less intensive users of office space, ranging from 3 to 6 percent. Using these factors results in the projected increase in office using employment shown in the last column in Table 2.

Given an average space utilization of 200 square feet per employee results in a new employment-generated demand for 14.0 million square feet of office space over the next 25 years, or 561,000 square feet per year.

This fundamental demand does not account for the absorption of new space required to replace deteriorating or obsolete existing inventory. This gradually becomes a major demand source for larger metropolitan areas, and though most of metropolitan Phoenix's major office buildings are relatively new, it is nevertheless appropriate to estimate the impact of replacement demand upon the need for new office space development.

Assuming an annual replacement demand of 2 percent of a given year's base results in an average annual replacement demand of 430,000 square feet from 1981 to 2005.

Table 5  
 Projected Increase in Office-Using  
 Employment in Metropolitan Phoenix  
 1981-2005

<u>Category</u>	<u>Key Sector Employment Increase<sup>1/</sup></u>	<u>Percent Office Users</u>	<u>Office-Using Employment Increase</u>
F.I.R.E.	29,999	80%	24,000
Services	108,324	25%	27,100
T.C.P.U.	27,838	6%	1,700
Construction	32,967	5%	1,700
Manufacturing	187,371	4%	7,500
Government	96,451	4%	3,900
Wholesale/Retail Trade	138,275	3%	4,200
Total	--	--	70,100

<sup>1/</sup> Arizona Department of Employment Security.  
 Source: Economics Research Associates.

This replacement demand, added to the employment-generated demand developed above, results in a combined average annual demand of approximately 1 million square feet.

Annual Office Space Demand  
FY 1981-2005  
(square feet)

<u>Demand Component</u>	<u>New Office Space Required</u>
New Employment	567,000
Replacement	430,000
Total	997,000

The acreage requirements for this level of demand for office space will vary depending on the distribution of space among low, mid and high rise developments. Site coverage for an office building may range from 10 percent for a high rise building to 45 percent for a two story building. Assuming an overall site coverage of 25 to 30 percent for metropolitan Phoenix results in an estimated demand for between 80 and 100 acres per year for office development from 1981 to 2005.

## Retail

Based on an analysis of retail sales levels and the number of retail employees in Maricopa County, it is estimated that there is a total of 64 million square feet of retail space in the County. This space is comprised of sixteen major regional shopping centers, as well as community centers, neighborhood centers, and strip commercial centers. The two malls most recently completed are the Paradise Valley Mall and the Westridge Mall. A list of the major regional shopping centers and their locations is shown in Table 6. Construction of retail space over the past decade is shown in the text table below.

Retail Construction  
(square feet)

1970	400,000
1971	900,000
1972	400,000
1973	1,100,000
1974	2,100,000
1975	300,000
1976	800,000
1977	500,000
1978	1,300,000
1979	1,500,000
1980	1,700,000
1981	1,600,000
Average Annual	1,100,000

Source: Coldwell Banker.

Based on an analysis of projected population growth, per capita retail sales, and average sales per square foot, it is estimated that there will be an average annual demand for an additional 1.3 million square feet of new retail space between 1981 and 2005. In terms of acreage requirements, this translates into a demand for 3,250 acres from 1981 to 2005, or 130 acres per year.

## Hotel

The Phoenix metropolitan area, with a total inventory of over 21,000 units, has an extraordinarily high number of first-class hotel rooms for a city of its size--over 15,000 rooms. This is, of course, due to the winter resort business.

Phoenix's popularity as a resort area came into being following World War II, with the advent of air travel. With a current total passenger volume of approximately 7 million, climbing to an estimated 17 million total enplanements plus deplanements in the next 20 years, Sky Harbor International Airport is now one of the busiest in the nation.

In addition to its resort trade, Phoenix has also serviced the nonresort business as well--the old highway-oriented motels catering to overnight visitors, several hotels in downtown and north central areas oriented to business and convention visitors, and the two large convention/business visitor hotels downtown. Downtown Phoenix facilities account for roughly 20 percent of the rooms listed in the AAA, Hotel and Travel Index and Mobil Guides.

The number of out-of-state travelers seeking respite from cold winters or on business trips has shown strong growth as has the booking of conventions in Phoenix. The prospects of continued strong tourism and economic growth in the metropolitan Phoenix area indicate a good potential for additional hotel space in the airport area. In a recent prior study, the future hotel demand in the Phoenix Metropolitan area was projected as shown in Table 7. The cumulative regional hotel room demand over the 1981-2000 forecast period is estimated at over 12,000 new rooms, or 600 rooms per year. Based on an estimate of 0.05 acres per room results in an acreage requirement of 600 acres, or 30 acres per year.

**Summary** The preceding analysis has projected regional space requirements for industrial, office, retail and hotel space, as follows:

	Total New Acreage 1981 - 2005	Average Annual New Acreage 1981-2005
Light Industrial	6,000	240
Office	2,500	100
Retail	3,250	130
Hotel	750	30

The above table indicates that the greatest employment acreage requirements regionally will be generated by light industrial uses, followed by retail and then office uses.

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In this section, a first cut is made by the consultant at estimating the share of the market demand (identified in the previous section) which is likely to occur in the Rio Salado District. These are preliminary estimates of acreage absorption which will be refined and changed as this planning process continues and as various alternative development scenarios are discussed. The following discusses some of the considerations in estimating capture rates.

Industrial: A large share of regional industrial growth can be expected to occur within the Rio Salado Development District. In fact, development trends already support that trend, with the current proliferation of industrial parks along the borders of the District. Locations within the Rio Salado Development District will be attractive to industry because of their central locations relative to area labor markets. Locations in Phoenix will offer access to Highway I-10, when completed.

There is also an opportunity to develop a high tech/R&D industrial area near Arizona State University, capitalizing on the need by high tech companies for skilled technicians and scientists.

Office: Rio Salado is likely to capture a much lesser share of the demand for office space, which has been more concentrated in the Central and Camelback Corridors. As office development is more subject to image and prestige than industrial development, the greatest potentials for office development may be realized after Rio Salado has been in place for a time and has had time to begin to change the image of the River and South Phoenix. The City of Phoenix would like to strengthen its downtown area through office development, and is opposed to creating a competing office center in the Phoenix portion of the District.

Area real estate brokers do not see major office development occurring in the District in the near future. However, the decreasing availability of land in the Camelback Corridor, a popular location for low to mid-rise office development, could have implications for Rio Salado. Perhaps low to mid-rise office space, if linked to Rio Salado water or recreation amenities, could ultimately be an attractive new market.

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Retail: The most likely types of retail to occur in Rio Salado are specialty retail centers, taking advantage of the water and recreation orientation, and small neighborhood shopping centers serving new residential developments. Initially, there does not appear to be a demand for a large regional shopping mall within the District.

Hotel: Riverfronts and lakefronts have been the focus of hotel development in many places, including such cities as San Antonio and Austin, Texas. However, one of the major components of hotel development in San Antonio has been the convention business, with a major convention facility on the river itself. In Phoenix, the convention center is in the downtown, which is a considerable distance away from the Rio Salado Development District. Scottsdale is also the location of considerable convention activity.

Resort hotels which take advantage of waterfront locations and recreational opportunities could locate in areas within the District which are not adversely impacted by airport noise. The lakes, golf courses and other amenities likely to occur in the district should attract a portion of the resort tourist business, particularly in areas away from the central core of the District.

More business oriented hotels, of higher density and more internally oriented could be developed in some areas too noisy for resort hotel development. The numerous new businesses occupying industrial and perhaps office space within the District will generate a need for nearby business oriented hotel space.

**Summary** A preliminary estimate of acreage absorption by use for the Rio Salado Development District is shown in Table 7. These figures are based on the overall regional demand figures discussed in the previous section, and on "guestimates" of the District's potential share of this demand. The ranges shown do not reflect detailed market analyses for each use or for each subarea of the District, but are intended to give an indication of the development potentials of Rio Salado from a market

Table 7

Preliminary Estimate of Land Absorption  
 Within the Rio Salado Development District<sup>1/</sup>  
 (Acres)  
 1981-2005

Category	Annual Regional Absorption	RSDD Capture Rate		RSDD Annual Absorption		Total RSDD Absorption 1981-2005
		1981-1990	1991-2005	1981-1990	1991-2005	
Light Industrial	240	10-20%	15-25%	25-50	35-60	775-1,400
Office	100	--	5-10%	--	5-10	75-150
Retail	130	--	5-10%	--	5-15	75-225
Hotel	30	--	10-20%	--	5-10	75-150
Total	500	--	--	25-50	50-95	1,250-2,425

<sup>1/</sup> Does not include residential absorption.

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perspective, and to provide a basis for estimating the development period for the Rio Salado Development District.

The preceding analysis has examined regional growth trends and has analyzed Rio Salado development potentials from two perspectives: first, population and employment projections for Rio Salado by local planning officials were compiled to get a sense of what knowledgeable people in the area thought might happen; second, land absorption within the District was projected for selected land uses, based on preliminary estimates of regional market potentials and possible capture rates by the District. The two approaches arrived at projections which are not incompatible, with the projections in both methodologies reflecting higher capture rates for activities relating to economic/industrial development, and a lower capture of regional residential growth.

The sand and gravel industry represents a major presence on the Salt River and is of importance to the local construction industry. According to the Arizona Rock Products Association, at least three quarters of the sand and gravel mined in Maricopa County comes out of the Salt River. Almost all of the sand and gravel mined there is used locally, primarily for construction purposes.

Fifteen major sand and gravel operators on the Salt River were identified by the Arizona Rock Products Association as being within the Rio Salado Development District. ERA estimates there are another 5 or so smaller plants on the Salt River. Most of the sand and gravel companies on the Salt River produce ready mix concrete at their plants, and some also manufacture pre-stressed concrete products and asphalt. According to the Arizona Department of Employment Security (DES), there are only 13 firms and 150 employees involved solely in the extraction of sand and gravel in Maricopa County.

To obtain an accurate picture of the level of employment in this industry one must look at statistics not only on mining and quarrying, but also on concrete products and ready-mixed concrete. According to the Department of Employment Security, there were 2,300 employees in the ready-mix category in Maricopa County in 1981 and 600 in the concrete products industry. The Department of Employment Security estimates that 95 percent of these employees work in the Rio Salado Development District.

Estimated Employment by the Sand and Gravel  
Industry in Maricopa County  
1981

<u>Category</u>	<u>Number of Employees</u>	<u>Payroll</u>
Mining and Quarrying	150	\$ 2,700,000
Ready-Mixed Concrete	2,300	\$48,200,000
Concrete Products	600	\$11,000,000
Total	3,050	\$61,900,000

Assuming 95 percent of the above employees are in the Rio Salado Development District, there are an estimated 2,900

employees there earning approximately \$60 million per year. To put this in some perspective, employment in the sand and gravel industry on the Salt River accounts for only 0.4 percent of total wage and salary employment, and for only 2 percent of manufacturing employment.

The data on employment levels shown in the text table compares the level of employment in the sand and gravel industry to that of other employment categories. A more detailed listing of employment by category is shown in Table 8.

Maricopa County Wage and Salary Employment by Category  
1981

Sand and Gravel Related	3,050
Manufacturing	116,600
Fabricated Metals	11,200
Machinery	51,300
Non Durable Goods	23,200
Mining and Quarrying	400
Construction	47,800
Retail Trade	128,700
Finance, Insurance, Real Estate	26,800
Services	140,700
Government	99,500
Total	655,200

Contrary to what many people think, sand and gravel is an expendable resource. Periodic flooding of the Salt River does not replenish the supply. Two of the major sand and gravel companies interviewed (the Tanner Co. and Arizona Sand and Rock Co.) indicated the size of their reserves at four locations on the Salt River.

<u>Company</u>	<u>Site</u>	<u>Estimated Reserve</u>
Tanner	19th Ave	35 years
	40th St.	45 years
ASR	Central to 36th St.	
	Central to 16th St.	depleted
	16th St. to 36th St.	50 years
	Alma School Rd	25 years

Table 8  
 Nonagricultural Employment by Place of Work  
 1981  
 (In Thousands)

TOTAL WAGE AND SALARY	655.2
Manufacturing	116.6
Durable Goods	93.4
Stone, Clay, and Glass	3.6
Primary and Fabricated Metals	11.2
Machinery	51.3
Other Durable Goods	27.3
Nondurable Goods	23.2
Food and Kindred Products	6.5
Apparel	2.8
Printing and Publishing	8.1
All Other Nondurable Goods	5.9
Mining and Quarrying	0.4
Construction	47.8
Trans., Comm., and Public Utilities	32.9
Transportation	15.1
Communications and Public Utilities	17.8
Trade	170.0
Wholesale Trade	41.2
Retail Trade	128.7
General Merchandise and Apparel	24.7
Food stores	20.4
Automotive and Service Stations	14.5
Eating and Drinking Places	42.3
Other Retail Trade	26.8
Finance, Insurance, and Real Estate	47.3
Services and Miscellaneous	140.7
Hotels and Other Lodging Places	13.3
Business Services	30.3
Health Services	38.1
Other Services	59.0
Government	99.5

Note: Numbers may not add due to rounding.

Source: Labor Market Information, Research and Analysis,  
 Arizona  
 Department of Employment Security.

The major market for ready-mix concrete and concrete products is the non-residential construction industry. Thus any increases in the costs of production and transportation of these products due to the relocation of sand and gravel operations outside the District would increase the cost of construction. In order to determine how great an impact that might have on construction costs, Economics Research Associates contacted a local (Phoenix) construction firm to obtain an estimate of the percent of construction costs allocated to concrete (ready-mix and prestressed) for varying types of construction.

Percent of Construction Costs  
for Concrete Products

<u>Type of Construction</u>	<u>Percent of Cost for Concrete</u>
Industrial	10%
Commercial	7-8%
Residential	5-6%
Public Works	50-60%

The fact that sand and gravel is expendable has implications for Rio Salado. The sand and gravel operators would like to mine out their reserves, and this may be compatible with a long term, phased development plan. The Arizona Rock Products Association feels that Rio Salado is compatible with the interests of the sand and gravel industry if it is phased over a long period. The sand and gravel operators are in favor of flood control, because the industry suffers economic losses as a result of flooding. Also, they would like to sell or develop those areas which are mined out and are better able to do so with flood control.

According to a spokesperson at the Tanner Companies, they are always looking for new reserves and there are few sites on the Salt River in the Rio Salado Development District which are not already spoken for. There are, however, unmined reserves on both the Salt River Pima/Maricopa Indian Community and the Gila River Indian Community which offer future potential.

Arizona Sand and Rock leases their Alma School Road site from the Salt River Pima/Maricopa Indian Community and finds the

relationship most satisfactory. The Indians are also mining some of these reserves themselves. The short terms of new leases with the Indians are said to be a problem by some operators but not by others. There are portable batch plants which make it possible to set up a ready-mix plant without a large capital investment, thus making short term leases more acceptable. The Tanner Company indicated that they will build a permanent ready-mix plant at a site on the Gila River Indian Community where they have a five year lease with an option to renew for five years.

The impacts of reducing sand and gravel operations outside the District will vary depending on the timing and locations of those relocations. In terms of regional employment impacts, the sand and gravel industry represents a very small share of regional employment (0.4 percent). However, as mentioned previously, there are some 2900 employees involved in this industry in the District with earnings of \$62 million.

Relocating sand and gravel operations outside the District could result in increased construction costs if transportation costs increase. According to the Arizona Rock Products Association, the cost of sand and gravel will double if transported an additional 15 miles. Further analysis is needed to determine how expensive (or inexpensive) Salt River sand and gravel is relative to other cities, and to determine where there are alternative sites for sand and gravel mining in the region. Many other cities do import sand and gravel from much greater distances, including Flagstaff, which imports its sand and gravel from Campe Verde, 40 miles away, and Denver, which enacted zoning regulations which forced sand and gravel mining out of the city limits.

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APPENDICES



## 2. METHODOLOGY

### Summary of the Model:

Using an economic/demographic simulation model, BREAM (Bureau of Reclamation Economic Assessment model), population, employment, and income projections were prepared for each of the fourteen counties and the state. Basically, the model is comprised of five submodels and each of these submodels is explained briefly here. Those who are interested in a detailed version of the model and its subparts may refer to BREAM's technical description and user's guide prepared by Mountain West Research, Inc., for the Bureau of Reclamation, dated July, 1981.

The five submodels of BREAM are the demographic submodel, the economic submodel, the Labor Market submodel, the construction worker submodel, and the community allocation submodel. The first three submodels are the core of this model and are briefly discussed in the following paragraphs. The construction worker submodel is used whenever a large construction project is under consideration, especially when the demand for labor exceeds the local supply of labor. The community allocation submodel is used in allocating the county-level projected population to the subcounty level.

### Demographic Submodel:

Vital rates and cohort-specific, base-year population is used to compute the effect of births and deaths on the existing population of the area under study. Before this process starts, adjustments are made for special populations, if there are such sub-populations with distinct demographic characteristics, or if there is non-employment related in/out-migration. A high percentage of Indian population (more than 10% of the total population) is an example of special population. Retirement, student, and military in/out-migration are examples of non-employment-related migration.

### Labor Market Submodel:

This submodel takes the total demand for labor from the economic submodel and compares it with the supply of labor obtained from the demographic submodel. For a given rate of unemployment, if the local supply of labor is greater (smaller) than the labor demand (number of persons, place of residence base), this will trigger out-/in- migration of labor from/to the area under consideration. This will continue up to the point when the labor demand and supply are in equilibrium.

Local labor supply is obtained by multiplying age and sex-specific cohorts of the resident population for ages 16 to 65 by their specific labor force participation rates. Additionally, in calculating the labor demand, adjustments are made for commutations and multiple job holdings, in order to convert total employment from the number of jobs (place-of-work basis) to number of persons (place or residence basis).

Economic Submodel:

In the terminology of regional economics, this submodel can be categorized as an export-base model. The current and projected levels of basic employment by industry (place-of-residence-basis) is determined by the user, out-side of the model, along with income by components.

Total economic activity for the area under consideration is determined as a function of basic labor income, non-basic labor income, and non-labor income. Basic Labor income is obtained by multiplying the projected level of basic employment by their projected levels of average earnings. Non-basic income is obtained by a set of industry and area-specific equations that relate non-basic employment to total personal income and non-labor income. User-specified projected levels of basic employment is the primary determinant of employment and income-determined simultaneously.

An explicit account of intercounty trading relationships has been, normally, a qualitative issue; however, one of the important contributions of BREAM is the application of a methodology to take account of such interrelationships, in the economic submodel. An example of this would be an increase in the basic employment in a small county, such as Gila County, which would stimulate employment and income in a larger county, such as Maricopa County. Of course, Maricopa County is a trade and service center to Gila County and most other counties in Arizona.

Data Collection:

Data used in this projection were obtained from various sources. Income by sources and employment by sectors for each of the counties, for the years 1971-1980, were compiled from the Bureau of Economic Analysis (BEA) documents. Labor force and total employment were obtained from the Labor Market Information Section of the Arizona Department of Economic Security. Births and deaths data were provided by the Arizona Department of Health Services. Historical county-level total population was gathered from the Population Statistics Unit of DES. The number of employees by establishment was acquired from the Research and Report Section of the Office of Unemployment Insurance Administration. Other sources included Bureau of Census sources, major employers in different counties around the state, city, and county planners, the three universities (University of Arizona, Arizona State University, and Northern Arizona University), banks and financial institutions, a few major developers, and several major state departments.

Using Employment Security 202 (ES. 202) data for the second quarter of 1981 at the two-, three-, and four-digit levels of SIC (Standard Industrial Classification Code), employment by sector was broken down into basic and non-basic, for each one of the fourteen counties. The next step was to project basic employment by sector for each one of the counties.

Historical growth rates in employment by sector; availability of current and potential resources; expected growth rates by major employers, planners, and other well-informed individuals; and national projected employment for different sectors were the main factors considered in determining the projected average rates of growth of basic employment, by sectors and by county.

Demographic Assumptions:

A set of demographic assumptions had to be made with regard to the projected death rates, fertility rates, retirement migration rates, and labor force participation rates for each one of the fourteen counties. No projected numbers were available for these variables either at the state or county levels; however, projections for such variables were available at the national level. Therefore, one way for estimating such numbers was to make assumptions with regard to the relationship of the county rates to the national rates. For instance, whether the fertility rate, death rate, and labor force participation rate for a county would stay constant over time, converge to a national rate by the year 2000 (1990 in the case of labor force participation rate), or have a similar growth rate as the national rate.

Different assumptions were made, considering the socio-economic characteristics of each county. For example, in the case of death rates, changes in death rates for each county was assumed to be the same as changes at the national rate. In the case of fertility rates, two sets of assumptions had to be made:

- 1) Whether a county's fertility rate will converge to the national rate, stay constant, or grow at the same rate as the national rate, and
- 2) Choose one of the three series if either the convergence or constant option were selected:
  - (a) U.S. Series I projections or 2.6 completed births,
  - (b) U.S. Series II projections or 2.0 completed births, and
  - (c) U.S. Series III projections or 1.6 completed births.

For the general population, in all fourteen counties, it was assumed that each county's fertility rate will grow at the same rate as the national trend, choosing U.S. Series II out of the three series.

For the Indians in Apache, Coconino, and Navajo Counties, it was assumed that the fertility rate will stay relatively constant. Finally, in the case of labor force participation rates, it was assumed that each county's labor force participation rate will grow parallel to the national rate. If the national LFPR information would have been for the year 2000 or beyond that rather than 1990, certainly, the convergence option would have been more logical, especially in the case of Maricopa and Pima Counties.

Historical trends, national projections and the qualitative judgments of some well-informed individuals were the major factors considered in determining the projected levels of retirement migration. This set of procedures was used for each of the counties.

After entering the initial projected rates or levels of basic employment by industry and the projected growth rates for the demographic variables into the model, the model was run and the preliminary results or projections, along with a copy of the basic employment assumptions, was sent to each one of the members of POPTAC (Technical Advisory Committee on Population Estimates and Projections). Some of the initial anticipated growth rates were changed, based on the request from the POPTAC members, before the final run was made.

Adopted by the MAG Regional Council, 21 July 1982

TABLE #1  
POPULATION ALLOCATIONS  
Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
49	AVDN	4940	7500	16900	27300	36900	43500	51911	60853	70903	80816	84767	88536
52	AVDN	9980	10000	10100	10700	11100	11500	14420	17556	21061	24918	29376	34819
	IMPA AVDN	TOTAL											
		14920	17500	27000	38000	48000	55000	66331	78409	91964	105733	114143	123355
101	BUCK	3434	4300	5900	7500	9300	12000	18847	25906	33217	40452	50375	64654
	IMPA BUCK	TOTAL											
		3434	4300	5900	7500	9300	12000	18847	25906	33217	40452	50375	64654
70	CHAN	6379	8700	13000	19300	26725	34900	34886	34872	34858	34844	34830	34816
76	CHAN	23980	36300	44100	54700	62500	65000	68144	71241	74550	78240	78685	78848
77	CHAN	597	4900	11800	18200	20000	22400	25416	28479	31814	35578	38012	38707
80	CHAN	1983	2200	8300	12800	24700	36600	52142	68085	85741	106062	112878	115404
81	CHAN	2782	4900	7800	11200	14300	29000	46582	60576	58619	56363	54092	51814
	IMPA CHAN	TOTAL											
		35721	57000	85000	116200	148225	187900	227170	263253	285582	311087	318496	319589
1	CTYINU	3014	3200	4500	5300	5800	30000	35865	46876	65386	89048	122302	171182
2	CTYINU	2773	3700	5300	6600	8000	9500	13083	17048	21676	26978	33407	41679
3	CTYINU	365	600	1500	2000	2500	3200	4319	6247	10174	18787	31782	51881
10	CTYINU	90	300	350	450	600	600	1882	3477	5493	8040	12269	18705
11	CTYINU	3780	11600	21000	34700	46900	53000	60156	67408	75263	84078	97745	117173
16	CTYINU	41746	46600	48000	50200	51000	52000	53021	53454	53869	54269	54653	55022
26	CTYINU	2771	7000	13000	18000	24000	30000	36712	42918	49239	56018	66552	64799
27	CTYINU	349	400	450	550	600	600	650	700	750	800	850	900
28	CTYINU	4089	4500	4900	5100	5400	5700	5985	6285	6598	6928	7275	7639
36	CTYINU	4099	4200	4300	4300	4300	4300	4300	4300	4300	4300	4300	4300
37	CTYINU	2539	2900	3400	3600	4400	5500	7888	11231	16240	22865	32218	46027
38	CTYINU	4039	6300	11300	15700	20400	26900	35237	43592	47646	48268	48779	49280
50	CTYINU	727	1000	1300	1600	1900	2400	3192	4075	4960	5912	7119	8748
73	CTYINU	1497	1700	2000	2800	3600	4700	7515	11927	16317	20477	26087	34043
74	CTYINU	3435	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400
79	CTYINU	2265	2400	2400	2400	2500	2500	2550	2600	2650	2700	2750	2800
82	CTYINU	2698	2800	2900	3300	3700	5700	8547	13664	22541	34781	52729	79892
	IMPA CTYINU	TOTAL											
		80276	102600	130000	160000	189000	240000	284301	339203	406503	487649	604215	757468
14	ELMIRA	4497	6500	9000	11600	14000	16000	20142	24525	29458	35184	44172	57199
	IMPA ELMIRA	TOTAL											
		4497	6500	9000	11600	14000	16000	20142	24525	29458	35184	44172	57199

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

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Adopted by the MAG Regional Council, 21 July 1982

TABLE #1  
 POPULATION ALLOCATIONS  
 Maricopa County  
 by Planning District  
 1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
1102	GILABD	1585	2000	2400	2800	3000	3200	3500	3900	4400	5000	5700	6200
	IMPA GILABD TOTAL	1585	2000	2400	2800	3000	3200	3500	3900	4400	5000	5700	6200
71	GILBRT	7072	10600	21500	33200	44000	54000	66366	77816	82886	81011	78951	76910
72	GILBRT	1180	1900	2900	3800	4700	5600	7355	9156	11147	13432	17096	22418
75	GILBRT	2632	3500	4600	6000	7300	10400	14599	18605	24103	29394	36592	46873
	IMPA GILBRT TOTAL	10884	16000	29000	43000	56000	70000	88320	105577	118135	123837	132639	146201
8	GLENDL	3908	8500	20000	33000	45000	61000	61000	61000	61000	61000	61000	61000
18	GLENDL	18714	22000	30000	36000	42000	45000	48369	51826	55491	59458	64684	67856
34	GLENDL	73701	75800	77000	80000	84000	88000	93023	97986	103297	109224	118665	125994
35	GLENDL	4006	9700	12000	15000	17000	22000	28356	34619	41334	48855	59097	59284
	IMPA GLENDL TOTAL	100329	116000	139000	164000	188000	216000	230748	245432	261122	278537	303446	314133
51	GOODYR	4068	5300	13600	21800	30000	41000	55424	70426	87180	106561	130240	134054
	IMPA GOODYR TOTAL	4068	5300	13600	21800	30000	41000	55424	70426	87180	106561	130240	134054
68	QUADLP	4506	5000	6500	7700	9000	9000	9000	9000	9000	9000	9000	9000
	IMPA QUADLP TOTAL	4506	5000	6500	7700	9000	9000	9000	9000	9000	9000	9000	9000
57	MESA	85765	90300	93800	101700	104700	117300	117026	116751	116474	116196	115916	115634
58	MESA	15873	16800	19300	22000	24600	27600	31345	34724	38116	41723	47919	54349
59	MESA	8858	12300	14500	16500	21600	24200	27475	30723	34204	38091	44288	53160
60	MESA	8315	8400	12100	13700	15400	17300	20218	22591	24682	26583	29894	34283
61	MESA	11231	18000	23100	27500	33900	38000	43100	48440	54352	61094	71236	74839
62	MESA	13525	15000	19300	22000	24700	27700	31389	35293	39627	44571	51841	62023
63	MESA	13190	18900	25100	34300	40900	46300	48058	49844	51668	53535	55511	57616
64	MESA	28650	30300	33800	35100	36975	38700	39720	40345	40946	41526	42084	42620
	IMPA MESA TOTAL	185407	210000	241000	272800	302775	337100	358331	378711	400069	423317	458690	494524
104	O/S	16153	20300	23000	29700	38900	41200	43300	45510	47832	50272	52836	55531
	IMPA O/S TOTAL	16153	20300	23000	29700	38900	41200	43300	45510	47832	50272	52836	55531
9	PEORIA	1003	2400	5000	8000	10000	21000	34947	48622	63225	79503	80100	80103
17	PEORIA	14055	20600	37000	50000	66000	74000	74000	74000	74000	74000	74000	74000
	IMPA PEORIA TOTAL	15058	23000	42000	58000	76000	95000	108947	122622	137225	153503	154100	154103

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TABLE #1  
POPULATION ALLOCATIONS  
Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
30	PV	12482	15000	15600	16800	18000	18000	19302	20628	22004	23450	25176	27251
	IMPA PV	TOTAL											
		12482	15000	15600	16800	18000	18000	19302	20628	22004	23450	25176	27251
5	PXX	6152	7100	8100	9100	10500	22100	49286	77702	109579	146543	157012	160824
6	PXX	21015	26000	30800	35500	41200	49000	58778	68089	77793	87560	86743	85487
7	PXX	16721	23800	30000	37100	43300	45700	48135	50530	53056	55826	60101	66120
19	PXX	38720	39000	39300	39600	40100	41200	42595	43894	45233	46694	47877	47327
20	PXX	18319	21800	24300	26700	29500	32700	36730	40678	41099	41438	41759	42066
21	PXX	26789	29400	32500	34100	35900	37000	38320	39639	40705	41090	41453	41815
22	PXX	44023	46600	49000	52100	54900	56500	58555	60474	60163	59788	59389	58966
23	PXX	25228	33500	40400	46600	51200	54600	58596	62149	63934	61973	59921	57886
31	PXX	11633	15000	16000	17000	17800	18300	18956	19389	19250	19098	18944	18787
32	PXX	54454	56300	57800	59600	61800	64000	64669	65340	66017	66702	67426	68196
33	PXX	63040	65400	67300	69200	70800	72400	73852	73985	74085	74159	74207	74231
39	PXX	24508	29700	36200	43100	46800	50800	55871	60342	64779	69481	67576	64875
40	PXX	68168	71100	72700	71700	67900	67500	67200	66812	66370	65896	65627	65589
41	PXX	53157	53700	54200	55500	55900	57000	57540	57897	58237	58563	58873	59168
42	PXX	45310	50000	54800	62600	67100	71900	73465	73876	74279	74683	75086	75490
43	PXX	58404	62000	65900	68100	70100	71000	70993	70986	70979	70972	70965	70958
45	PXX	50904	51200	51500	53000	55000	57000	57841	58671	59496	60318	61170	62057
46	PXX	29722	31000	34300	40100	42900	43500	43407	43309	43207	43100	42989	42874
47	PXX	46832	45300	45100	44100	43000	43000	43216	43421	43615	43797	43968	44127
53	PXX	5491	8900	11600	15000	19100	23800	29843	32418	33540	34570	35535	36436
54	PXX	14228	13300	12700	11900	11400	12300	12479	12649	12811	12965	13110	13247
55	PXX	8353	5800	4100	4200	4300	4400	4966	5517	6053	6574	7080	7570
66	PXX	51783	54400	57300	59900	66800	74000	83035	91664	100661	100220	99137	97913
67	PXX	18975	21100	24300	28600	35500	44700	55751	65454	74882	84570	100828	102942
78	PXX	6089	18600	45200	68600	85200	91600	91600	91600	91600	91600	91600	91600
	IMPA PXX	TOTAL											
		808018	880000	965000	1053000	1128000	1206000	1295676	1376484	1451422	1518178	1548374	1556547
4	SCOTT'S	367	600	1800	4200	6300	10000	14269	18607	23375	28824	37634	50438
24	SCOTT'S	6246	7700	8400	8900	9400	9500	13511	17617	21888	26333	31067	36276
25	SCOTT'S	1768	13000	23300	32200	40400	52600	68300	84150	101457	104329	105871	107363
29	SCOTT'S	23770	30200	31100	31300	31400	31400	31400	31400	31400	31400	31400	31400
44	SCOTT'S	56684	58500	55400	56400	57500	59500	59500	59500	59500	59500	59500	59500
	IMPA SCOTT'S	TOTAL											
		88835	110000	120000	133000	145000	163000	186981	211274	237620	250386	265472	284977

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POPULATION ALLOCATIONS  
Maricopa County  
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1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
12	SURPRS	537	1300	2000	2500	3600	6400	8715	12647	19250	28296	41553	61711
13	SURPRS	3711	3900	5200	6600	7400	7600	8199	8766	9300	9800	10269	10704
MPA SURPRS TOTAL		4248	5200	7200	9100	11000	14000	16914	21413	28550	38096	51821	72415
56	TEMPE	38934	48600	50700	53600	57000	57000	57094	57187	57282	57382	57511	57674
65	TEMPE	44715	52600	55200	58800	60800	60800	61668	62537	63415	64306	65267	66311
69	TEMPE	23710	37800	48100	60600	72200	72200	72230	72257	72293	72346	72502	72777
MPA TEMPE TOTAL		107359	139000	154000	173000	190000	190000	190993	191981	192990	194034	195281	196762
48	TOLLES	4476	5000	10000	15000	20000	20000	20173	20345	20526	20724	21023	21438
MPA TOLLES TOTAL		4476	5000	10000	15000	20000	20000	20173	20345	20526	20724	21023	21438
103	WICK	3535	4500	5600	6700	8000	9000	10000	11000	12000	13000	14000	15000
MPA WICK TOTAL		3535	4500	5600	6700	8000	9000	10000	11000	12000	13000	14000	15000
15	YOUNGT	2239	2300	2400	2500	2500	2500	2500	2500	2500	2500	2500	2500
MPA YOUNGT TOTAL		2239	2300	2400	2500	2500	2500	2500	2500	2500	2500	2500	2500
GRAND TOTAL		1508030	1746500	2033200	2342200	2634700	2945900	3256889	3568089	3879290	4190488	4501685	4812883

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #6  
POPULATION PER DWELLING UNIT

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
49	AVON	2.771	2.801	2.831	2.860	2.890	2.920	2.950	2.980	3.010	3.040	3.070	3.100
52	AVON	3.482	3.482	3.482	3.482	3.482	3.482	3.482	3.482	3.482	3.482	3.482	3.482
	MPA AVON	TOTAL											
		3.209	3.153	3.044	3.012	3.009	3.022	3.052	3.080	3.107	3.134	3.167	3.199
101	BUCK	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668
	MPA BUCK	TOTAL											
		2.721	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668	2.668
70	CHAN	2.811	2.811	2.811	2.811	2.811	2.818	2.817	2.816	2.815	2.814	2.813	2.811
76	CHAN	2.859	2.854	2.848	2.843	2.838	2.832	2.827	2.822	2.816	2.811	2.805	2.800
77	CHAN	2.941	2.928	2.915	2.902	2.890	2.877	2.864	2.851	2.838	2.826	2.813	2.800
80	CHAN	2.555	2.578	2.600	2.622	2.644	2.667	2.689	2.711	2.733	2.756	2.778	2.800
81	CHAN	2.366	2.369	2.372	2.375	2.378	2.381	2.384	2.388	2.391	2.394	2.397	2.400
	MPA CHAN	TOTAL											
		2.788	2.793	2.775	2.768	2.755	2.722	2.695	2.683	2.695	2.709	2.719	2.728
1	CTYINU	2.710	2.719	2.727	2.735	2.743	2.751	2.759	2.767	2.776	2.784	2.792	2.800
2	CTYINU	1.941	1.946	1.951	1.957	1.962	1.968	1.973	1.978	1.984	1.989	1.995	2.000
3	CTYINU	2.897	2.863	2.829	2.795	2.761	2.726	2.692	2.658	2.624	2.590	2.556	2.522
10	CTYINU	2.250	2.224	2.197	2.171	2.144	2.118	2.091	2.065	2.038	2.012	1.985	1.959
11	CTYINU	2.208	2.182	2.156	2.130	2.104	2.078	2.053	2.027	2.001	1.975	1.949	1.923
16	CTYINU	1.591	1.578	1.565	1.552	1.539	1.526	1.513	1.500	1.487	1.474	1.461	1.448
26	CTYINU	1.802	1.802	1.801	1.801	1.801	1.801	1.801	1.801	1.800	1.800	1.800	1.800
37	CTYINU	3.210	3.172	3.134	3.097	3.059	3.021	2.984	2.946	2.908	2.870	2.833	2.795
38	CTYINU	2.904	2.894	2.885	2.875	2.866	2.857	2.847	2.838	2.828	2.819	2.809	2.800
50	CTYINU	2.874	2.840	2.806	2.772	2.738	2.705	2.671	2.637	2.603	2.570	2.536	2.502
73	CTYINU	2.603	2.594	2.585	2.575	2.566	2.556	2.547	2.538	2.528	2.519	2.509	2.500
82	CTYINU	3.105	3.050	2.995	2.940	2.885	2.830	2.775	2.720	2.665	2.610	2.555	2.500
	MPA CTYINU	TOTAL											
		1.831	1.859	1.913	1.942	1.962	2.043	2.071	2.107	2.142	2.172	2.199	2.237
14	ELMIRA	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598
	MPA ELMIRA	TOTAL											
		3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598	3.598
71	GILBRT	3.504	3.463	3.422	3.381	3.340	3.299	3.258	3.217	3.175	3.134	3.093	3.052
72	GILBRT	2.130	2.191	2.252	2.313	2.374	2.435	2.495	2.556	2.617	2.678	2.739	2.800
75	GILBRT	3.100	3.064	3.027	2.991	2.955	2.918	2.882	2.845	2.809	2.773	2.736	2.700
	MPA GILBRT	TOTAL											
		3.182	3.156	3.190	3.193	3.177	3.148	3.111	3.077	3.034	2.987	2.938	2.891

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POPULATION PER DWELLING UNIT

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
8	GLENDL	2.708	2.708	2.708	2.708	2.708	2.920	2.920	2.920	2.920	2.920	2.920	2.920
18	GLENDL	3.065	3.065	3.065	3.065	3.065	3.065	3.065	3.065	3.065	3.065	3.065	3.065
34	GLENDL	2.239	2.239	2.239	2.239	2.239	2.239	2.239	2.239	2.239	2.239	2.239	2.239
35	GLENDL	2.709	2.709	2.709	2.709	2.709	2.709	2.709	2.709	2.709	2.709	2.709	2.709
	MPA GLENDL TOTAL	2.392	2.429	2.482	2.515	2.537	2.603	2.602	2.602	2.601	2.601	2.598	2.592
51	GOODYR	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914
	MPA GOODYR TOTAL	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914	2.914
57	MESA	2.419	2.426	2.434	2.441	2.448	2.476	2.480	2.484	2.488	2.492	2.496	2.500
58	MESA	2.632	2.629	2.626	2.623	2.620	2.617	2.615	2.612	2.609	2.606	2.603	2.600
59	MESA	1.786	1.833	1.880	1.926	1.973	2.020	2.066	2.113	2.160	2.207	2.253	2.300
60	MESA	1.890	1.937	1.983	2.029	2.076	2.122	2.168	2.215	2.261	2.307	2.354	2.400
61	MESA	1.766	1.805	1.845	1.884	1.924	1.963	2.003	2.042	2.082	2.121	2.161	2.200
62	MESA	1.431	1.474	1.517	1.559	1.602	1.644	1.687	1.730	1.772	1.815	1.857	1.900
63	MESA	1.882	1.902	1.922	1.941	1.961	1.981	2.001	2.021	2.041	2.060	2.080	2.100
64	MESA	2.912	2.883	2.855	2.827	2.798	2.770	2.742	2.713	2.685	2.657	2.628	2.600
	MPA MESA TOTAL	2.220	2.205	2.194	2.197	2.200	2.224	2.233	2.245	2.257	2.271	2.284	2.300
9	PEORIA	2.533	2.533	2.533	2.533	2.533	2.533	2.533	2.533	2.533	2.533	2.533	2.533
17	PEORIA	2.678	2.678	2.678	2.893	3.324	3.520	3.520	3.520	3.520	3.520	3.520	3.520
	MPA PEORIA TOTAL	2.667	2.662	2.660	2.837	3.193	3.240	3.129	3.049	2.984	2.929	2.927	2.927
30	PV	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912
	MPA PV TOTAL	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912	2.912
5	PXX	2.668	2.626	2.585	2.544	2.503	2.462	2.421	2.380	2.338	2.297	2.256	2.215
6	PXX	2.709	2.655	2.601	2.547	2.493	2.439	2.385	2.331	2.276	2.222	2.168	2.114
7	PXX	2.661	2.623	2.586	2.549	2.512	2.474	2.437	2.400	2.363	2.325	2.288	2.251
19	PXX	3.140	3.070	3.000	2.931	2.861	2.791	2.721	2.651	2.581	2.511	2.441	2.371
20	PXX	2.577	2.553	2.529	2.505	2.481	2.458	2.434	2.410	2.386	2.362	2.339	2.315
21	PXX	2.259	2.257	2.255	2.253	2.251	2.249	2.247	2.245	2.243	2.241	2.238	2.236
22	PXX	2.957	2.912	2.867	2.823	2.778	2.733	2.688	2.643	2.598	2.554	2.509	2.464
23	PXX	3.007	2.942	2.878	2.813	2.749	2.684	2.619	2.555	2.490	2.426	2.361	2.296
31	PXX	2.069	2.079	2.089	2.099	2.110	2.120	2.130	2.140	2.151	2.161	2.171	2.181
32	PXX	2.125	2.129	2.132	2.135	2.138	2.142	2.145	2.148	2.151	2.155	2.158	2.161

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #6

## POPULATION PER DWELLING UNIT

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
	IMPA PXX	(Continued)											
	33 PXX	2.574	2.545	2.516	2.487	2.458	2.428	2.399	2.370	2.341	2.311	2.282	2.253
	39 PXX	3.213	3.131	3.049	2.967	2.885	2.803	2.721	2.639	2.557	2.475	2.393	2.311
	40 PXX	3.326	3.244	3.161	3.078	2.995	2.913	2.830	2.747	2.664	2.582	2.499	2.416
	41 PXX	2.421	2.401	2.381	2.360	2.340	2.320	2.300	2.280	2.259	2.239	2.219	2.199
	42 PXX	1.985	1.996	2.008	2.019	2.030	2.041	2.053	2.064	2.075	2.086	2.098	2.109
	43 PXX	2.119	2.128	2.136	2.145	2.188	2.216	2.216	2.216	2.215	2.215	2.215	2.215
	45 PXX	2.194	2.184	2.174	2.163	2.153	2.143	2.132	2.122	2.112	2.101	2.091	2.081
	46 PXX	2.385	2.366	2.347	2.328	2.309	2.290	2.271	2.252	2.233	2.214	2.195	2.176
	47 PXX	2.666	2.642	2.619	2.595	2.572	2.548	2.525	2.501	2.478	2.454	2.431	2.407
	53 PXX	2.717	2.672	2.628	2.583	2.538	2.494	2.449	2.404	2.360	2.315	2.270	2.226
	54 PXX	3.068	3.032	2.996	2.960	2.924	2.888	2.852	2.816	2.780	2.744	2.708	2.672
	55 PXX	2.678	2.648	2.617	2.587	2.557	2.526	2.496	2.465	2.435	2.405	2.374	2.344
	66 PXX	3.132	3.057	2.983	2.908	2.834	2.759	2.685	2.610	2.536	2.461	2.387	2.312
	67 PXX	3.660	3.551	3.442	3.333	3.224	3.116	3.007	2.898	2.789	2.681	2.572	2.463
	78 PXX	2.294	2.339	2.384	2.429	2.593	2.788	2.788	2.788	2.788	2.788	2.788	2.788
	IMPA PXX	TOTAL											
		2.573	2.545	2.520	2.496	2.487	2.479	2.454	2.426	2.394	2.359	2.324	2.286
	4 SCOTTS	2.890	2.890	2.890	2.890	2.890	2.890	2.890	2.890	2.890	2.890	2.890	2.890
	24 SCOTTS	3.140	3.140	3.140	3.140	3.140	3.140	3.140	3.140	3.140	3.140	3.140	3.140
	25 SCOTTS	2.889	2.889	2.889	2.889	2.889	2.889	2.889	2.889	2.889	2.889	2.889	2.889
	29 SCOTTS	2.038	2.105	2.136	2.143	2.147	2.147	2.147	2.147	2.147	2.147	2.147	2.147
	44 SCOTTS	1.991	1.995	1.995	2.012	2.032	2.067	2.067	2.067	2.067	2.067	2.067	2.067
	IMPA SCOTTS	TOTAL											
		2.073	2.164	2.235	2.291	2.336	2.393	2.451	2.498	2.539	2.558	2.578	2.601
	12 SURPRS	3.216	3.216	3.216	3.216	3.216	3.216	3.216	3.216	3.216	3.216	3.216	3.216
	13 SURPRS	4.051	3.974	3.897	3.819	3.742	3.664	3.587	3.510	3.432	3.355	3.277	3.200
	IMPA SURPRS	TOTAL											
		3.922	3.753	3.680	3.632	3.552	3.445	3.385	3.330	3.283	3.250	3.228	3.213
	56 TEMPE	2.436	2.433	2.429	2.426	2.423	2.420	2.416	2.413	2.410	2.407	2.403	2.400
	65 TEMPE	2.719	2.719	2.719	2.719	2.719	2.719	2.719	2.719	2.719	2.719	2.719	2.719
	69 TEMPE	2.951	2.946	2.942	2.937	2.932	2.928	2.923	2.918	2.914	2.909	2.905	2.900
	IMPA TEMPE	TOTAL											
		2.653	2.665	2.677	2.688	2.695	2.692	2.689	2.687	2.684	2.681	2.679	2.677
	48 TOLLES	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286
	IMPA TOLLES	TOTAL											
		3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286	3.286

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #6  
POPULATION PER DWELLING UNIT

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
	15 YOUNGT	1.573	1.595	1.629	1.663	1.663	1.663	1.663	1.663	1.663	1.663	1.663	1.663
	MPA YOUNGT TOTAL	1.573	1.595	1.629	1.663	1.663	1.663	1.663	1.663	1.663	1.663	1.663	1.663
	GRAND TOTAL	2.457	2.451	2.458	2.466	2.481	2.495	2.492	2.488	2.483	2.474	2.465	2.458

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #2  
ACRES OF RESIDENTIAL DEVELOPMENT

Maricopa County  
by Planning District  
1980-2035

DIST MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
49 AVON	802	802	1703	2600	3327	3721	4220	4710	5232	5695	5712	5712
52 AVON	1618	1618	1618	1618	1618	1618	1634	1665	1718	1783	1872	2000
MPA AVON TOTAL	2420	2420	3321	4218	4945	5339	5854	6375	6950	7478	7584	7712
101 BUCK	436	547	736	803	996	1285	2018	2774	3557	4332	5394	6923
MPA BUCK TOTAL	436	547	736	803	996	1285	2018	2774	3557	4332	5394	6923
70 CHAN	781	884	1284	1855	2502	2752	2752	2752	2752	2752	2752	2752
76 CHAN	1754	2649	3211	3974	4531	4702	4919	5131	5358	5612	5632	5632
77 CHAN	134	478	1124	1695	1821	1996	2219	2436	2669	2928	3071	3072
80 CHAN	333	344	912	1373	2587	3743	5210	6648	8183	9898	10302	10304
81 CHAN	327	395	649	961	1268	2660	4424	5966	5996	5997	5997	5997
MPA CHAN TOTAL	3329	4751	7181	9859	12709	15853	19523	22934	24958	27187	27754	27757
1 CTYINU	3682	3682	3682	3682	3682	3682	4260	5393	7292	9634	12846	17468
2 CTYINU	5002	5002	5002	5002	5002	5002	5083	5243	5511	5841	6295	6946
3 CTYINU	558	558	902	902	902	964	1121	1428	2086	3499	5438	8229
10 CTYINU	149	149	149	155	174	174	463	747	1051	1389	1938	2728
11 CTYINU	1493	1519	2668	4287	5642	6220	6896	7559	8268	9059	10341	12186
16 CTYINU	7065	7065	7205	7464	7513	7593	7677	7678	7678	7678	7678	7678
26 CTYINU	3320	3320	3320	3320	3807	4759	5967	7151	8415	9826	11990	12000
37 CTYINU	1587	1587	1587	1587	1587	1587	1718	1974	2403	2933	3660	4705
38 CTYINU	297	458	811	1113	1429	1863	2413	2952	3192	3200	3200	3200
50 CTYINU	669	669	669	669	669	712	821	929	1017	1105	1225	1398
73 CTYINU	138	160	191	273	358	476	776	1256	1753	2245	2920	3891
82 CTYINU	1431	1431	1431	1431	1431	1431	1754	2386	3447	4755	6549	9130
MPA CTYINU TOTAL	25391	25599	27617	29884	32196	34463	38949	44697	52112	61165	74079	89559
14 ELMIRA	762	762	762	921	1055	1148	1378	1604	1845	2115	2551	3180
MPA ELMIRA TOTAL	762	762	762	921	1055	1148	1378	1604	1845	2115	2551	3180
71 GILBRT	577	775	1608	2543	3453	4341	5468	6573	7180	7199	7200	7200
72 GILBRT	554	554	554	554	566	657	842	1023	1217	1433	1783	2288
75 GILBRT	849	849	849	849	849	1018	1447	1868	2451	3029	3821	4960
MPA GILBRT TOTAL	1980	2178	3011	3946	4867	6017	7758	9465	10849	11661	12804	14448

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #2

## ACRES OF RESIDENTIAL DEVELOPMENT

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
	8	GLENDL	774	897	2080	3385	4552	5222	5222	5222	5222	5222	5222
	18	GLENDL	1831	2032	2625	2992	3324	3399	3494	3588	3687	3799	4025
	34	GLENDL	4557	4671	4728	4895	5122	5348	5634	5914	6214	6548	7090
	35	GLENDL	422	1019	1258	1569	1773	2289	2943	3585	4270	5035	6075
	IMPA	GLENDL	TOTAL										
			7584	8619	10691	12841	14772	17294	18309	19393	20603	22367	22830
	51	GOODYR	1692	1692	1692	2137	2840	3752	4908	6042	7253	8604	10223
	IMPA	GOODYR	TOTAL										
			1692	1692	1692	2137	2840	3752	4908	6042	7253	8604	10223
	57	MESA	6368	6710	6976	7571	7801	8678	8678	8678	8678	8678	8678
	58	MESA	1824	1983	2341	2744	3158	3649	4272	4882	5535	6263	7443
	59	MESA	1293	1773	2066	2325	3013	3344	3764	4176	4615	5106	5901
	60	MESA	762	793	1180	1386	1623	1909	2348	2779	3239	3752	4585
	61	MESA	1626	2494	3066	3500	4140	4457	4859	5254	5675	6145	7000
	62	MESA	2170	2275	2770	2994	3191	3401	3669	3930	4210	4522	5029
	63	MESA	1843	2488	3120	4036	4564	4564	4573	4582	4591	4601	4618
	64	MESA	2714	2811	3074	3132	3240	3333	3366	3366	3366	3366	3366
	IMPA	MESA	TOTAL										
			18600	21326	24593	27687	30730	33336	35528	37646	39908	42433	46527
	9	PEORIA	198	444	564	902	1128	2369	3942	5485	7132	8968	9036
	17	PEORIA	2442	3579	6429	7442	7442	7442	7442	7442	7442	7442	7442
	IMPA	PEORIA	TOTAL										
			2640	4023	6993	8344	8570	9811	11384	12927	14574	16410	16478
	30	PV	4674	5310	5310	5425	5529	5529	5610	5689	5773	5867	6020
	IMPA	PV	TOTAL										
			4674	5310	5310	5425	5529	5529	5610	5689	5773	5867	6020
	5	PXX	1402	1402	1402	1402	1402	2565	5514	8406	11494	14941	15598
	6	PXX	2992	2992	3384	3937	4615	5547	6728	7887	9124	10406	10453
	7	PXX	2859	2859	3314	4052	4680	4892	5107	5318	5543	5794	6202
	19	PXX	3785	3785	3785	3827	3892	4020	4183	4342	4513	4703	4873
	20	PXX	2005	2357	2598	2823	3087	3388	3769	4137	4144	4144	4144
	21	PXX	2312	2513	2751	2859	2982	3045	3125	3203	3260	3262	3262
	22	PXX	4602	4602	4856	5183	5484	5670	5906	6133	6137	6138	6138
	23	PXX	4192	4192	4192	4733	5322	5812	6434	7043	7483	7497	7497
	31	PXX	1472	1882	2021	2162	2280	2361	2464	2540	2541	2541	2541
	32	PXX	6326	6416	6462	6462	6462	6462	6467	6472	6477	6482	6491

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #2  
ACRES OF RESIDENTIAL DEVELOPMENT

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
	IMPA PXX	(Continued)											
	33 PXX	4803	4964	5091	5218	5324	5432	5529	5530	5530	5530	5530	5530
	39 PXX	1925	2406	3029	3727	4186	4704	5360	6004	6692	7459	7548	7548
	40 PXX	4641	4901	5078	5079	5079	5098	5130	5162	5196	5234	5295	5384
	41 PXX	3868	3877	3883	3947	3947	3997	4009	4009	4009	4009	4009	4009
	42 PXX	3335	3518	3518	3518	3518	3566	3624	3624	3624	3624	3624	3624
	43 PXX	6702	7022	7022	7022	7078	7078	7078	7078	7078	7078	7078	7078
	45 PXX	3857	3857	3857	3896	3970	3970	3973	3977	3980	3984	3991	4000
	46 PXX	1474	1474	1474	1474	1474	1474	1474	1474	1474	1474	1474	1474
	47 PXX	3611	3611	3611	3611	3611	3611	3611	3611	3611	3611	3611	3611
	53 PXX	743	952	1170	1435	1741	2077	2502	2621	2623	2623	2623	2623
	54 PXX	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457
	55 PXX	321	321	321	321	321	321	321	321	321	321	321	321
	66 PXX	4567	4829	5093	5338	5974	6650	7507	8348	9245	9295	9297	9297
	67 PXX	2136	2466	2952	3615	4673	6137	7992	9812	11754	13923	17440	18742
	78 PXX	777	2272	5404	8031	9168	9168	9168	9168	9168	9168	9168	9168
	IMPA PXX	TOTAL											
		76164	80927	87724	95128	101729	108503	118435	127676	136479	144699	149666	151670
	4 SCOTTS	420	420	420	420	618	962	1348	1726	2130	2581	3312	4364
	24 SCOTTS	2648	2648	2648	2648	2648	2648	2658	2678	2711	2752	2808	2888
	25 SCOTTS	1543	1543	2304	3135	3873	4966	6352	7711	9162	9286	9291	9291
	29 SCOTTS	4128	4916	4916	4916	4916	4916	4916	4916	4916	4916	4916	4916
	44 SCOTTS	5134	5282	5282	5282	5282	5282	5282	5282	5282	5282	5282	5282
	IMPA SCOTTS	TOTAL											
		13873	14810	15571	16402	17338	18775	20557	22313	24201	24818	25609	26741
	12 SURPRS	837	837	837	837	837	837	963	1209	1623	2133	2832	3838
	13 SURPRS	669	669	669	669	669	669	669	669	669	669	669	669
	IMPA SURPRS	TOTAL											
		1506	1506	1506	1506	1506	1506	1632	1878	2292	2802	3501	4507
	56 TEMPE	2563	2563	2650	2777	2777	2777	2779	2781	2783	2785	2789	2794
	65 TEMPE	2765	3216	3337	3515	3594	3594	3600	3605	3610	3616	3626	3640
	69 TEMPE	1610	2515	3138	3878	3971	3978	3985	3993	4002	4011	4026	4048
	IMPA TEMPE	TOTAL											
		6938	8294	9125	10170	10343	10349	10364	10379	10394	10412	10441	10482
	48 TOLLES	640	640	869	1302	1733	1733	1745	1757	1769	1783	1805	1838
	IMPA TOLLES	TOTAL											
		640	640	869	1302	1733	1733	1745	1757	1769	1783	1805	1838

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #2  
ACRES OF RESIDENTIAL DEVELOPMENT

Maricopa County  
by Planning District  
1980-2035

DIST MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
15 YOUNGT	600	600	600	600	600	600	600	600	600	600	600	600
MPA YOUNGT TOTAL	600	600	600	600	600	600	600	600	600	600	600	600
GRAND TOTAL	169229	184002	207304	231173	252457	274256	303537	333064	362907	392967	423396	452205

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #4  
DWELLING UNITS PER ACRE

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
49	AVDN	2.223	3.339	3.505	3.671	3.837	4.004	4.170	4.336	4.502	4.668	4.834	5.000
52	AVDN	1.771	1.775	1.793	1.899	1.970	2.041	2.534	3.027	3.521	4.014	4.507	5.000
	IMPA AVDN	TOTAL											
		1.921	2.293	2.671	2.991	3.226	3.409	3.713	3.994	4.259	4.512	4.753	5.000
101	BUCK	2.892	2.947	3.002	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
	IMPA BUCK	TOTAL											
		2.892	2.947	3.002	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
70	CHAN	2.905	3.500	3.600	3.700	3.800	4.500	4.500	4.500	4.500	4.500	4.500	4.500
76	CHAN	4.782	4.801	4.821	4.841	4.861	4.881	4.901	4.921	4.940	4.960	4.980	5.000
77	CHAN	1.515	3.500	3.600	3.700	3.800	3.900	4.000	4.100	4.200	4.300	4.400	4.500
80	CHAN	2.330	2.482	3.500	3.556	3.611	3.667	3.722	3.778	3.833	3.889	3.944	4.000
81	CHAN	5.394	5.231	5.068	4.905	4.742	4.579	4.416	4.253	4.089	3.926	3.763	3.600
	IMPA CHAN	TOTAL											
		3.848	4.296	4.266	4.257	4.234	4.354	4.317	4.278	4.245	4.224	4.221	4.221
1	CTYINU	.302	.320	.448	.526	.574	2.962	3.051	3.141	3.231	3.321	3.410	3.500
2	CTYINU	.286	.380	.543	.674	.815	.965	1.304	1.644	1.983	2.322	2.661	3.000
3	CTYINU	.226	.376	.588	.794	1.004	1.218	1.432	1.645	1.859	2.073	2.286	2.500
10	CTYINU	.268	.906	1.069	1.339	1.609	1.629	1.941	2.253	2.565	2.876	3.188	3.500
11	CTYINU	1.147	3.500	3.650	3.800	3.950	4.100	4.250	4.400	4.550	4.700	4.850	5.000
16	CTYINU	3.714	4.180	4.257	4.334	4.411	4.488	4.564	4.641	4.718	4.795	4.872	4.949
26	CTYINU	.463	1.170	2.174	3.010	3.500	3.500	3.417	3.333	3.250	3.167	3.083	3.000
37	CTYINU	.498	.576	.684	.733	.906	1.147	1.539	1.931	2.324	2.716	3.108	3.500
38	CTYINU	4.684	4.758	4.832	4.906	4.980	5.055	5.129	5.203	5.277	5.352	5.426	5.500
50	CTYINU	.378	.526	.693	.863	1.037	1.246	1.455	1.664	1.873	2.082	2.291	2.500
73	CTYINU	4.167	4.106	4.045	3.985	3.924	3.864	3.803	3.742	3.682	3.621	3.561	3.500
82	CTYINU	.607	.642	.677	.784	.896	1.408	1.756	2.105	2.454	2.803	3.151	3.500
	IMPA CTYINU	TOTAL											
		1.421	1.843	2.169	2.485	2.735	3.174	3.315	3.418	3.483	3.534	3.594	3.687
14	ELMIRA	1.640	2.371	3.283	3.500	3.688	3.875	4.063	4.250	4.438	4.625	4.813	5.000
	IMPA ELMIRA	TOTAL											
		1.640	2.371	3.283	3.500	3.687	3.875	4.062	4.250	4.437	4.625	4.812	5.000
71	GILBRT	3.996	3.951	3.906	3.861	3.816	3.771	3.725	3.680	3.635	3.590	3.545	3.500
72	GILBRT	1.000	1.565	2.325	2.966	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
75	GILBRT	1.000	1.346	1.790	2.363	2.910	3.500	3.500	3.500	3.500	3.500	3.500	3.500
	IMPA GILBRT	TOTAL											
		1.728	2.328	3.018	3.413	3.621	3.695	3.659	3.625	3.590	3.556	3.525	3.500

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #4  
DWELLING UNITS PER ACRE

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
	8 GLENDL	1.864	3.500	3.550	3.600	3.650	4.000	4.000	4.000	4.000	4.000	4.000	4.000
	18 GLENDL	3.334	3.531	3.728	3.925	4.122	4.319	4.516	4.712	4.909	5.106	5.303	5.500
	34 GLENDL	7.223	7.249	7.274	7.299	7.324	7.349	7.374	7.399	7.425	7.450	7.475	7.500
	35 GLENDL	3.505	3.513	3.522	3.531	3.539	3.548	3.557	3.565	3.574	3.583	3.591	3.600
	MPA GLENDL TOTAL												
		5.531	5.540	5.237	5.077	5.017	5.105	5.128	5.153	5.176	5.198	5.222	5.308
	51 GOODYR	.825	1.075	2.758	3.500	3.625	3.750	3.875	4.000	4.125	4.250	4.375	4.500
	MPA GOODYR TOTAL												
		.825	1.075	2.758	3.500	3.625	3.750	3.875	4.000	4.125	4.250	4.375	4.500
	57 MESA	5.568	5.546	5.525	5.503	5.481	5.460	5.438	5.417	5.395	5.373	5.352	5.330
	58 MESA	3.306	3.223	3.140	3.057	2.973	2.890	2.807	2.723	2.640	2.557	2.473	2.390
	59 MESA	3.835	3.785	3.734	3.684	3.633	3.583	3.532	3.482	3.431	3.381	3.330	3.280
	60 MESA	5.773	5.473	5.172	4.872	4.572	4.272	3.971	3.671	3.371	3.071	2.770	2.470
	61 MESA	3.911	3.998	4.084	4.170	4.256	4.343	4.429	4.515	4.601	4.688	4.774	4.860
	62 MESA	4.354	4.474	4.594	4.713	4.833	4.952	5.072	5.192	5.311	5.431	5.550	5.670
	63 MESA	3.803	3.995	4.186	4.378	4.569	5.121	5.252	5.384	5.515	5.647	5.778	5.910
	64 MESA	3.626	3.739	3.852	3.965	4.078	4.191	4.304	4.418	4.531	4.644	4.757	4.870
	MPA MESA TOTAL												
		4.489	4.466	4.467	4.484	4.479	4.548	4.516	4.481	4.441	4.393	4.315	4.215
	9 PEORIA	2.000	2.136	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
	17 PEORIA	2.149	2.149	2.149	2.322	2.668	2.825	2.825	2.825	2.825	2.825	2.825	2.825
	MPA PEORIA TOTAL												
		2.138	2.148	2.258	2.450	2.778	2.988	3.059	3.112	3.155	3.194	3.195	3.195
	30 PV	.917	.970	1.009	1.064	1.118	1.118	1.182	1.245	1.309	1.373	1.436	1.500
	MPA PV TOTAL												
		.917	.970	1.009	1.064	1.118	1.118	1.182	1.245	1.309	1.373	1.436	1.500
	5 PXX	1.648	1.928	2.235	2.552	2.972	3.500	3.692	3.885	4.077	4.269	4.462	4.654
	6 PXX	2.585	3.273	3.500	3.541	3.582	3.623	3.664	3.704	3.745	3.786	3.827	3.868
	7 PXX	2.109	3.173	3.500	3.592	3.684	3.776	3.868	3.959	4.051	4.143	4.235	4.327
	19 PXX	3.258	3.356	3.461	3.531	3.602	3.672	3.743	3.813	3.884	3.954	4.025	4.095
	20 PXX	3.546	3.623	3.699	3.775	3.851	3.928	4.004	4.080	4.156	4.233	4.309	4.385
	21 PXX	5.130	5.185	5.240	5.294	5.349	5.403	5.458	5.513	5.567	5.622	5.677	5.731
	22 PXX	3.222	3.477	3.519	3.561	3.604	3.646	3.688	3.730	3.772	3.815	3.857	3.899
	23 PXX	2.001	2.716	3.349	3.500	3.500	3.500	3.477	3.454	3.431	3.408	3.385	3.362
	31 PXX	3.878	3.834	3.789	3.745	3.700	3.656	3.611	3.567	3.522	3.478	3.433	3.389
	32 PXX	4.050	4.123	4.195	4.320	4.472	4.624	4.662	4.700	4.738	4.776	4.814	4.852

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #4  
DWELLING UNITS PER ACRE

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
IMPA PXX (Continued)													
	33 PXX	5.098	5.176	5.255	5.333	5.411	5.489	5.567	5.645	5.724	5.802	5.880	5.958
	39 PXX	3.964	3.942	3.919	3.897	3.875	3.853	3.830	3.808	3.786	3.763	3.741	3.719
	40 PXX	4.416	4.473	4.530	4.587	4.643	4.546	4.629	4.711	4.794	4.877	4.959	5.042
	41 PXX	5.674	5.769	5.863	5.957	6.052	6.146	6.240	6.335	6.429	6.524	6.618	6.712
	42 PXX	6.844	7.120	7.759	8.814	9.395	9.876	9.876	9.876	9.876	9.876	9.876	9.876
	43 PXX	4.113	4.150	4.367	4.522	4.527	4.527	4.527	4.527	4.527	4.527	4.527	4.527
	45 PXX	6.015	6.079	6.143	6.289	6.435	6.701	6.827	6.953	7.079	7.205	7.331	7.457
	46 PXX	5.974	8.888	9.913	11.685	12.603	12.886	12.966	13.046	13.126	13.207	13.287	13.367
	47 PXX	4.866	4.748	4.770	4.706	4.631	4.674	4.741	4.808	4.875	4.942	5.010	5.077
	53 PXX	2.614	3.500	3.774	4.048	4.322	4.596	4.870	5.144	5.419	5.693	5.967	6.241
	54 PXX	3.182	3.010	2.909	2.759	2.675	2.923	3.003	3.082	3.162	3.242	3.322	3.402
	55 PXX	9.956	6.818	4.875	5.053	5.235	5.421	6.193	6.965	7.736	8.508	9.280	10.052
	66 PXX	3.598	3.685	3.772	3.859	3.946	4.033	4.120	4.207	4.294	4.381	4.468	4.555
	67 PXX	2.428	2.410	2.392	2.374	2.356	2.338	2.320	2.302	2.284	2.266	2.248	2.230
	78 PXX	3.318	3.500	3.508	3.517	3.584	3.584	3.584	3.584	3.584	3.584	3.584	3.584
	IMPA PXX TOTAL	4.124	4.273	4.365	4.435	4.459	4.485	4.457	4.444	4.442	4.448	4.452	4.489
	4 SCOTTS	.302	.494	1.483	3.460	3.528	3.595	3.663	3.730	3.798	3.865	3.933	4.000
	24 SCOTTS	.751	.926	1.010	1.070	1.130	1.142	1.619	2.095	2.571	3.047	3.524	4.000
	25 SCOTTS	.397	2.916	3.500	3.556	3.611	3.667	3.722	3.778	3.833	3.889	3.944	4.000
	29 SCOTTS	2.825	2.918	2.961	2.971	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975
	44 SCOTTS	5.544	5.552	5.258	5.305	5.357	5.449	5.449	5.449	5.449	5.449	5.449	5.449
	IMPA SCOTTS TOTAL	3.089	3.433	3.448	3.540	3.581	3.628	3.711	3.791	3.867	3.944	4.021	4.098
	12 SURPRS	.200	.483	.743	.929	1.338	2.378	2.815	3.252	3.689	4.126	4.563	5.000
	13 SURPRS	1.369	1.467	1.995	2.583	2.956	3.100	3.417	3.733	4.050	4.367	4.683	5.000
	IMPA SURPRS TOTAL	.719	.920	1.299	1.664	2.057	2.699	3.062	3.423	3.794	4.183	4.586	5.000
	56 TEMPE	6.236	7.795	7.876	7.956	8.472	8.484	8.503	8.522	8.542	8.561	8.581	8.600
	65 TEMPE	5.948	6.017	6.085	6.153	6.222	6.222	6.301	6.381	6.461	6.541	6.620	6.700
	69 TEMPE	4.991	5.101	5.211	5.320	5.200	6.200	6.200	6.200	6.200	6.200	6.200	6.200
	IMPA TEMPE TOTAL	5.833	6.288	6.304	6.328	6.818	6.820	6.853	6.885	6.918	6.950	6.982	7.013
	48 TOLLES	2.128	2.377	3.500	3.506	3.511	3.511	3.518	3.524	3.531	3.537	3.544	3.550
	IMPA TOLLES TOTAL	2.128	2.377	3.500	3.506	3.511	3.511	3.518	3.524	3.531	3.537	3.544	3.550

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #4  
 DWELLING UNITS PER ACRE

Maricopa County  
 by Planning District  
 1980-2035

DIST MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
15 YOUNGT	2.372	2.404	2.455	2.506	2.506	2.506	2.506	2.506	2.506	2.506	2.506	2.506
IMPA YOUNGT TOTAL	2.372	2.404	2.455	2.506	2.506	2.506	2.506	2.506	2.506	2.506	2.506	2.506
GRAND TOTAL	3.531	3.768	3.886	3.998	4.087	4.189	4.196	4.201	4.204	4.212	4.217	4.236

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #5  
 DWELLING UNITS  
 Maricopa County  
 by Planning District  
 1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
49	AVON	1783	2678	5971	9544	12766	14896	17595	20419	23555	26583	27611	28560
52	AVON	2866	2872	2900	3073	3188	3303	4141	5042	6048	7156	8436	9999
	MPA AVON TOTAL	4649	5550	8871	12617	15954	18198	21736	25461	29603	33739	36047	38559
101	BUCK	1262	1612	2211	2811	3485	4497	7063	9709	12449	15161	18880	24231
	MPA BUCK TOTAL	1262	1612	2211	2811	3485	4497	7063	9709	12449	15161	18880	24231
70	CHAN	2269	3095	4624	6865	9506	12384	12384	12384	12384	12384	12384	12384
76	CHAN	8387	12720	15482	19240	22025	22950	24106	25249	26472	27836	28048	28160
77	CHAN	203	1673	4048	6271	6921	7786	8874	9988	11208	12591	13514	13824
80	CHAN	776	853	3192	4882	9341	13725	19392	25114	31369	38491	40636	41216
81	CHAN	1176	2069	3289	4716	6013	12178	19536	25372	24520	23546	22568	21589
	MPA CHAN TOTAL	12811	20410	30635	41973	53806	69024	84292	98107	105954	114848	117150	117173
1	CTYINU	1112	1177	1650	1938	2114	10905	12998	16939	23558	31989	43807	61136
2	CTYINU	1429	1901	2716	3373	4077	4828	6631	8617	10927	13563	16749	20839
3	CTYINU	126	210	530	716	906	1174	1604	2350	3877	7253	12434	20571
10	CTYINU	40	135	159	207	280	283	900	1684	2695	3996	6179	9548
11	CTYINU	1712	5316	9740	16289	22287	25500	29308	33261	37618	42575	50154	60932
16	CTYINU	26239	29531	30671	32346	33139	34076	35043	35636	36227	36817	37408	37998
26	CTYINU	1538	3886	7217	9993	13325	16658	20387	23835	27348	31116	36970	35999
37	CTYINU	791	914	1085	1163	1438	1820	2644	3812	5584	7966	11374	16468
38	CTYINU	1391	2177	3917	5460	7118	9417	12377	15362	16846	17123	17362	17600
50	CTYINU	253	352	463	577	694	887	1195	1545	1905	2301	2807	3496
73	CTYINU	575	655	774	1087	1403	1838	2951	4700	6454	8130	10396	13617
82	CTYINU	869	918	968	1123	1283	2014	3080	5024	8458	13326	20638	31957
	MPA CTYINU TOTAL	36075	47172	59891	74271	88064	109402	129117	152766	181498	216155	266277	330163
14	ELMIRA	1250	1807	2502	3224	3891	4447	5599	6817	8188	9780	12278	15899
	MPA ELMIRA TOTAL	1250	1807	2502	3224	3891	4447	5599	6817	8188	9780	12278	15899
71	GILBRT	2018	3061	6283	9819	13174	16370	20372	24193	26102	25847	25525	25200
72	GILBRT	554	867	1288	1643	1980	2300	2947	3582	4259	5015	6242	8007
75	GILBRT	849	1142	1519	2006	2471	3564	5066	6538	8580	10601	13372	17360
	MPA GILBRT TOTAL	3421	5070	9090	13469	17625	22234	28385	34312	38942	41463	45139	50567

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #5

## DWELLING UNITS

Maricopa County  
by Planning District  
1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
	8 GLENDL	1443	3139	7385	12185	16616	20888	20888	20888	20888	20888	20888	20888
	18 GLENDL	6105	7177	9787	11744	13702	14680	15779	16907	18103	19397	21102	22136
	34 GLENDL	32917	33854	34390	35730	37517	39303	41547	43764	46136	48782	52999	56272
	35 GLENDL	1479	3581	4430	5538	6276	8122	10469	12781	15260	18037	21818	21888
	MPA GLENDL TOTAL	41944	47751	55992	65197	74111	82994	88683	94340	100387	107104	116807	121184
	51 GOODYR	1396	1819	4667	7481	10295	14070	19019	24168	29917	36568	44694	46003
	MPA GOODYR TOTAL	1396	1819	4667	7481	10295	14070	19019	24168	29917	36568	44694	46003
	57 MESA	35457	37218	38543	41663	42763	47380	47193	47005	46817	46629	46441	46254
	58 MESA	6031	6390	7349	8387	9388	10545	11989	13296	14611	16011	18410	20903
	59 MESA	4959	6710	7714	8565	10947	11982	13296	14539	15836	17262	19655	23113
	60 MESA	4399	4338	6102	6751	7420	8153	9324	10201	10917	11521	12701	14284
	61 MESA	6360	9970	12522	14594	17622	19356	21521	23720	26111	28803	32972	34018
	62 MESA	9449	10177	12726	14110	15420	16845	18607	20405	22361	24560	27911	32643
	63 MESA	7009	9938	13063	17668	20855	23372	24019	24667	25321	25984	26686	27436
	64 MESA	9840	10509	11839	12418	13213	13971	14488	14869	15250	15631	16012	16392
	MPA MESA TOTAL	83504	95250	109858	124157	137628	151604	160436	168702	177223	186401	200787	215044
	9 PEDRIA	396	948	1974	3159	3948	8291	13798	19197	24962	31389	31625	31626
	17 PEDRIA	5249	7693	13818	17283	19857	21026	21026	21026	21026	21026	21026	21026
	MPA PEORIA TOTAL	5645	8641	15792	20441	23805	29317	34823	40223	45988	52415	52651	52652
	30 PV	4287	5152	5358	5770	6182	6182	6629	7085	7557	8054	8647	9360
	MPA PV TOTAL	4287	5152	5358	5770	6182	6182	6629	7085	7557	8054	8647	9360
	5 PXX	2310	2703	3133	3577	4195	8977	20360	32654	46860	63790	69593	72607
	6 PXX	7736	9794	11843	13940	16529	20094	24649	29216	34172	39398	40003	40431
	7 PXX	6030	9073	11601	14556	17240	18469	19751	21055	22456	24006	26265	29374
	19 PXX	12330	12702	13098	13513	14018	14763	15655	16558	17526	18596	19613	19960
	20 PXX	7110	8540	9609	10658	11889	13306	15092	16879	17224	17541	17857	18173
	21 PXX	11861	13029	14415	15138	15952	16455	17058	17660	18152	18340	18518	18697
	22 PXX	14827	16001	17088	18458	19764	20673	21783	22878	23153	23413	23672	23931
	23 PXX	8390	11386	14039	16565	18628	20343	22371	24327	25675	25551	25380	25208
	31 PXX	5709	7215	7659	8097	8437	8632	8899	9059	8951	8838	8725	8612
	32 PXX	25620	26448	27112	27914	28900	29884	30151	30418	30687	30959	31248	31558

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #5  
 DWELLING UNITS  
 Maricopa County  
 by Planning District  
 1980-2035

DIST	MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
MPA PXX (Continued)													
	33 PXX	24487	25695	26749	27828	28810	29815	30784	31219	31652	32084	32516	32948
	39 PXX	7629	9485	11872	14526	16221	18122	20532	22863	25331	28070	28235	28068
	40 PXX	20493	21920	23000	23293	22668	23174	23746	24320	24909	25524	26261	27145
	41 PXX	21948	22366	22766	23512	23886	24569	25020	25399	25777	26155	26534	26912
	42 PXX	22826	25046	27297	31008	33053	35221	35790	35794	35794	35794	35794	35794
	43 PXX	27564	29141	30661	31749	32040	32040	32040	32040	32040	32040	32040	32040
	45 PXX	23199	23444	23694	24500	25547	26604	27127	27650	28176	28706	29255	29827
	46 PXX	12460	13100	14612	17223	18577	18994	19112	19230	19348	19467	19585	19703
	47 PXX	17568	17144	17222	16993	16720	16874	17117	17360	17603	17845	18088	18331
	53 PXX	1941	3331	4415	5807	7525	9545	12186	13484	14214	14934	15653	16372
	54 PXX	4637	4386	4239	4020	3898	4259	4375	4491	4608	4724	4841	4957
	55 PXX	3199	2191	1567	1624	1682	1742	1990	2238	2486	2734	2982	3230
	66 PXX	16430	17794	19211	20597	23574	26820	30930	35119	39698	40721	41538	42347
	67 PXX	5185	5942	7060	8580	11010	14347	18541	22585	26846	31549	39206	41795
	78 PXX	2577	7952	18961	28245	32858	32858	32858	32858	32858	32858	32858	32858
	MPA PXX TOTAL	314066	345829	382920	421920	453620	486581	527915	567355	606197	643636	666261	680877
MPA SCOTTSS													
	4 SCOTTSS	127	208	623	1453	2180	3460	4938	6439	8089	9975	13023	17454
	24 SCOTTSS	1989	2452	2675	2834	2993	3025	4303	5610	6970	8386	9893	11552
	25 SCOTTSS	612	4500	8065	11146	13985	18208	23642	29129	35120	36114	36648	37164
	29 SCOTTSS	11662	14346	14558	14605	14628	14628	14628	14628	14628	14628	14628	14628
	44 SCOTTSS	28463	29330	27776	28026	28298	28786	28786	28786	28786	28786	28786	28786
	MPA SCOTTSS TOTAL	42853	50836	53697	58064	62084	68107	76296	84591	93592	97887	102977	109583
MPA SURPRS													
	12 SURPRS	167	404	622	777	1120	1990	2710	3933	5987	8800	12922	19191
	13 SURPRS	916	981	1335	1728	1978	2074	2286	2498	2710	2921	3133	3345
	MPA SURPRS TOTAL	1083	1386	1956	2506	3097	4064	4996	6431	8696	11721	16056	22536
MPA TEMPE													
	56 TEMPE	15984	19979	20870	22094	23527	23558	23629	23699	23771	23845	23931	24031
	65 TEMPE	16447	19347	20303	21627	22363	22362	22682	23001	23323	23651	24004	24388
	69 TEMPE	8035	12830	16352	20633	24622	24661	24710	24758	24810	24868	24961	25095
	MPA TEMPE TOTAL	40466	52156	57525	64354	70511	70581	71021	71459	71904	72363	72896	73514
MPA TOLLES													
	48 TOLLES	1362	1521	3043	4564	6086	6086	6139	6191	6246	6307	6398	6524
	MPA TOLLES TOTAL	1362	1521	3043	4564	6086	6086	6139	6191	6246	6307	6398	6524

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.

TABLE #5  
 DWELLING UNITS  
 Maricopa County  
 by Planning District  
 1980-2035

DIST MPA	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
15 YOUNGT	1423	1442	1473	1504	1504	1504	1504	1504	1504	1504	1504	1504
MPA YOUNGT TOTAL	1423	1442	1473	1504	1504	1504	1504	1504	1504	1504	1504	1504
GRAND TOTAL	597497	693402	805480	924321	1031746	1148889	1273652	1399217	1525841	1655101	1785442	1915368

SOURCE: Mountain West Research - Southwest, Inc., 21 July 1982.





Table 1  
 Demographic and Land Use Projections for Traffic Analysis Zones within the  
 City of Phoenix and the Phoenix Metropolitan Development Area

TAZ NO.	Total Population			Total Dwelling Units			Total Employment			Total Residential Acres			Total Employment Acres		
	1980	1990	2005	1980	1990	2005	1980	1990	2005	1980	1990	2005	1980	1990	2005
541	269	235	246	104	98	110	627	660	795	17	15	16	95	102	123
543	82	48	9	32	20	4	1641	244	315	4	3	1	46	71	101
547	305	270	90	86	80	34	2933	3471	4000	28	26	11	144	181	285
548	134	162	194	103	130	155	13033	14255	15263	25	30	38	125	138	160
549	48	0	0	12	0	0	394	446	510	6	0	0	0	0	0
577/8	0	0	121	0	0	60	2570	2700	3420	0	0	15	168	326	427
499	135	52	0	58	21	0	1883	2150	2260	10	4	0	38	48	52
501	297	170	52	202	120	58	29	60	72	31	19	10	34	55	64
502	14	0	0	6	0	0	223	235	260	3	0	0	71	53	74
506	8	10	8	5	5	3	323	409	488	1	1	1	45	67	77
507	64	75	48	34	31	17	1500	1900	2000	36	36	18	110	84	357
392	0	0	0	0	0	0	141	152	142	0	0	0	7	7	7
441	0	0	0	0	0	0	848	940	966	0	0	0	0	0	0
578	307	238	47	84	70	15	15	200	1300	66	59	20	5	70	415
574A	133	104	40	47	35	15	60	210	800	34	29	13	25	80	225
574B	55	41	19	15	12	6	120	300	800	30	26	12	475	540	670
575	544	470	1450	219	200	500	9	10	1200	200	181	221	4	4	172
576	192	184	663	77	72	260	35	35	2000	54	144	180	6	6	240
577A	63	49	13	25	17	5	682	815	1035	48	35	9	90	108	137
578A	15	11	0	4	3	0	2069	2679	4020	8	6	0	59	467	774
577/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
578/9	250	106	0	97	45	0	57	25	30	12	15	0	38	55	70
571/9	610	602	1765	218	214	788	56	35	10	47	48	168	106	106	10
580	1213	1343	4105	300	480	1846	453	2093	3754	60	72	119	69	96	100
581	977	1087	4002	445	460	1810	466	1171	3154	78	80	118	70	87	124
582	1050	1124	4375	306	365	2125	540	760	1280	35	45	170	65	237	280
583	1323	1360	1808	386	402	628	274	388	611	94	96	116	28	30	40
584	777	812	3072	325	377	1787	364	495	620	159	167	311	29	36	42
585	1147	995	945	525	535	525	1902	4380	7230	57	57	57	200	348	528
625	89	710	2364	36	376	1375	4	15	8	25	153	291	2	15	28
626	3322	3440	4225	846	1020	1503	213	543	915	293	289	394	44	62	91
627	17	726	1841	7	285	713	16	66	149	7	132	255	40	43	110
628	2270	2043	2229	543	652	783	75	295	525	118	132	166	30	83	130
629	4560	4395	4594	1207	1632	2065	374	624	875	287	459	534	96	101	106
630	2212	2350	2702	746	770	1208	511	1787	3405	127	131	151	67	98	128
631	2394	2666	3406	806	942	1311	498	1516	3789	162	175	197	88	93	105
632	3408	3682	3830	482	1150	1300	340	518	853	270	288	324	56	109	169
654	685	933	472	176	264	1834	83	171	269	183	252	1652	18	22	36
655	69	782	1803	27	308	726	52	65	82	12	77	348	15	16	27
683	131	195	239	53	68	94	32	40	43	66	78	94	0	0	0
911	386	347	0	172	183	0	670	3018	4671	22	23	23	346	430	492

*File (continued)*

TAZ NO.	Total Population			Total Dwelling Units			Total Employment		Total Residential Acres			Total Employment Acres		
	1980	1990	2005	1980	1990	2005	1980	2005	1980	1990	2005	1980	1990	2005
1	596	1221	0	342	0	0	828	950	75	0	40	67	100	
2	545	728	594	207	198	250	442	472	45	44	52	69	74	
3														
4														
5														
6														
7														
8														
9														
10														
11	Total	31,449	32,411	55,981	9,880	11,768	23,712	35,978	51,521	77,886	3,087	3,627	6,102	
12	Percent Increase		3.1%	78%		19.1%	140%		43.1%	116.4%		175%	97.7%	
13	from 1980													
14			(3.1% / yr)			2.4%								
15														
16														
17	MOA	13,387	17,500	28,929	5,623	5,902	11,305	2360	11,300	20,368				
18														
19														
20														
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22														
23														
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37														
38														
39														
40														

Table 2  
Projected Population, Employment and Dwelling Units  
City of Mesa, Planning Zones within  
Rio Salado Development District

District	Zone	Population			Dwelling Units	Employment				
		1980	1990	2005		1980	1990	2005		
57	513	223	3200	39119	519	1100	1474	900	800	672
	514	1357	1500	2468	619	700	1123	100	300	380
	515	1422	1600	2237	647	600	1018	0	200	128
	516	829	2400	3045	377	1000	1198	100	100	179
	556	4684	4700	6492	2005	1800	2414	200	400	619
58	401	32	100	3116	13	100	111	0	200	321
	402	143	200	185	58	100	163	0	200	547
	449	1766	1900	3770	629	900	1670	500	500	500
	450	777	900	1314	250	300	526	200	500	722
59	403	203	400	1665	119	100	1608	300	800	16200
Total Rio Salado Development District		13,387	17,500	28,889	5623	5900	11355	2350	11300	26268

Source: City of Mesa Planning Department

Demographic and Land Use Administration of Rio Grande Development District

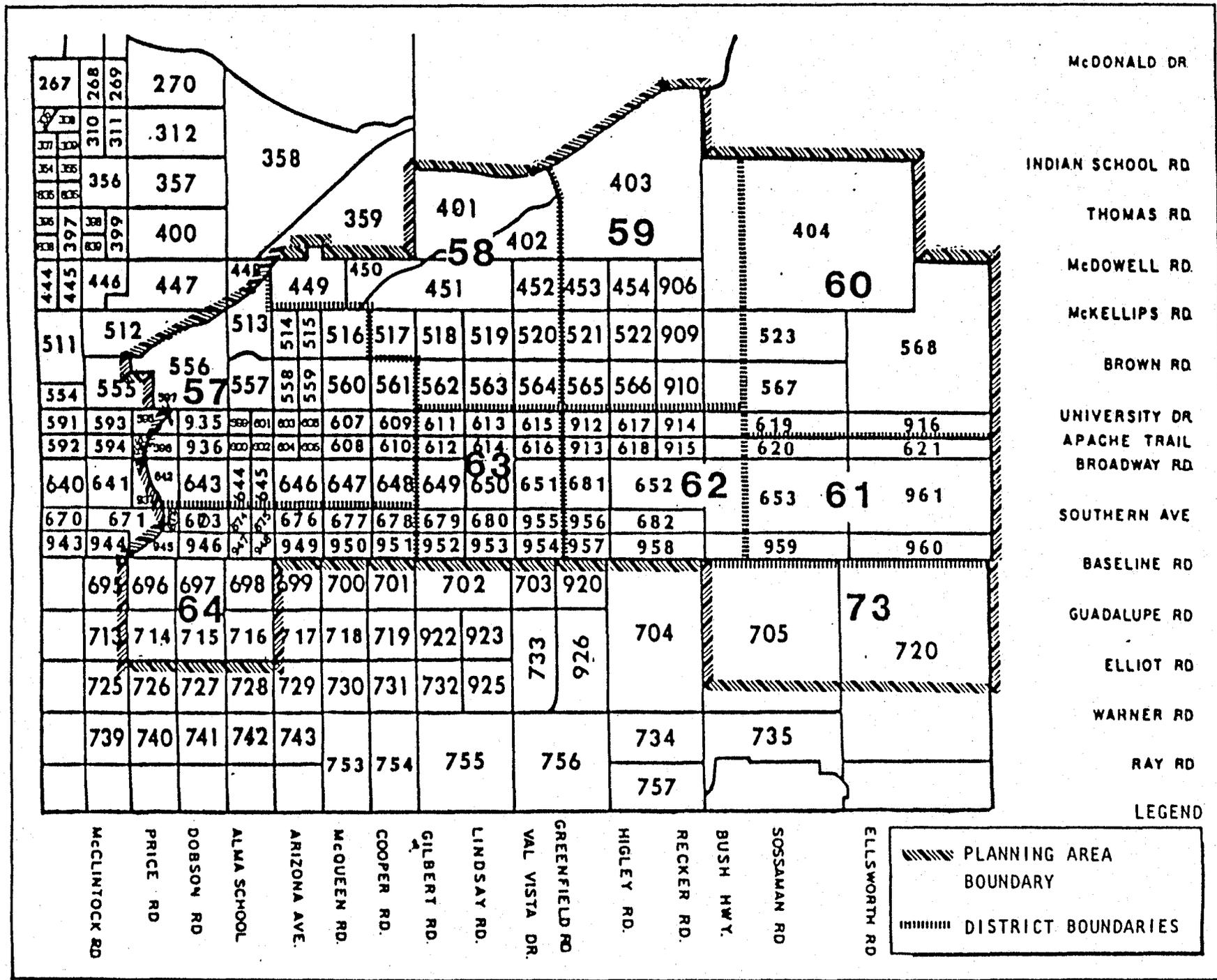
Table 3  
Population and Occupied Units  
Land Use

Section	Population		Occupied Units		Land Use							
	1981	Structure	1981	Structure	Industrial	Commercial	Service	Residential	Developed	Undeveloped	Developed	Undeveloped
9	3	0	1	0	0	34	0	44	57	0	0	0
10	1244	2612	417	1028	22	1	43	0	0	0	64	58
11	2300	3684	933	1496	26	41	22	47	0	0	107	62
13	164	0	88	0	146	127	25	1	8	0	0	0
14	0	0	0	0	0	0	0	11	0	0	0	0
15	3359	3581	1242	3611	18	15	19	14	0	0	21	0
16	4759	4850	2346	2302	11	89	9	11	0	0	195	183
17	910	886	357	337	62	75	4	9	0	0	46	9
18	888	678	385	276	0	0	0	6	16	0	44	10
total	13,637	16,301	4859	5760	265	382	122	86	161	0	486	321
<p>FSO: 28 persons/acre 13 acre/acre 2.2 persons/acre</p> <p>1) Statistical Report Temp '81, Temp Planning Division</p> <p>2) Land Use Inventory '82, Temp Planning Division</p>												

1980 1990 City

MESA PLANNING AREA DISTRICTS AND ZONES

Figure A-1



Projected Population - D.U. + G. plus  
No. of Jobs Development District

	Population			1990	Dwelling Units		Employment			Emp. Area		2005
	1980	1990	2005		1980	1990	2005	1980	1990	2005	1980	
Phoenix	31,449	33,411	55,981	7,830	11,768	23,712	35,998	51,531	77,886	3363	4736	7238
Mesa	13,387	17,500	28,839	5,633	5,950	11,355	2,300	11,300 <sup>1)</sup>	20,348	N/A	N/A	N/A
Tempe	13,637	14,000	23,000	6,314	7,620	9,650	N/A	N/A	N/A	N/A	N/A	N/A
<u>Subtotal P.D. District</u>	<u>58,473</u>	<u>64,911</u>	<u>107,820</u>	<u>19,777</u>	<u>25,288</u>	<u>44,717</u>	<u>38,298</u>	<u>62,831</u>	<u>97,612</u>	<u>3363</u>	<u>4736</u>	<u>7238</u>
Absolute Change from prior period	-	7438	41,905		3181	22,300	-	29,523	34,997			
Percent Change	-	+12.7%	+63.6%		+15.9%	+100.0%	-	+46.4%	+55.4%			
Annual Av. Change	-	+1.3%	+4.2%		1.3%	4.1%	-	8.6%	+3.7%			
<u>Maricopa County</u>	<u>1,508,030</u>	<u>2,033,220</u>	<u>2,445,000</u>	<u>517,497</u>	<u>805,150</u>	<u>1,148,889</u>	<u>709,841</u>	<u>909,500</u>	<u>1,415,285</u>			
absolute change	-	525,190	913,780		-	297,639	-	207,661	705,444			
Percent Δ	-	+34.6%	+44.9%		-	+37.1%	-	+22.8%	+49.8%			
annual av. % Δ	-	+3.5%	+4.9%		-	+3.5%	-	+3.2%	+4.9%			
change			1990-2005									
			+34.8%									
			+3.0%									

<sup>1)</sup> inclusion of 2000 employees at Hughes Helicopters Plant in Mesa



Community-Based Groups in Pheonix

1. Area II Councils  
Mrs. Jimmie Ashley  
1732 West Cocopah  
Phoenix, Arizona 85007
2. Matthew-Henson Tenant Council  
Mrs. Seville  
1603-A South 9th Avenue  
Phoenix, Arizona 85007
3. Marcos De Niza Tenant Council  
Mr. William Young  
305 West Pima  
Phoenix, Arizona 85003
4. Watkins Neighborhood Council  
Mr. Lonnie Walters  
1246 West Magnolia  
Phoenix, Arizona 85007
5. Ojos De La Comunidad  
1300 South 10th Street  
Phoenix, Arizona 85034
6. Valle Del Sol  
Mr. Pete Garcia  
1209 South 1st Avenue  
Phoenix, Arizona 85003
7. Golden Gate Settlement  
Mr. Hughes  
1701 East Grant  
Phoenix, Arizona 85034
8. Primera Iglesia Metodista Unida  
701 South 1st Street  
Phoenix, Arizona 85004
9. El Rinconcito Center  
1600 East Tonto  
Phoenix, Arizona 85034
10. Senior Citizens East  
1818 South 16th Street  
Phoenix, Arizona 85034
11. C-PAC  
Mr. Manual Canisales  
3029 East Roosevelt  
Phoenix, Arizona 85008
12. Shiloh Baptist Church  
901 West Buckeye  
Phoenix, Arizona 85007
13. Human Resources Center #3  
Advisory Board  
1818 South 16th Street  
Phoenix, Arizona 85034
14. MEPCO  
Ms. Kathy Frischman  
546 East Osborn Road  
Phoenix, Arizona 85012
15. Arizona Statewide Client Council  
P.O. Box 21395  
Phoenix, Arizona 85036
16. Behavioral Health Advocates  
1818 South 16th Street  
Phoenix, Arizona 85034
17. Arizona Welfare Rights  
1818 South 16th Street  
Phoenix, Arizona 85034
18. Rio Vista Homeowners Association  
2230 South 15th Street  
Phoenix, Arizona 85034
19. Sacred Heart Parish  
1625 East Tonto  
Phoenix, Arizona 85034
20. Church of Christ  
43 West Broadway  
Phoenix, Arizona 85004
21. Union Baptist Church  
2760 East Mobile Lane  
Phoenix, Arizona 85040
22. Willow Grove Baptist Church  
3244 South 40th Street  
Phoenix, Arizona 85040
23. Southside Church of Christ  
43 West Broadway  
Phoenix, Arizona 85004
24. Second National Baptist Church  
2608 East Jones  
Phoenix, Arizona 85040
25. Phoenix Client Council  
1818 South 16th Street  
Phoenix, Arizona 85034

26. St. Mark Baptist Church  
1918 East Roeser  
Phoenix, Arizona 85040
27. St. Luke Church of God in Christ  
2502 East Wood  
Phoenix, Arizona 85040
28. Mt. Calvary Baptist Church  
1246 South 11th Avenue  
Phoenix, Arizona 85007
29. Southminster Presbyterian Church  
1923 East Broadway  
Phoenix, Arizona 85040
30. Bethel Baptist Church  
4205 South 20th Place  
Phoenix, Arizona 85040
31. First New Life Missionary Baptist  
1504 West Corona  
Phoenix, Arizona 85041
32. New Home Baptist Church  
1134 West Sherman  
Phoenix, Arizona 85007
33. Fellowship Baptist Church  
2536 East Pueblo  
Phoenix, Arizona 85040
34. Elder Raymond Walker  
5252 South 20th Place  
Phoenix, Arizona 85040
35. Calvary Tabernacle Assembly of God  
4401 South 7th Place  
Phoenix, Arizona 85040
36. Emmanuel Church of the Nazarene  
525 East Broadway  
Phoenix, Arizona 85040
37. First Pentecostal  
2701 East Marguerite  
Phoenix, Arizona 85040
38. South Phoenix Foursquare Gospel  
4817 South 9th Street  
Phoenix, Arizona 85040
39. Shiloh Apostolic  
1921 East Wood  
Phoenix, Arizona 85040
40. Emmanuel Church of God in Christ  
1537 West Buckeye  
Phoenix, Arizona 85007
41. Human Resources Center #2  
1250 South 7th Avenue  
Phoenix, Arizona 85007
42. Phoenix South Mental Health Ctr.  
1424 South 7th Avenue  
Phoenix, Arizona 85007
43. Phoenix Urban League  
1402 South 7th Avenue  
Phoenix, Arizona 85007
44. Presbyterian Service Center  
34 East Roeser  
Phoenix, Arizona 85040
45. Human Resources Center #1  
4732 South Central  
Phoenix, Arizona 85040
46. Chicanos Por La Causa  
1112 East Buckeye  
Phoenix, Arizona 85034
47. Wesley Community Center  
1300 South 10th Street  
Phoenix, Arizona 85034
48. Valley Christian Center  
1326 West Hadley  
Phoenix, Arizona 85007
49. 7th Avenue Primary Care Center  
1407 South 9th Avenue  
Phoenix, Arizona 85007
50. Elks Lodge  
1007 South 7th Avenue  
Phoenix, Arizona 85007
51. Tanner Chapel Nursing Home  
2150 East Broadway  
Phoenix, Arizona 85040

52. Bob's Rose Room  
903 West Watkins  
Phoenix, Arizona 85007
53. Bethune School  
1510 South 15th Avenue  
Phoenix, Arizona 85007
54. St. Joseph's Grant Lodge  
902 West Yuma  
Phoenix, Arizona 85007
55. American Legion Post 65  
1618 East Broadway  
Phoenix, Arizona 85040
56. South Phoenix Planning Committee  
212 East Alta Vista  
Phoenix, Arizona 85040
57. Target Area B Citizen's  
Advisory Committee  
c/o Jack Caroline  
438 East Southern  
Phoenix, Arizona 85040
58. N.O.D. Advisory Committee  
1250 South 7th Avenue  
Phoenix, Arizona 85007
59. Human Resources Commission  
302 West Washington  
Phoenix, Arizona 85003
60. South Mountain Businessmen Assoc.  
c/o Kennedy Tire Company  
621 East Broadway  
Phoenix, Arizona 85040