

PLASENCIA

*Col. Lowry
not for public release
D. W. Hutton*

PART ONE

- SCOPE AND OBJECTIVES
- POPULATION AND LAND USE

A COMPREHENSIVE PLAN FOR

CHANDLER - ARIZONA

PREPARED BY THE MARICOPA COUNTY PLANNING & ZONING DEPARTMENT

POPULATION AND LAND USE

PART OF
A COMPREHENSIVE PLAN FOR
CHANDLER, ARIZONA

Prepared For
THE CITY OF CHANDLER, ARIZONA

By
THE MARICOPA COUNTY PLANNING AND ZONING DEPARTMENT

July 1961

Price: Two Dollars

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July 27, 1961

Honorable Hal Clark Jones
Mayor of the City of Chandler
Chandler, Arizona

My dear Mayor Jones:

On March 28, 1960, Maricopa County, the City of Chandler, and Western Business Consultants, Inc. entered into a planning program agreement. We are pleased to submit herewith a report upon Population and Land Use. In accordance with this planning program agreement, Western Business Consultants prepared a report upon Economic Analysis and Projection, which is bound separately. The staff of the County Planning and Zoning Department has prepared a proposed Zoning Ordinance consisting of the zoning text and district map, and also a report upon zoning for the City of Chandler and these reports are also bound separately.

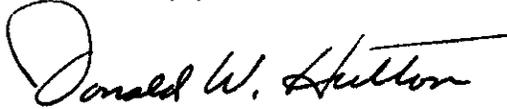
This report includes estimates of the amount and distribution of present and probable future population, present use of land, future land-use requirements, and the urban area for which physical plans will be prepared. A subsequent report will be prepared for major streets, highways, and parking and a suggested text of land subdivision regulations will also be prepared as part of the planning program agreement.

It is suggested this report be given widespread distribution in order that citizens of Chandler may become familiar with the objectives of the planning program.

Honorable Hal Clark Jones
Page 2
July 27, 1961

This report was prepared by the Maricopa County Planning and Zoning Department under the supervision of Mr. Robert M. Bowsby, Principal Planner. We wish to gratefully acknowledge the assistance provided by Mr. Glenwood M. Wilson, City Manager, and Mrs. Arlene Rossell, City Clerk.

Respectfully yours,

A handwritten signature in cursive script that reads "Donald W. Hutton". The signature is written in dark ink and includes a large, stylized initial "D" at the beginning.

Donald W. Hutton
Director

DWH:mb

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ACKNOWLEDGEMENTS

A History of Chandler, Arizona, by Robert Conway Stevens, University of Arizona Bulletin, Social Science Bulletin No. 25, October 1954.

Chandler, Arizona—An Economic Survey, by the Bureau of Business Services, Arizona State University, Tempe, Arizona, July 1959.

City of Chandler, Arizona - Report of a Study of Existing Water and Sewerage Works with Recommended Improvements. Yost and Gardner Engineers, December 1958, Job No. 3533.

A Planning Program for Chandler, Arizona - Part 1, Economic Analysis and Projection, by Western Business Consultants, December 1960.

Town Plan Report, Chandler, Arizona, By Charles Henry Cheney, Consultant in Town Planning, March 1926.

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SUMMARY OF RECOMMENDATIONS

1. Adoption of the report as an official guide for directing Chandler's future growth.
2. The City of Chandler's population is expected to double within the next 15 to 20 years, bringing with it significant demand for additional municipal services. It is, therefore, recommended that the existing services be analyzed in light of the projected population and a long-range capital improvement program be prepared to meet the increased demand when needed.
3. Extension of municipal services should be confined to the corporate limits to prevent excessive and premature municipal expenditures caused by urban sprawl.
4. That citizen's support and approval be given to the proposed sanitary sewer improvement program.
5. Additional strip zoning of the urban arterials leading into the city be denied in order to expedite traffic safely, prevent unsightly approaches to the community, and to discourage marginal commercial enterprises.
6. Park and recreational facilities are inadequate to meet existing and proposed community needs. Therefore, a comprehensive park study should be prepared to be coordinated with the Chandler school system.
7. Continue citizen's interest and concern over any proposed new developments that would be located within the Chandler Urban Area.

INTRODUCTION

Historical Background

Throughout its history Chandler has been the trading center of an agricultural community. In the beginning, Dr. A.J. Chandler acquired desert land southeast of Phoenix far beyond the reach of the early irrigation canals. By the early 1900's, nearly 18,000 acres of land had been assembled together into the property commonly referred to as the "Chandler Ranch." Lack of a dependable supply of irrigation water delayed full-scale agricultural development until the Federal Reclamation Act of 1902 enabled the construction of Roosevelt Dam and other improvements along the Salt River system.

The completion of these early projects contributed greatly to the stabilization of the agricultural economy of the Salt River Valley; Phoenix in particular and the whole valley in general embarked upon a period of growth and prosperity. Roosevelt Dam was dedicated in 1911, and the town of Chandler came into being the following year, 1912. Dr. Chandler subdivided his ranch into farms ranging from 10 to 160 acres and laid out the townsite which originally occupied about 300 acres of the ranch. The town, being in the approximate center of the former ranch property, grew slowly until its inhabitants numbered an estimated 1,600 by 1920. At this time, the town incorporated, and the optimism of the 1920's stimulated the creation of plans concerning future growth and community improvements.

One of the principal proposals was the design by Frank Lloyd Wright of a new hotel, the San Marcos in the desert, to be located several miles west of Chandler on the southern slopes of the Salt River Mountains. However, the plans never materialized as the financial crisis late in 1929 put an abrupt end to any building schemes of a magnificent nature. During the early 1930's, the town found itself in the grips of the depression; and, consequently, the pace of its economy slowed to a walk. The effects of the depression are indicated by a glance at the population statistics for the town; in 1930 the number of inhabitants totaled 1,378 and by 1940 the population had actually dropped slightly to 1,239.

The entrance of the United States into World War II in 1941 soon enabled the Chandler area to add another segment to its economic base. Although the trials and horrors of war can hardly be said to benefit mankind, it must be admitted that the establishment of Williams Air Base in the summer of 1941 proved to be an economic boom to the Chandler community. In addition to the many residents of Chandler who secured employment at the base, contingents of the military personnel resided in the town. In general, the decade of the 1940's brought a rejuvenation of economic activity, and when the 1950 census was completed it was discovered that Chandler's population of 3,799 distinguished the town as among the fastest growing communities in the State.

Continued developments in agriculture and closely related industries through the 1950's contributed greatly to Chandler's prosperity. Since its conception, Williams Field has been in continuous operation; its designation as a permanent facility shortly after the end of World War II tended to insure permanent growth in surrounding areas. At the present time, Chandler stands on the threshold of a new era. In twenty short years the community has grown from a small town into a city of ten thousand

inhabitants. Its proximity to the Phoenix urban area should enable Chandler to receive a sizeable share of the suburban growth that is expected to occur in the Salt River Valley during the next ten to twenty years. Increased industrial activity in and immediately around Chandler and in the more distant districts such as West Chandler places the city's prospects for future growth on a firm basis.

It is conservatively forecasted that the Chandler urban population will increase from 10,000 persons to 20,000 persons by 1980. This growth may occur sooner than forecasted. The important thing is that physical plans be prepared to accommodate this future growth regardless of whether it is achieved by 1980 or earlier. Various facilities should be provided accordingly as may be warranted.

Scope and Objectives of Land-Use Planning

The following report is principally concerned with the arrangement of the uses of land within the Chandler urban area. Major developments of the past 50 years have been analyzed in order to determine past growth trends and the present pattern of land use. From this, the direction and magnitude of future growth trends have been estimated. The general area that would be suitable and logical for urban development within the next 20 years has been suggested herein. Whether urban development materializes within the area suggested will depend upon a number of factors such as the availability and cost of land for private development and policies regarding extension of public utilities.

The future land-use pattern should be designed to achieve a harmonious relationship between the various categories of land use. Defects in the present land-use pattern should be gradually corrected as conditions warrant and permit.

For reasons of health, safety, economics, and esthetics it is important that residential uses are not intermingled with industrial uses—particularly in the midst of any heavy industrial area that emits poisonous or noxious fumes or odors, or where traffic composed of trucks and passenger cars (carrying employees to and from work) is unusually heavy. Industrial and commercial uses must also be carefully located not only from a business standpoint, per se, but to help keep heavy traffic from residential neighborhoods and to avoid the intermingling of business traffic with through traffic.

The relationship of traffic arteries to the central business district, industry, schools, parks and residential areas is of paramount importance. Determination of a future land-use pattern and adherence to this pattern will facilitate the planning by various utility companies for extension of their services.

Planning for Cities - Large and Small

Generally speaking, planning for the arrangement of land uses, becomes more involved and complicated as cities get larger and more populous. Not only the larger size itself creates added work, but also the number of functions increase making it more difficult to guide them into a satisfactory plan. For instance, the largest cities are apt to have special districts devoted to theater and entertainment, governmental activity, financial pursuits, department stores, and so on, whereas all of these activities tend to be included in one central business district in the smaller cities. The largest cities have specialized transportation systems that are not commonly found in small cities such as the subway system of New York City and the elevated railway system of Chicago.

However, smaller cities do have inter-city and intra-city transportation problems. In recent years the universal use of the automobile, especially in small and medium sized cities, has created congested highways that contribute to an appalling waste of time, fuel, and tax the patience of the most uncomplaining driver.

Several decades ago, when the railroad was the mainstay of the American transportation system, the noise and soot that was ejected from the steam locomotive engulfed the city, or at least smothered the areas adjacent to the railroad tracks. These districts became analogous with the most undesirable parts of the city. Today, American trains with the diesel engine as its principal locomotive are fewer in number than in the past and much cleaner, although it is questionable if they are quieter.

New forms of transportation, such as the airplane, create new planning problems. It is fortunate that few airports involving large scaled operations are completely enclosed by big cities. However, the hazards involving the increased traffic of jet aircraft have lately come to the attention of the public. A phase of modern city planning directs its attention to the problems of airport location and zoning within the surrounding area.

From time to time city planning must direct its attention from one set of problems to another. The program must always remain flexible in order to cope with new problems and abandon old programs when warranted. Conditions, problems, and needs vary depending upon the size of a community, geographical location, economic base, and other factors. However, a basic objective of sound planning is to enable a community to become or remain a desirable place in which to live, work, and play and the planning program for any community must be adjusted to its particular problems and needs.

Chandler's Planning Program

Chandler is unique when compared with most other Arizona cities and towns in the matter of early adoption of planning and zoning. The town was founded in 1912 and received the services of several planning consultants. One of these, the noted landscape architect, Frederick Law Olmstead, who was the designer of Central Park in New York City, was employed by Dr. Chandler to prepare a general plan of development. At this time, the town park on the plaza was established, and arrangements were made by deed restrictions permitting the business district to encircle the park. The pergola plan for the downtown area was adopted, and the commercial buildings were required to be fireproof. Residential areas were planned to be farther away from the park, those areas being farthest away receiving the least number of restrictions. In areas adjacent to the business district, the main use of the land was restricted to residential or church use—stables and other outhouses being permitted only on the rear half of the lot. Front and side yards were required to a depth of 20 and 6 feet respectively, and stipulations were made as to minimum expense of construction.

Fourteen years later, in 1926, the citizens of Chandler received an opportunity to re-examine the prospects for new developments and adjust the old plan. During March of that year, a "Town Plan Report" prepared by Charles H. Cheney, Planning Consultant, was submitted to the Town Council. In addition to an introduction to city planning, zoning concepts and objectives, the report included sections concerning "The Major Traffic Street Plan," "Railroad Readjustment and Grade Crossing Elimination," "Schools, Parks and Recreation," and "Embellishment and Improvement of the Town." Chandler on April 23, 1926, became the first town or city in Arizona to adopt zoning regulations prepared by the consultant, Mr. Cheney. These

regulations and subsequent amendments thereto have remained in force ever since and have effectively guided the development in Chandler.

Once again, Chandler has come to the point where its citizens are taking an introspective view of the city's past and also its future.

This report is concerned with an analysis of the city's background, particularly for the subjects of existing land-use pattern and population density and distribution. As part of this program, a study "Economic Analysis and Projection," has been prepared by Western Business Consultants, Incorporated, which is bound separately from this report and provides the first part of a new planning program for Chandler.

The second "part" of the program is contained herein, and provides an estimate for the amount of land that will be required for future urban purposes. Studies of Chandler's economy, history and geography are all incorporated into an examination of the city's needs projected to 1980. Plates describing desirable density and distribution of future population are included; in this manner Chandler may be aided in setting its sights on working toward an optimum goal of civic achievement.

CHAPTER 1

EXISTING CONDITIONS

Location

The site for the City of Chandler is a broad alluvial plain situated at an elevation of 1,248 feet between the Salt and Gila Rivers. In previous years these rivers flowed consistently in the vicinity of Chandler, but today almost all of the water is diverted upstream into canals for irrigation projects that exist throughout much of central Arizona. Only occasionally do the river beds flow with flood water. The City is almost equidistant between the two—the Salt River drains from east to west 10 miles to the north, and the Gila enters the vicinity from the southeast and passes by Chandler a little over 10 miles away to the southwest. The Salt River Mountains, which likewise exist between the Gila and the Salt River, rise 9 miles to the west of Chandler, and extend 12 miles farther west toward the St. John's Indian Mission and the convergence of the two rivers. The Gila then generally drains in a southwesterly direction toward the Colorado River.

Queen Creek, a wash which rises in the mountains north of Superior, enters the valley at Rittenhouse, 13 miles east of Chandler. However, at this point Queen Creek today essentially disappears into a levee that runs into the Eastern Auxiliary Canal. To the southeast, about 15 miles away, the San Tan Mountains separate the agricultural region surrounding Chandler from similar regions near Coolidge and Casa Grande.

The mountains, previously mentioned, within the immediate vicinity of Chandler are all desert mountains whose elevations are not very high. The highest peak in the Salt River Mountains, otherwise known as the South Mountains, approaches an elevation of 2,700 feet; whereas the elevation of the San Tan Mountains is 3,104 feet. On the other hand, Four Peaks, whose elevation reaches 7,691 feet, is located about 40 airline miles northeast of Chandler in the virtually inaccessible region north of Apache Lake, one of the chain of reservoirs along the Salt River. Of these four sizeable reservoirs, Saguaro Lake is the closest to Chandler being 35 miles away by a paved road. The farthest reservoir, Roosevelt Lake, is 72 miles to the northeast and is reached by the famed Apache Trail—Canyon and Apache Lakes may also be reached by the latter route.

Chandler is located on State Highway Routes 87 and 93, the principally traveled route between Phoenix and Tucson. Downtown Phoenix is 24 miles northwest of Chandler, and Tucson is 88 miles to the southeast. The center of Mesa is 8 miles due north of Chandler, and Casa Grande is 32 miles to the south. Chandler's position in relationship to the metropolitan area and proposed Maricopa County—City of Phoenix Expressway System is shown on Plate 1.

Climate

The climate of Chandler is attractive to residents, tourists and health seekers, being most inductive to outdoor recreation, especially during the winter months.

The sun shines 84 per cent of its possible daylight sojourn, and the average relative humidity is low (57 per cent in the morning, 30 per cent at noon and 28 per cent in the evening). The result is a dry, warm, climate.

Summers are hot with an average July temperature of 89.1 degrees with maximum extremes often exceeding 110 degrees. Winters are very pleasant with an average January temperature of 48.4 degrees. Freezing temperatures, however, occasionally occur. The record high temperature is 120 degrees as compared with a record low of 9 degrees.

Yearly rainfall averages 8.16 inches with maximum amounts usually occurring in two seasons, July through September and December through March. Precipitation is generally at a minimum during May and June

Salt River Project

The Salt River Project was enabled to become a reality with the passage of the Reclamation Act by Congress in 1902. Since then, six large storage dams have been built, four on the Salt River (including Theodore Roosevelt Dam) and two on the Verde. A diversion dam (Granite Reef Dam) just below the confluence of the Verde with the Salt diverts the water into two major canals, the Arizona Canal on the north side and the Southern Canal on the south side, which in turn supply the remainder of the canals and ditches within the project's boundaries. A flood control dam (Cave Creek Dam) is located to the north of Phoenix. The storage dams also serve as a flood control system.

The Consolidated and Eastern Canals are the major canals of the project that serve the Chandler area which includes most of the 220 square-mile area bounded by Elliot Road on the north, a projected alignment of 56th Street on the west, and the County line both to the south and east. In 1892, Dr. Chandler established the Consolidated Canal Company; and in July 1909, the canal system was sold to the Federal Government. At the time of its subdivision in 1911, the ranch totaled 18,000 acres. Although the Consolidated

Canal provided water for less than 7,000 of the acreage, the remainder of the ranch was unirrigated desert.

Today, the Salt River Project delivers water to about 28,000 cultivated acres in the Chandler area; generally the Eastern Canal is the eastern boundary, although south of Germann Road the Consolidated Canal forms the boundary. The Roosevelt Conservation District lies adjacent to the Salt River Project area with the Eastern Auxiliary Canal (otherwise known as the Roosevelt Conservation District Canal) forming its eastern boundary. This latter association was organized in 1920, and today it services 26,000 cultivated acres in the Chandler area. In 1924, the Queen Creek Irrigation District was established; and a few years later, in 1929, the Chandler Heights Citrus Irrigation District came into being. The latter region occupied a thermal belt where smudging had been reported to be unnecessary. At the present time private wells supply water to about 60,000 acres in the Chandler area, mainly in the Queen Creek and Chandler Heights Districts, as well as in the Ocotillo (Goodyear) region 5 miles south of Chandler. Altogether, the Chandler area contains an estimated 114,000 acres of cultivated land. Approximately 1/3 of this acreage is planted in cotton—both long and short staple. Other principal crops include barley, alfalfa, and wheat.

As well as the development of the water storage and canal system, the Salt River Project has built a series of steam and hydro-electric generating plants along with a system of transmission and distribution lines. As a principal deliverer of water to a sizeable area of cultivated land surrounding Chandler, the project has been a significant factor in relation to the past growth of the city. It will continue this status as population increases and industrial facilities become more numerous.

San Marcos Hotel

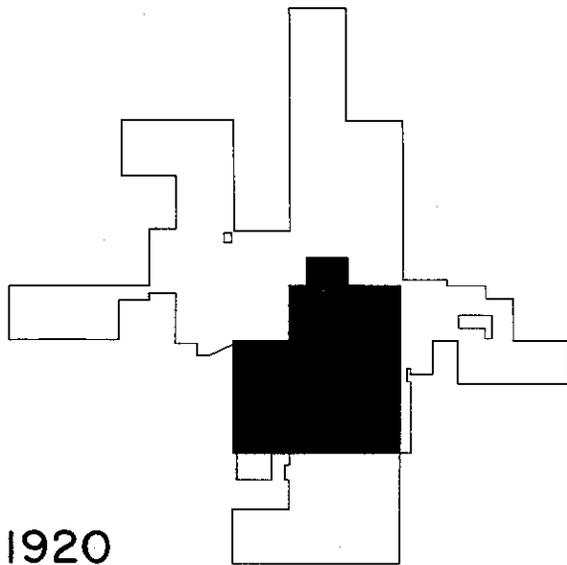
The San Marcos Hotel can appropriately be labeled as Arizona's foremost resort, being one of the few left combining the old charm with modern splendor. Its facilities include rooms and bungalows to accommodate up to 300 guests, and the surrounding grounds (300 acres in extent) contain an eighteen-hole golf course and magnificent formal gardens.

Construction of the San Marcos began on May 14, 1912, despite the fact that no town was yet in evidence other than a system of surveys, while no main railroad served the immediate vicinity. Dr. Chandler planned that the hotel would be "a great home of luxuriant hospitality and cheer;" something that would "appeal to wealthy people in ice-bound countries (sic) who are looking for a sunny, mild winter climate to enjoy." Certainly, this purpose has been achieved. Designer of the hotel was Myron Hunt, a noted Los Angeles architect.

The hotel was named after Fray Marcos de Niza, the famous missionary and first white man to enter what is now Arizona, in 1539. Since its official opening on November 22, 1912, the resort has been in business each winter season up to the present time, despite depressions and two world conflicts, and it continues to attract noted personalities and numerous conventions from many parts of the country.

Annexations and Municipal Status

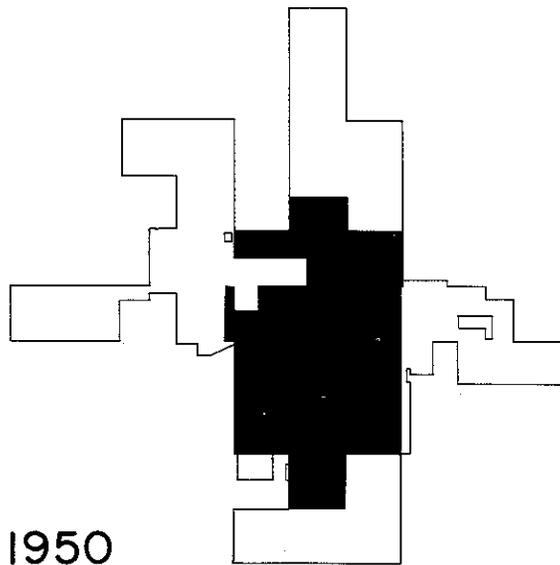
During the period from 1912 to 1920 Chandler as an unincorporated community had no legal status. In the absence of any constituted authority, the Chandler Improvement Company maintained the streets and provided domestic water. Police and fire protection were provided by the County Sheriff and local volunteer fire fighters, respectively. In these early days a full range



1920

AREA - 331 ACRES

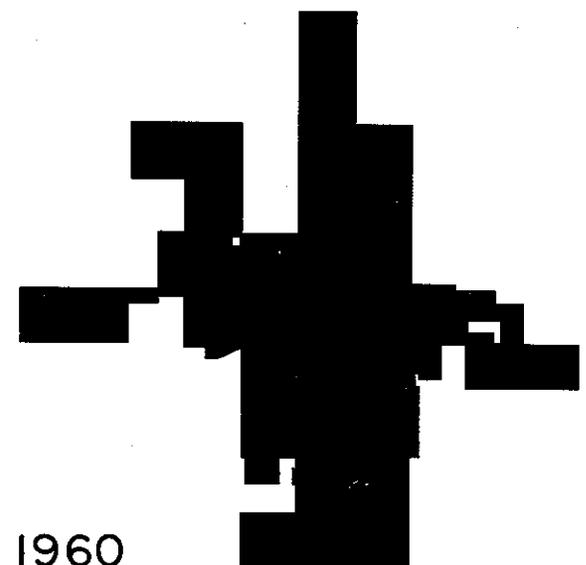
POPULATION - 1600



1950

AREA - 522 ACRES

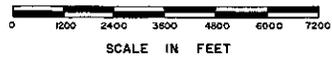
POPULATION - 3799



1960

AREA - 1444 ACRES

POPULATION - 9531



SCALE IN FEET

PREPARED BY
 MARICOPA COUNTY PLANNING DEPARTMENT
 NOVEMBER 1960 D.R.Z.

GROWTH OF CHANDLER, ARIZONA

PLATE NO. 2

of commercial enterprises had been established, including a bank and newspaper. Local industries nearby included a cotton gin and cannery.

Early in the year 1920, Chandlerites took steps toward giving their community legal status by forming a municipal corporation. The matter was under serious consideration in May 1918, but delayed when it was learned that the Maricopa County Board of Supervisors, desiring a program for improvement of roads throughout the County, had ordered a bond issue election to be held. The program proposed paving of main thoroughfares in unincorporated communities; and, if incorporated, no portion of this bond issue would accrue to Chandler. Then the City would have to tax its own inhabitants for further improvements of the main streets. County voters, however, approved the road bond issue on May 17, 1919, thus clearing the way for Chandler to incorporate. On January 21, 1920, a mass meeting showed an overwhelming sentiment for incorporation. After obtaining the requisite number of signatures, the petition was presented to the Board of Supervisors on February 16, and the town was declared incorporated. The following night the first meeting of the Common Council was held, and Dr. Chandler was elected to the offices of Mayor and President of the Council. The first Council election was held in May of that year.

The initial boundaries of the town encompassed 331 acres, or a little over a half-square mile as shown by Plate 2. The original boundaries included the railroad tracks on the east, Denver Street on the south, and a projection of Hartford Street on the west. The northern boundary was essentially defined by Cleveland and Erie Streets. The area enclosed by these boundaries was somewhat larger than the original townsite, although not all of the San Marcos Golf Course was included.

During the next 30 years Chandler annexed 191 acres, mostly to the north of the town, increasing the area by 60 per cent. In the last 10 years,

from 1950 to 1960, the pace of the city's growth has increased, and the area has expanded to include 1,444 acres, or about two and one-fourth square miles. Annexations have taken place on almost all sides: across the tracks to the west, to the south, north and northwest. The principal direction of city growth appears to be in the northwest quadrant.

During the mid-1920's, the original town hall and jail were constructed; the jail being transported 175 miles all the way from Solomonsville. Extensive remodeling occurred in 1939, and during 1958 the new city hall was built. Chandler experienced its position as an official town until 1954, at which time City status was achieved.

Railroads

The Casaba branch of the Arizona Eastern Railroad was built in 1911 to serve the Chandler Ranch. However, this railroad terminated 6 miles south of Chandler. Seven miles to the west was Chandler's closest connection with a branch of the Southern Pacific, the Maricopa, Phoenix and Salt River Valley Railroad, which provided Phoenix with an outlet at Maricopa onto the mainline of the Southern Pacific. The Arizona Eastern had another line to the east which served the communities of Gilbert, Higley, Rittenhouse and Queen Creek, and extended from Mesa to the mining areas around Superior, Ray and Hayden.

Since the founding of Chandler, the Southern Pacific has acquired the Arizona Eastern Railroad, and the Casaba Branch has been built to mainline standards. Although various rumors indicated that Chandler was to be on a mainline railroad, nothing materialized until 1926 when the Chandler-Picacho and Buckeye-Welton legs of the Southern Pacific were completed, and mainline railroad service established for the whole Salt River Valley, from Buckeye to Chandler.

At the present time six passenger trains arrive in Chandler daily. Three are westbound and, after passing through Phoenix and Yuma terminate in Los Angeles. The eastbound trains connect Chandler with Tucson and El Paso, and two of them terminate in Chicago. The third eastbound train passes through San Antonio and Houston and finishes its run at New Orleans. Branch lines still serve the Kyrene industrial district to the west and the Williams Field and Queen Creek districts to the east, although the old line between West Chandler and Maricopa has been abandoned for many years.

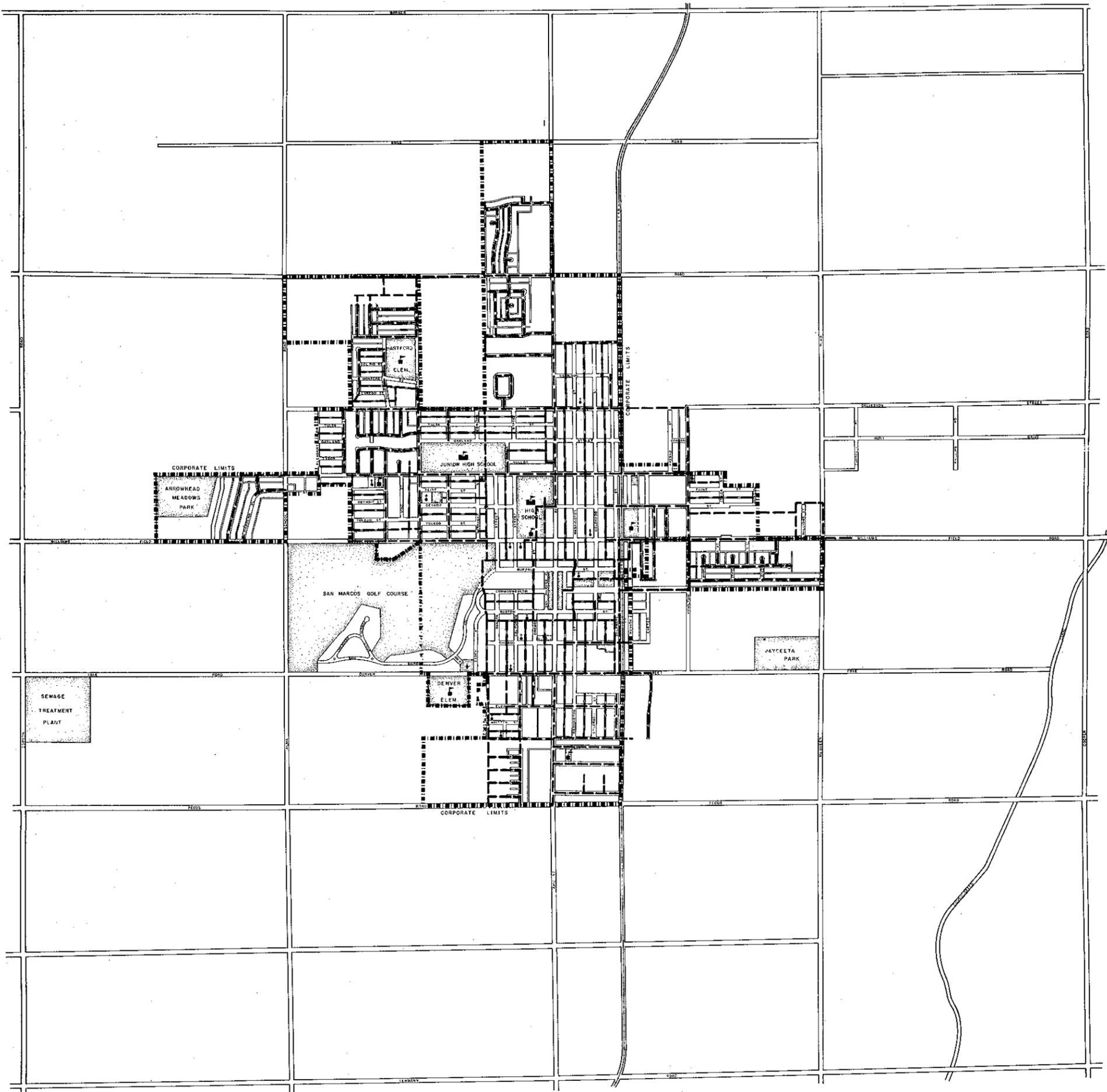
Airports

The Phoenix Sky Harbor Airport, the major commercial facility in the metropolitan area, is located 20 miles to the northwest of Chandler over existing highways. Improvements forthcoming with the Interstate Highway System will greatly improve Chandler's situation as far as its connection with this airport is concerned; see Plate 1, Chandler and vicinity. Currently, Sky Harbor is served by six airlines: Trans World Airlines, American, Continental, Western, Bonanza and Frontier. The former four airlines offer nation and world-wide connections, while the latter two furnish service throughout the southwestern part of the United States.

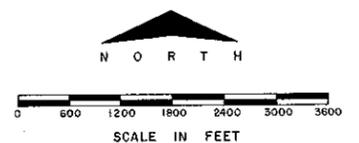
A municipal airport to directly serve Chandler was built during the late 1920's. The facility occupied an eighty-acre plat two miles south of the city, west of the railroad. For a short time Standard Airlines provided daily flights to California and Texas; unfortunately, the advent of the depression ended the service. Later, the airport was moved two miles to the east and has since been primarily used as a landing field for private airplanes, including crop-dusting operations.

CITY OF CHANDLER ARIZONA

CITY PLANNING AND ZONING COMMISSION



ALL WATER LINES FROM 2" TO 16"



PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
1961 R.D.W.

EXISTING WATER SYSTEM

In the past two years the municipal airport has been expanded and improved: the north-south runway, 2,600 feet long and 75 feet wide, was surfaced with asphalt; other work completed includes the surfacing and completion of a parking apron, a taxi strip 2,600 feet long, and plans are being completed for field lighting.

Military airports within the vicinity of Chandler include Williams Air Base and the Goodyear Auxiliary Airfield. The latter airfield is located six miles to the southwest of Chandler.

Utilities

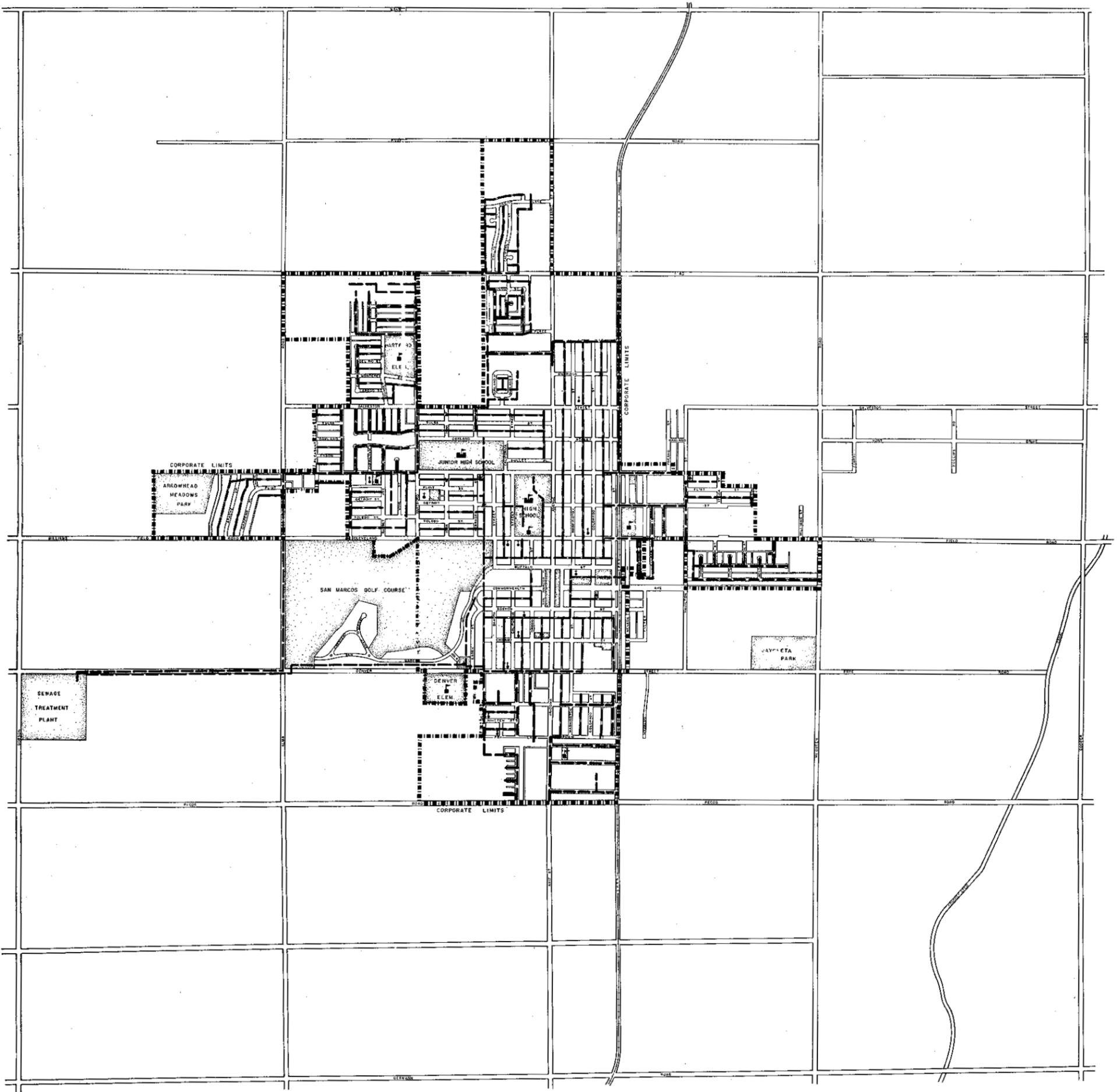
Water Supply

At first, water for domestic purposes in Chandler was provided by a well located in the park. In 1912, a five-hundred-gallon per minute pump was installed and completion of a distribution system followed, including 16 inch mains and 4 to 12 inch crosspipes. After the town was incorporated and it had been shown that a municipally-owned water system would be profitable, Chandler embarked on a program to construct its own water works. The central portion of the city's present distribution system was built in 1926. Extensions and improvements, including the drilling of four new wells have been made through the years; the last of the major improvements being made in 1958. At present, the utility service accommodates almost 10,000 persons, most of whom live within the corporate limits of the City, from four wells with a pumping capacity of 4,350 gallons per minute.

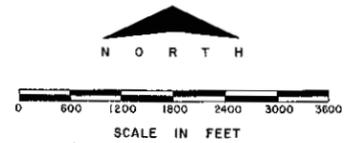
Current plans include construction of a ground storage reservoir. As Chandler grows in the future, additional wells probably will have to be drilled, although the existing distribution system can easily be expanded to serve approximately 20,000 persons. This system is shown on Plate 3.

CITY OF CHANDLER ARIZONA

CITY PLANNING AND ZONING COMMISSION



ALL SEWER LINES FROM 4" TO 15"



PREPARED BY
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1961 R.D.W.

EXISTING SEWER SYSTEM

PLATE NO. 4

Sanitary Sewer System

A sanitary sewer system for Chandler was completed in 1928 with the disposal plant located one and three-fourth miles west of the City. Extensive improvements were made in the late 1940's and early 1950's. The original central collection system included a 12-inch outfall, and septic tanks were constructed at the presently existing treatment site. Principal improvements at the disposal plant included the construction of a clarifier in 1948 and the installation of the digester and a new pumping station in 1953. Also in 1953, a 15-inch outfall was constructed to serve the northern portions of the City.

At the present time, the existing facilities are serving a population of almost 10,000 people—with a collection system to facilitate a population of about 14,000. However, the treatment plant is running at full capacity. The central area (where pumping is not required) of the present treatment plant covers five to six square miles. Yost and Gardner, consulting engineers, have made important recommendations concerning the future sewerage system, and have prepared plans to provide the means of expanding the collection system capacity to serve 30,000 persons. Proposals also include the construction of a completely new treatment plant at a site west of the existing plant; located north of Williams Field Road between Canal Drive and Kyrene Road, to provide a control area of about 30 square miles. The existing sewer system is shown on Plate 4.

Schools

Permanent public school facilities were established by the citizens of Chandler at an early date in the City's history. The elementary school graduated its first class in 1914, and the high school followed suit in 1918. Earlier, the first school had been a ten-by-twelve tent house functioning in 1911 with an average daily attendance of only five pupils.

The main high school building was completed in 1922, its appearance then being much the same as it exists today. Facilities included 25 classrooms, plus physics and chemistry laboratories, study hall and a combination assembly room and library.

The rapid population growth of Chandler during the war years is reflected in the school enrollment. At the end of World War II, enrollment was 613, 153, and 245 in the elementary, junior high and senior high schools, respectively. In addition, St. Mary's Parochial School had an enrollment of 162. This school was founded in 1944 and originally contained grades one through six. By 1953-54 it offered an eight-year curriculum, and by 1958 a complete high school course of study was offered under the name of Seton High School.

Increased population resulted in the erection of a new public elementary school, the Hartford School, in 1947. Additions were also made to Chandler High School at about the same time. Chandler found that the proximity of Williams Air Base created a definite burden on the school system, this condition being typical of most cities and towns near military installations. Congress enacted legislation which provided that Federal financial assistance might be made to those areas so affected; and so, aided in this manner, the school district was able to complete the Chandler Junior High School in 1953. In addition, a new high school athletic field was developed.

Chandler's newest public elementary school, the Denver School, opened in September 1960, along with additions to the high school, including a new vocational building and science addition. The enrollment today approaches 900 in the high school, 800 in the junior high, and 1500 in the four elementary schools. Recently, the school district acquired an elementary school site in the vicinity of Galveston and Hamilton Streets. Currently, an

extensive survey of the public school system is being undertaken by a team of analysts from the University of Arizona, the purpose being to designate future school sites and to make recommendations to improve the present school system.

Parks and Recreational Facilities

The Plaza in the center of town was Chandler's first city park. Currently, besides the plaza, the City has four small public parks, three of them being neighborhood parks and one to serve the whole community. Another recreational area, on property owned by a church, is being maintained by the City. The community park, public library and the youth center are all located downtown, in the vicinity of Colorado Street and Commonwealth Avenue.

Chandler's swimming pool located in the vicinity of Denver Street and McQueen Road is operated by the Junior Chamber of Commerce on land leased from the Salt River Valley Water Users Association. Currently, this park, the Jaycetta Park, contains the only public swimming pool within the Chandler area.

At the present time, Chandler is without a municipal golf course. However, there is a semi-private 18 hole course adjacent to the San Marcos Hotel. Tentatively, plans have been made for the construction of a nine-hole municipal course to be located on the existing sewage treatment plant site, (about 40 acres) should this facility be relocated as previously mentioned.

Recently, 21 acres to the northwest of Cleveland Street and Alma School Road were acquired by the City to be developed as a recreational area to include baseball diamond and bleachers, archery range, other baseball and softball diamonds, tot lots, tennis courts, swimming pool and community center. Additional land will have to be acquired to provide for adequate parking space. This area is known as Arrowhead Meadows Park.

A desert park is being considered for development by the Chandler Park Board. This park would be situated on 600 acres of land presently owned by the Federal Government and located about two miles south and one mile east of Chandler Heights, or 17 miles by road southeast of Chandler. The first step would be to make application to the Bureau of Land Management; at first a lease-type arrangement might be made between the two parties; and after five years, the City could buy all or part of the land. Possible park facilities include picnic areas, horseback and hiking trails, and possibly a well and lake at some future date.

Saguaro and Canyon Lakes provide boating and water-skiing type of recreation; Saguaro Lake being the closest to the Chandler area. The best fishing available is on Apache and Roosevelt Lakes which are reached by the Apache Trail, a narrow and twisting, but scenic, mountain road. Tonto National Monument, preserving prehistoric Indian cliff dwellings, may also be reached by this route. The Southwestern Arboretum, near Superior, and the entrance to the Superstition Mountains are located along U.S. Highway 60-70. State Highways 79 and 87 provide good access to the high mountain areas near Flagstaff and Payson, respectively, these areas being around four hours driving time away. During much of the winter, skiing is available at the Arizona Snow Bowl above Flagstaff. South Mountain Park, a City of Phoenix facility, is readily available for scenic driving, hiking and picnicking. The Pima Canyon Road entrance is 12 miles from Chandler, and the main entrance south of Phoenix is 20 miles. Recreational facilities in and around Chandler include a bowling alley, a skating rink, an indoor theater and a drive-in theater.

During the summer the City sponsors a recreational program for children between the ages of 7 and 14 years. Classes in arts and crafts and other activities are held at the Youth Center Building, located downtown, at the

Winn School, and soon a similar program will commence in the north-western part of the City.

TABLE I
PAST AND ESTIMATED FUTURE TRENDS IN POPULATION GROWTH, 1920-1980
United States, State of Arizona, Maricopa County, Chandler

	United States			State of Arizona				Maricopa County				City of Chandler			
	Population	Increase		Population	Increase		Population	Increase		Population	Increase				
	(000,000)	(000,000)	%	(000)	% of U.S.	(000)	%	(000)	% of Ariz.	(000)	%	Persons	% of County	%	
1920	106	--	--	334	0.31	---	--	90	27	---	---	1,600*	1.78	---	---
1930	123	17	16	436	0.35	102	30	151	35	61	68	1,378	0.91	222	14
1940	132	9	7	499	0.38	63	14	186	37	35	23	1,239	0.67	139	10
1950	151	19	14	750	0.50	251	50	332	44	146	78	3,799	1.14	2,560	207
1960	179	28	18	1,302	0.73	552	74	664	51	332	100	9,531	1.44	5,732	151
1970(Proj.)	209	30	17	1,930	0.92	628	48	1,000	52	336	51	12,500	1.25	2,969	31
1980(Proj.)	245	36	17	2,580	1.05	650	34	1,400	54	400	40	20,200	1.44	7,700	62

* Estimate from "A History of Chandler, Arizona, 1912 - 1953", by Stevens, Robert C.

Source: Population 1920 - 1960, reports of U.S. Census; 1970 - 1980, U.S. Projections by U.S. Census Bureau; 1970 - 1980, State, County and City Projections by Western Business Consultants, Inc.

CHAPTER 2

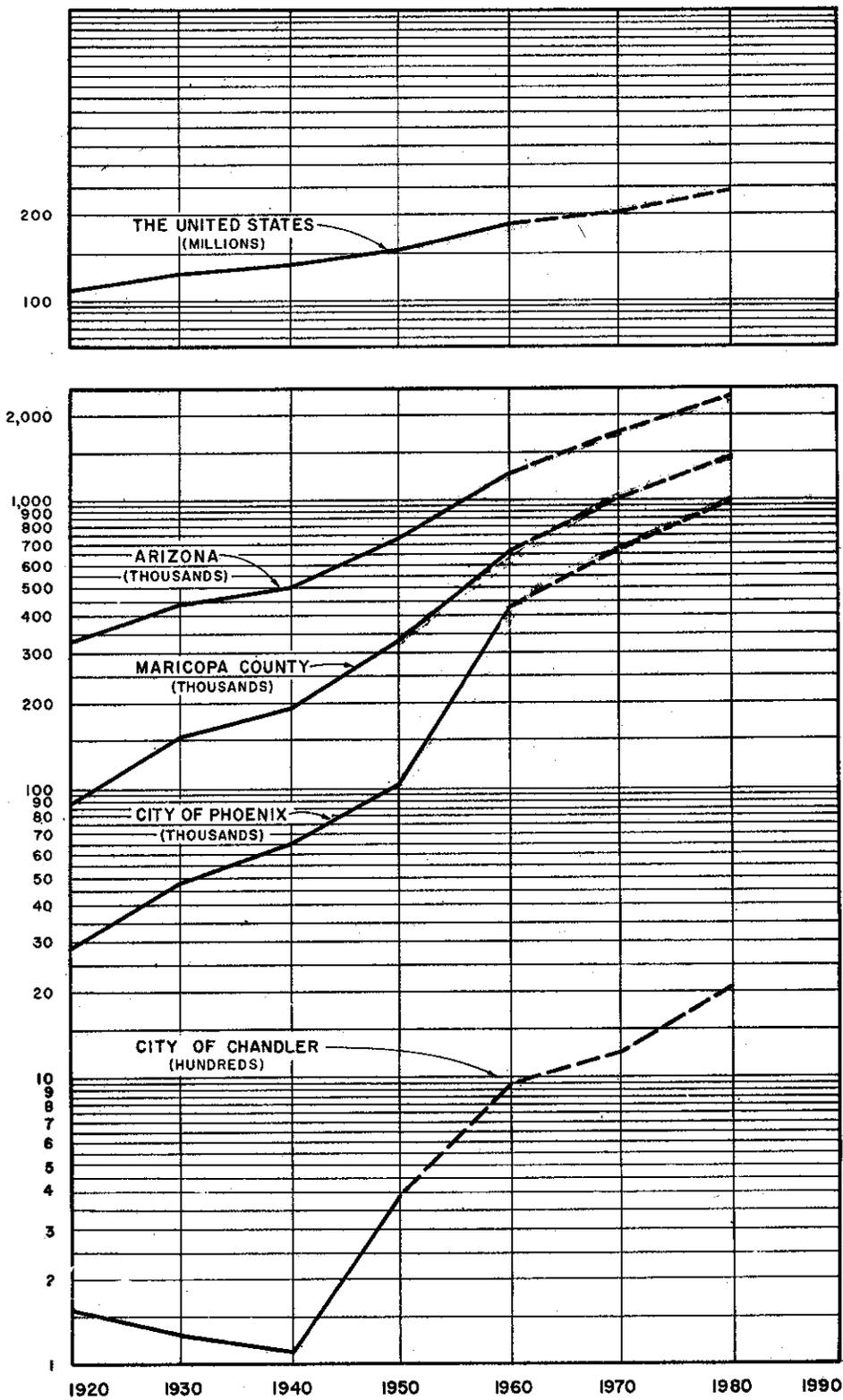
POPULATION

Past and Probable Future Population Growth

The following chapter discusses the past population growth in Chandler and forecasts the future growth that may be expected for the urban area by 1980. The past and present density and distribution of population will also be discussed herein.

Past trends in population provide a relatively simple and commonly accepted guide for determining the probable magnitude of future growth. However, the method which uses past trends of total population ignores the finer points concerning population migration and net loss or gain from births and deaths. Regardless of the method used, the hazards of population forecasting are increased when applied to cities with a small population base, because a single event can change the trend significantly. In Chandler, the past population growth has felt the impact of two such events. During the depression of the 1930's, Chandler lost population and then in the next decade, with the opening of Williams Air Force Base, the City embarked upon a boom that has continued intermittently to the present day. In the future, Chandler's position in relation to the rapidly expanding Phoenix urban area may be the greatest single contributing factor influencing the City's growth.

In order to forecast Chandler's growth, the past trends of the nation as a whole, the State of Arizona, Maricopa County and Chandler have all been considered, with this information being supplied by Table 1 (Past and



1920-1980 COMPARATIVE POPULATION GROWTH

CITY OF CHANDLER

PREPARED BY MARICOPA COUNTY PLANNING AND ZONING COMMISSION - OCTOBER, 1960 - R.D.W.

Estimated Future Trends in Population, 1920-1980) and shown graphically by Plate 5 (Comparative Population Growth). From 1920 to 1960, the nation's population increased 1.7 times, from 106 million to 179 million. During the same period of time, Arizona increased its population from 334,000 to 1,302,000 or 3.9 times. Maricopa County increased from 90,000 to 664,000, or 7.7 times; and Chandler increased from 1,600 to 9,531, or 6.0 times. (Note: Chandler's population of 1,600 for 1920 was only an estimate as no official census was ever taken. Other estimates in the neighborhood of 1,200 may be more reliable as it seems improbable that Chandler lost population from 1920 to 1930. Substituting 1,200 as a base for 1920, Chandler's population increased almost 8.0 times, which would be slightly larger than the County's increase.) Over the past 40 years, Chandler's growth has been relatively similar to the increase in Maricopa County. Therefore, it has been assumed that during the next 20 years Chandler's rate of growth will keep pace with the County; or, for computation purposes, Chandler's relative position within Maricopa County will remain the same from 1960 to 1980. By using this assumption, it is estimated that Chandler's population will reach 20,200 by 1980.

Factors Influencing Past Development and Location of Population

In the past, Chandler has increased its corporate limits by means of annexations, as shown on Plate 2. Usually, the area enclosed by the corporate city is somewhat less than the complete urbanized area. For a variety of reasons, in many cities much of the new development occurs outside the city and it may be some time before annexation takes place. If a sound program is undertaken, annexations can be made in an orderly manner with the least possible expense to both the city and the property owner.

As shown by Plate 6, Residential Development from 1955 to 1961, the new subdivision plats are inside the city limits, thus reflecting the City's policy of not extending sewer facilities beyond its boundaries. The Existing Land Use Map, Plate 11, also reflects the orderly compact pattern of urban development that has taken place within the corporate limits of Chandler. In this manner, Chandler has been able to experience compact growth which proves to be more efficient with regard to cost of municipal services as compared to the spread out or sprawled development, a form of growth experienced by many communities. Compact development is not only less costly per capita for lengths of sewer pipe, but the water system, street paving, curb and gutter, street lighting, police patrol, fire protection, gas and electric lines, trips for garbage collection, etc., are also less.

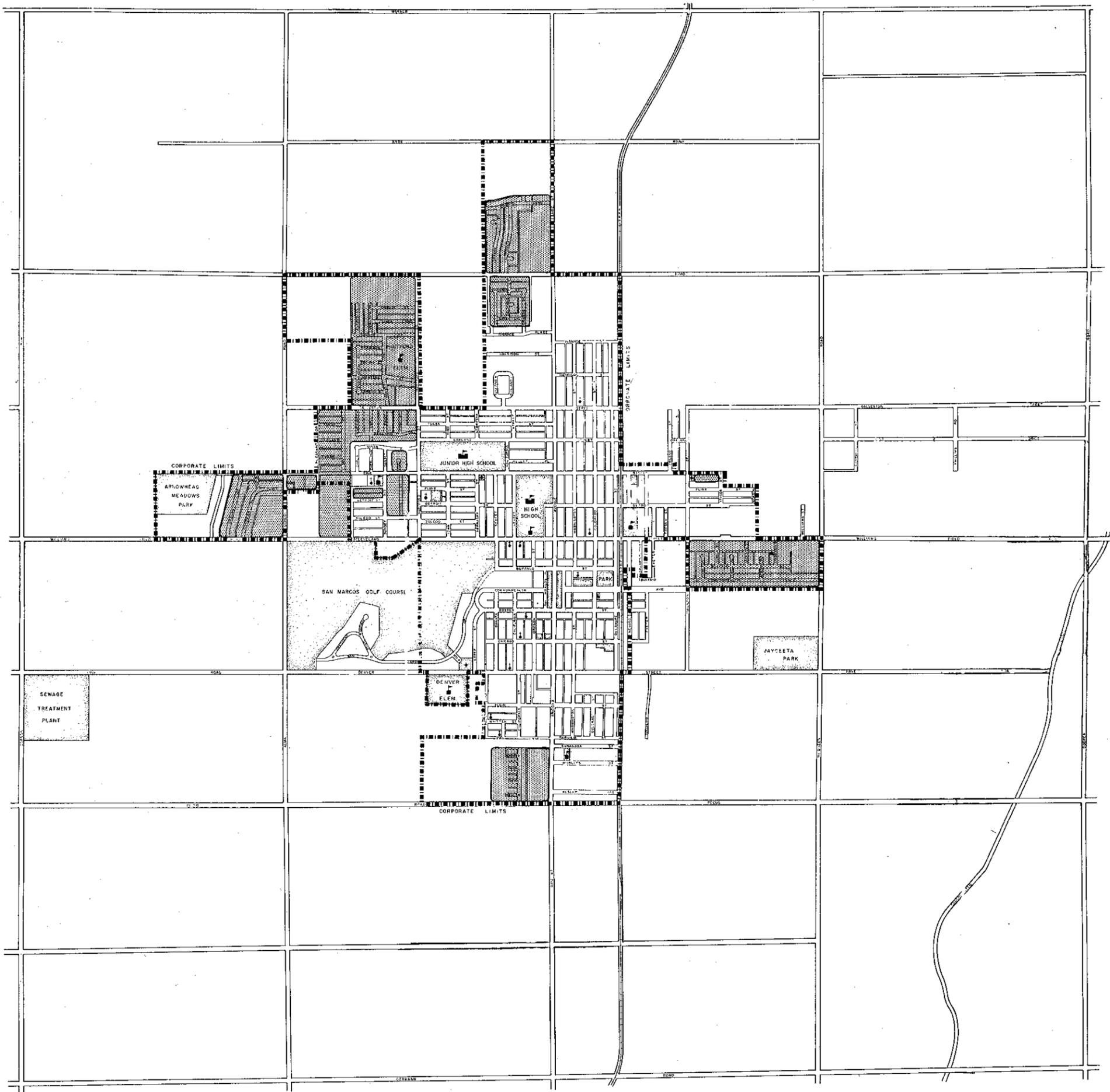
It may be contended that the per capita cost of services to a sparsely inhabited urban area is less than similar cost in a densely occupied area, because the intensity of services required might be less. For example, if development is widely scattered, no sewers may be required at all. Perhaps in this situation, the community should not be incorporated or annexed to another until its density increases. Unfortunately, a populous unincorporated area existing adjacent to a city usually proves to be a liability as far as the central city is concerned.

The unincorporated area pays nothing in direct taxes to the central city, yet it requires and uses certain specialized services offered by the city such as arterial streets, municipal rapid transit, library and recreational facilities. Special fees or outright denial with regard to use by outsiders could help the City's financial situation.

Problems of a criminal, disaster or health nature usually involve the whole urban area and not exclusively the incorporated city. In this manner, the unincorporated area may suffer the ravages of nature and desire help from the city.

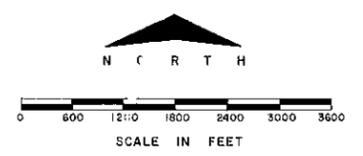
CITY OF CHANDLER ARIZONA

CITY PLANNING AND ZONING COMMISSION



LEGEND

-  RESIDENTIAL DEVELOPMENT
-  CHANDLER CITY LIMITS



PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
JANUARY 1961 R.D.W.

RESIDENTIAL DEVELOPMENT FROM 1955 TO 1961

The population forecast should serve as useful information in helping the city's administration to formulate both long and short-range plans for public improvements. It is possible that the population will deviate from that projected; when large-scale municipal improvements are contemplated, the population projection should be reconsidered and perhaps revised. Most public improvements are planned to accommodate a future population of five to ten years, hence, involve details of actual construction. Long-range planning is justified if plans for municipal improvements can be coordinated together to bring about the general development plan. The zoning district map represents a short-range plan with subsequent changes to be made thereto, based on the long-range general plan. In this manner, the city will be working towards a common goal, municipal improvements being handled by public agencies and the directions of private enterprise being guided and assisted by building and housing codes and zoning and subdivision regulations.

Factors Influencing Future Residential Land Uses and Population Growth

Certain major physical conditions can be expected to influence the location, character and extent of future residential land use. Topography, parks and other open spaces, commercial areas, areas presently zoned for industry together with railroads, major expressways and highways are some of the physical features that influence residential growth. Generally, people want to live in areas convenient to shopping and recreational facilities, and for commuting to and from their place of employment. The location of a school is frequently important in selecting a home site.

Topography is not a limiting condition to future residential growth in Chandler as most of the land in the area is level, well drained and suitable for development. In the past, the railroad tracks have presented a physical

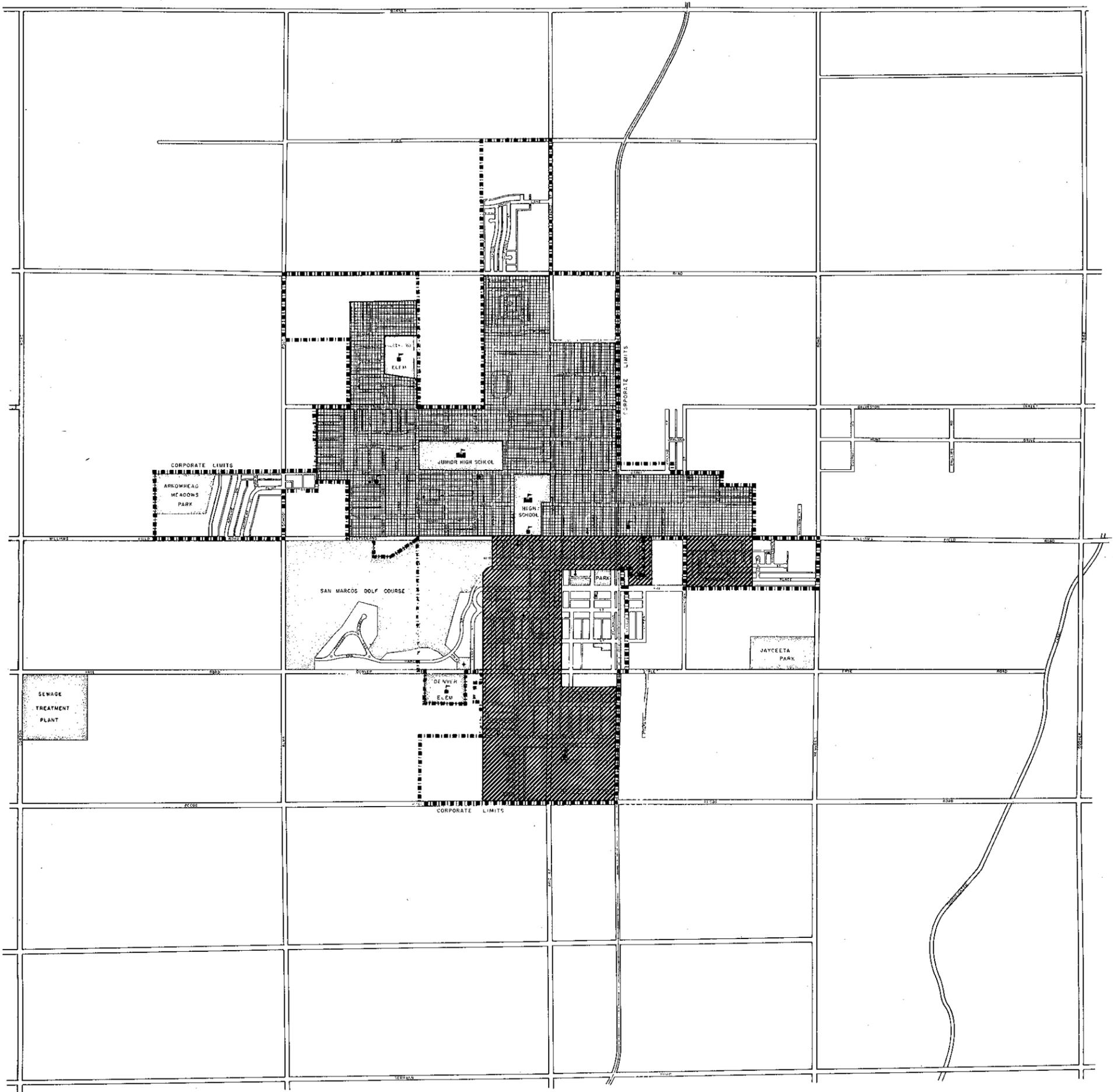
and psychological barrier to growth on the east side of town. Consequently, very little development has occurred in this area. On the west side of town, the golf course behind the San Marcos Hotel has been a factor in influencing new development to the north rather than to the west. It is expected that much of Chandler's residential development during the next 20 years will continue to occur on the northwest side. The location of the proposed sewage treatment plant will permit this area to be serviced more conveniently than any other section of the City. A limited amount of development is expected to occur east of the railroad, although this area proves to be the most difficult to service because of interference from the tracks and substantial distance from the sewage treatment plant.

It is to be expected that the CBD (Central Business District) will expand moderately during the next 20 years, invading some of the residential areas that fringe the surrounding area. Small shopping centers, completely detached from the CBD, should be located at the intersection of major thoroughfares and at the edge of residential neighborhoods. Elementary schools should be located near the center of the neighborhood, allowing the children to walk to school completely unmolested by heavy vehicular traffic. Much of the new residential development will orient itself along major streets and highways; however, care should be taken to avoid the directing of heavy traffic through the neighborhoods. Residential development should always be discouraged from locating in areas now zoned for industry.

Much of Chandler's future population growth is likely to occur from in-migration, in much the same way as it has in the past 20 years. As long as Chandler retains its status as an attractive community, the City will continue to draw its share of all incoming residents and tourists to Maricopa County. However, should either the City or the County fail to meet its obligations for civic improvement, both parties are likely to suffer. Chandler

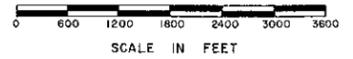
CITY OF CHANDLER ARIZONA

CITY PLANNING AND ZONING COMMISSION



LEGEND

PERSONS PER GROSS ACRE



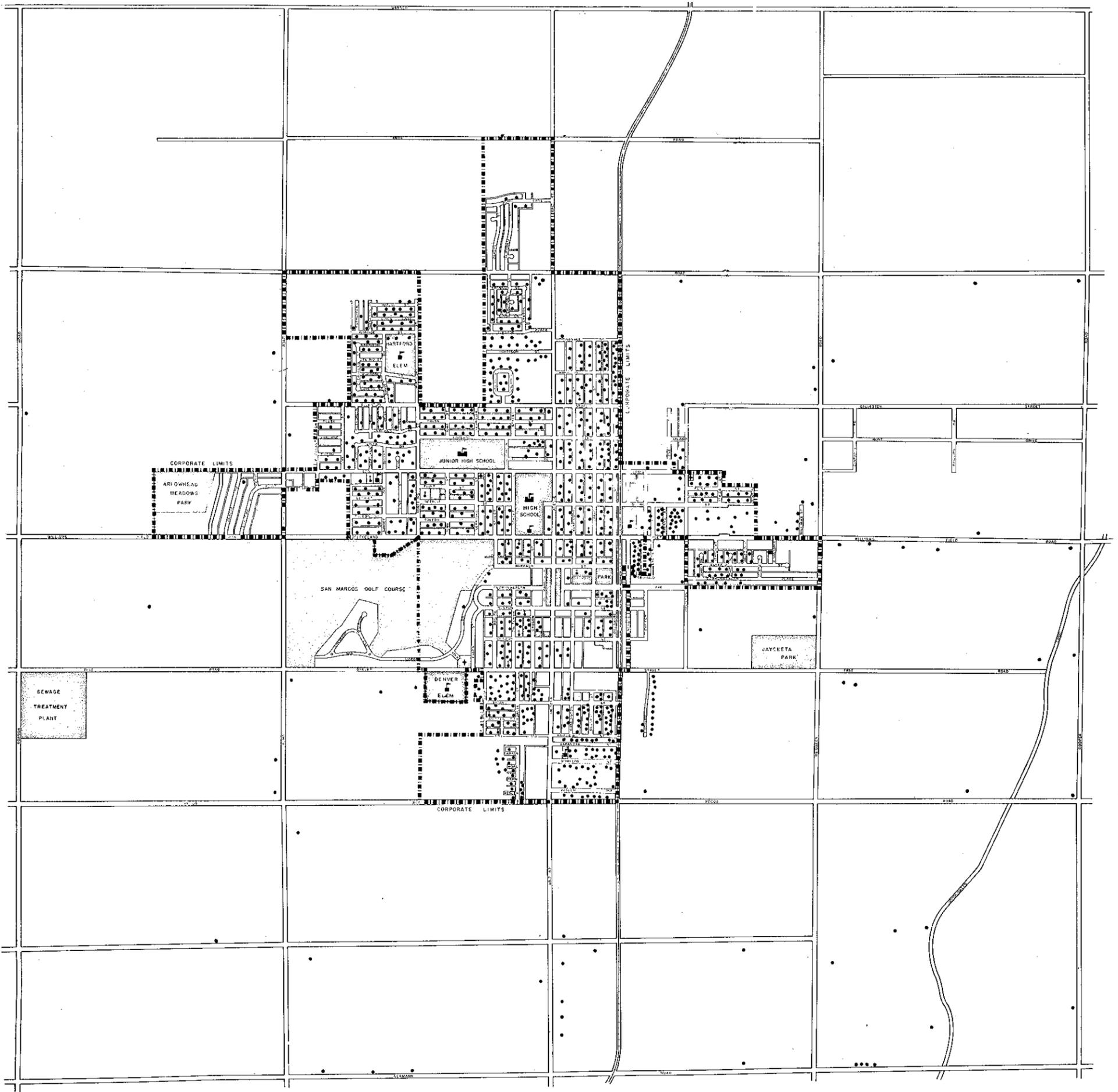
PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
JANUARY 1961 R.D.W.

POPULATION DENSITY-1960

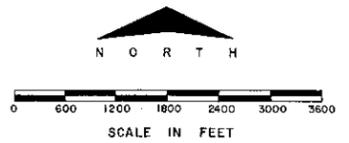
PLATE NO. 8

CITY OF CHANDLER ARIZONA

CITY PLANNING AND ZONING COMMISSION



ONE DOT EQUALS 10 PERSONS



PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
DECEMBER 1960
D.R.Z.

POPULATION DISTRIBUTION - 1960

PLATE NO. 7

commands much of the southeastern part of the Salt River Valley, and failures here would affect a large sector of the County. Needless to say, Chandler would be hurt immeasurably by the evolution of a bad reputation by either Phoenix specifically or the County in general. Natural increase in population, i.e. the number of births in excess to the number of deaths, will also be an important element in the future growth of Chandler. On a statewide basis, Arizona has maintained one of the highest birth rates in comparison with the other states. This factor is likely to take on added importance as both the City and the County increase in population. In spite of the influx of retired persons and health seekers, the State is also drawing large numbers of young adults. A forecasted combination of a high birth rate and heavy immigration virtually guarantees a large population increase for the Chandler area within the next 10 to 20 years.

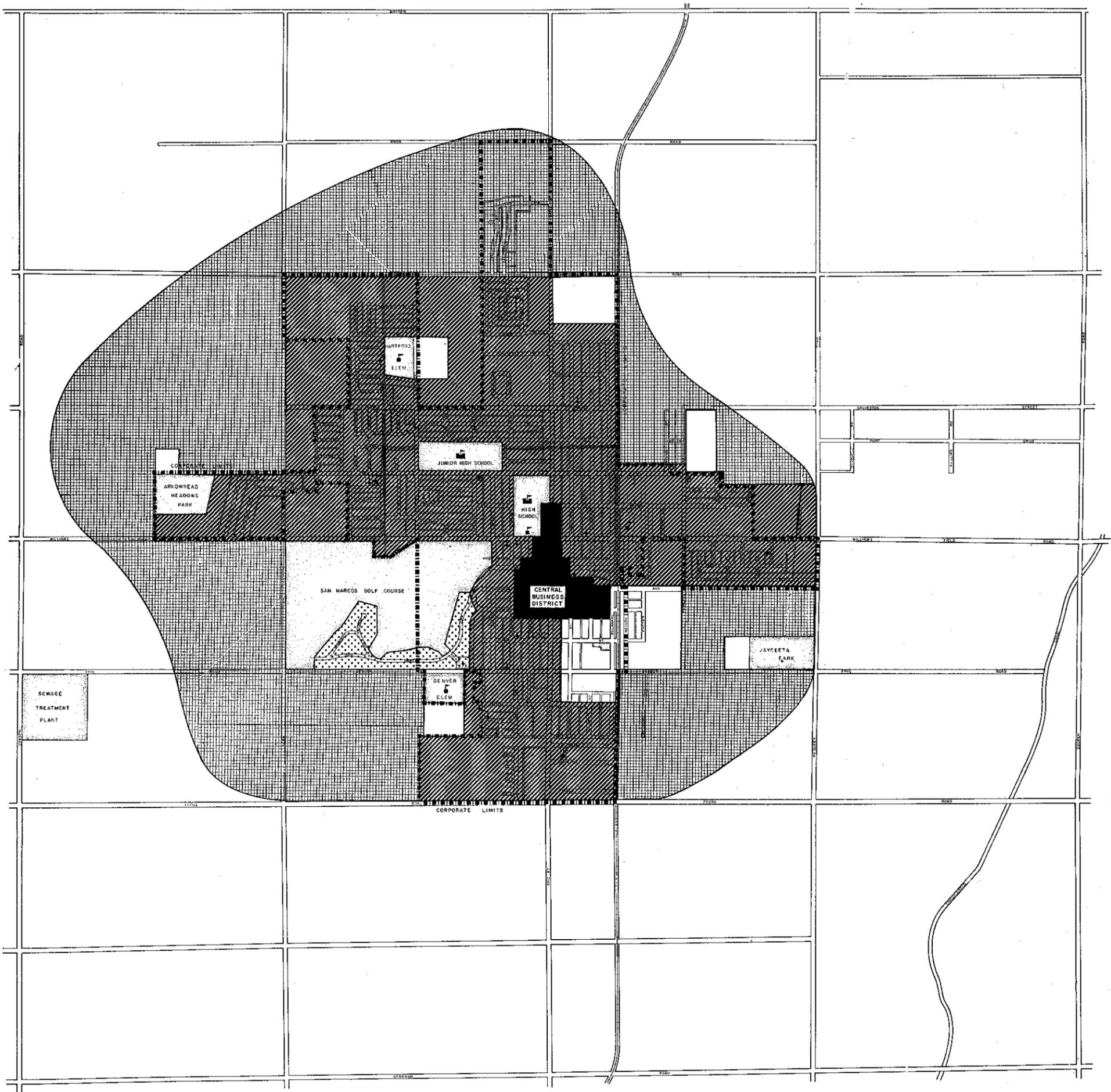
Existing Population Distribution and Density

Plate 7, Population Distribution - 1960, reveals the distribution within the City of Chandler and its surrounding area, one dot representing ten persons. Void areas are either undeveloped or occupied by commerce, industry, schools or parks. The area of heaviest population concentration is in the older part of the City south of Cleveland Street. Plate 7 further substantiates the effectiveness of the City's policy toward sewer extensions, as discussed in the previous chapter, because almost all of the dots are within the City limits.

The population density is shown on Plate 8, Population Density - 1980. The density here is given in persons per gross acre, large public, semi-public, commercial and industrial areas being omitted from the total land area for these calculations. The area south of Cleveland Street has the highest density at 12.25 persons per gross acre reflecting small lot size and few vacant lots.

CITY OF CHANDLER ARIZONA

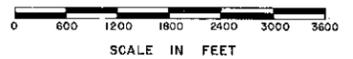
CITY PLANNING AND ZONING COMMISSION



LEGEND

PERSONS PER GROSS ACRE

	0 - 3.0		7.1 - 11.0
	3.1 - 7.0		11.1 - 15.0



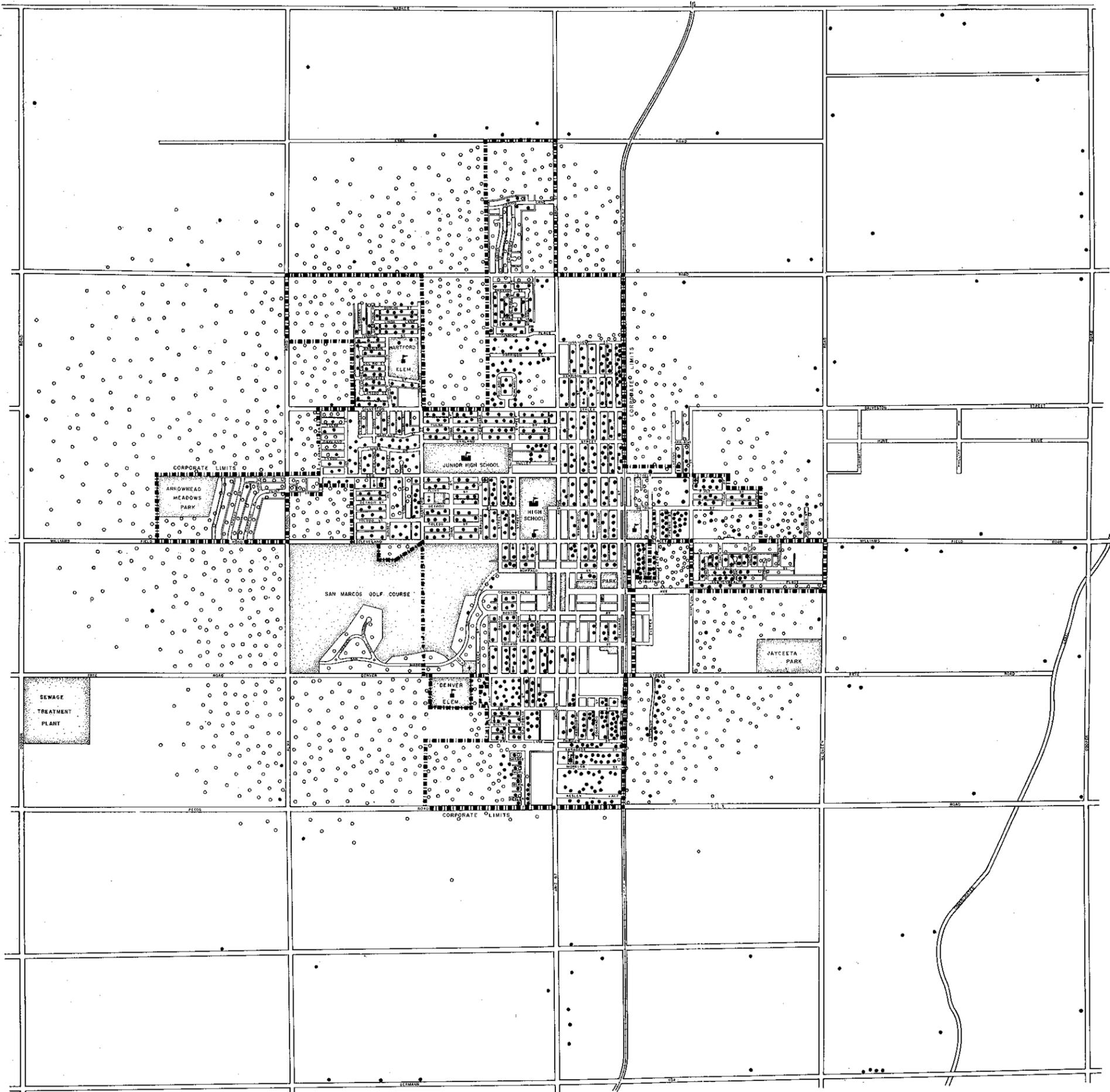
PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
JANUARY 1984 R.D.W.

POPULATION DENSITY-1980

PLATE NO. 10

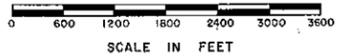
CITY OF CHANDLER ARIZONA

CITY PLANNING AND ZONING COMMISSION



ONE DOT EQUALS 10 PERSONS

- 1960 POPULATION
- FUTURE POPULATION



PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
DECEMBER 1980 D.R.Z.

POPULATION DISTRIBUTION - 1980

North of Cleveland Street the density drops to 9.58 persons per gross acre, within the area bounded by the 1960 city limits.

In the extreme eastern and western edges of the city, the density drops below 7.1 persons per gross acre.

Future Population Distribution and Density

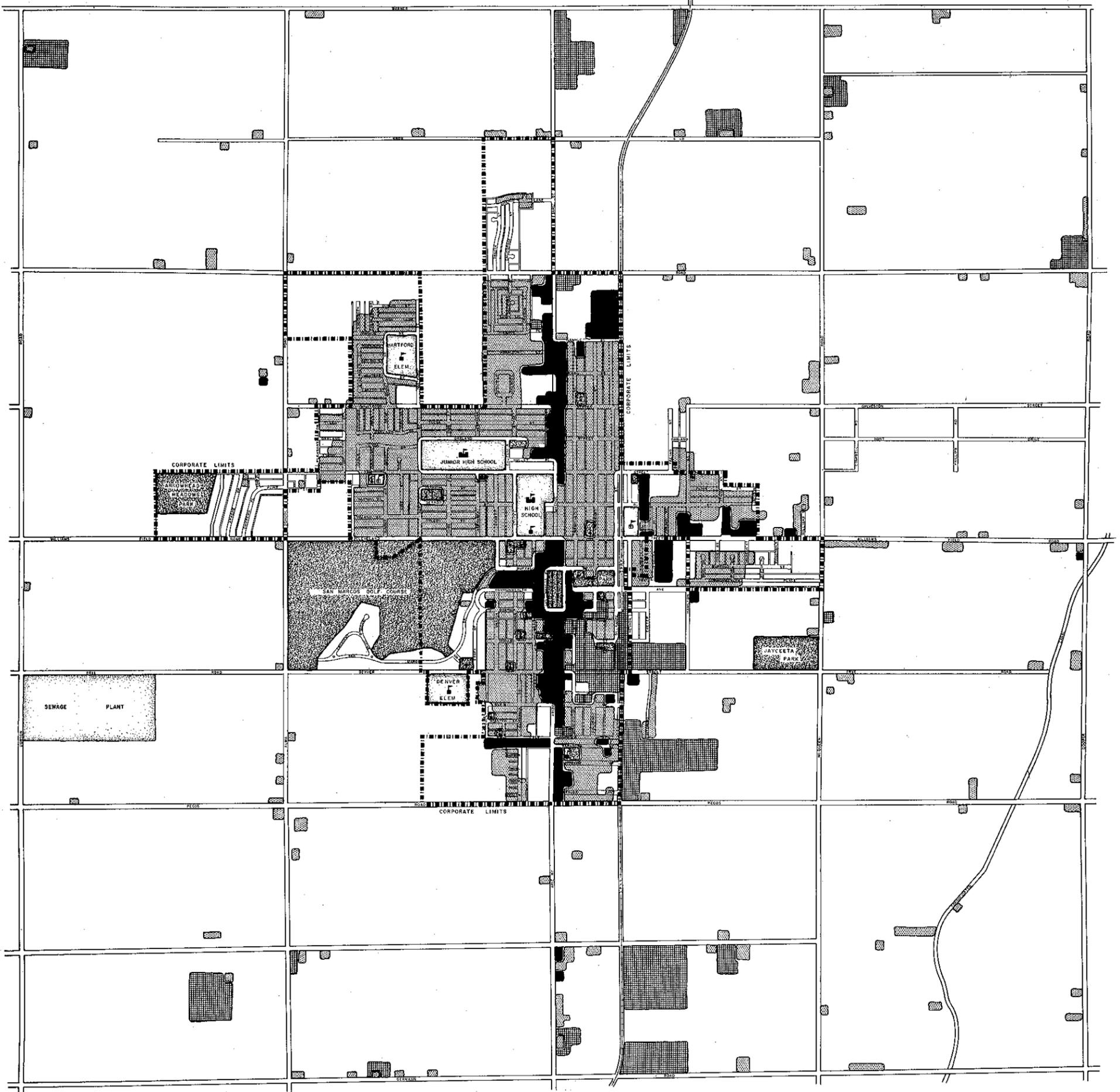
Chandler's 1980 projected population distribution and density patterns are shown on Plate 9, Population Distribution - 1980, and Plate 10, Population Density - 1980. The future population distribution "dot" map indicates graphically where the population will live; and the future population density map, the approximate number of people per gross acre expected to be living therein.

The 1980 urban area includes about 5.2 square miles. As previously mentioned, most of the new residential growth is expected to occur in the northwest quadrant, although extensions will undoubtedly occur in other sections of the City.

The area south of Cleveland Street will continue to be densely populated, increasing only where additional multi-family development occurs. Currently, the density pattern decreases in all directions as one moves from the center of the city to the suburban areas; this pattern is not expected to change perceptibly, with the exception of an apartment house cluster or two near the edge of the City. However, most of the areas on the periphery of the City will continue to consist of agricultural uses with dwelling units, thereby creating a low-density district.

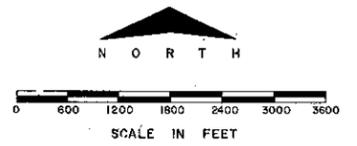
CITY OF CHANDLER ARIZONA

CITY PLANNING AND ZONING COMMISSION



LEGEND

- | | | | |
|--|---------------------------|---|-------------------------------|
|  | RURAL |  | PUBLIC AND SEMI-PUBLIC |
|  | SINGLE FAMILY RESIDENTIAL |  | EXISTING ELEMENTARY SCHOOLS |
|  | COMMERCIAL |  | EXISTING PAROCHIAL SCHOOLS |
|  | INDUSTRIAL |  | EXISTING HIGH SCHOOLS |
|  | PARKS |  | CHANDLER CITY LIMITS BOUNDARY |



PREPARED BY
MARICOPA COUNTY PLANNING DEPARTMENT
JANUARY 1961 D.R.Z.

GENERALIZED LAND USE 1960

PLATE NO. II

CHAPTER 3

EXISTING LAND USE

Area Included in Land-Use Survey

The purpose of a land-use survey is to determine the use of every lot, tract or parcel of land. The area encompassed by each land use for the entire Chandler area was tabulated and analyzed to determine significant factors. Quantitative land-use comparisons were made with other neighboring cities and measured against normal standards in order to determine deficiencies or abnormal balance of land use. From this examination, a future land-use plan was formulated to be in harmony with the population forecast, and the area required to accommodate the expected population increase. The plan then serves as a general guide for future physical development of the city.

The geographical area covered in the land-use survey is shown on Plate 11, Generalized Land Use - 1960. It is bounded by Warner Road on the north, Cooper Road on the east, Germann Road on the south and Dobson Road on the west, enclosing 16 square miles with the City of Chandler located near the center.

Existing Land-Use Pattern

The pattern of existing land use is portrayed by Plate 11; developed land has been classified as residential, commercial, industrial or public and semi-public. The vacant areas designate "undeveloped" land which,

for the purposes of a city planning report, include agricultural land. Certain public and semi-public uses can be located by referring to the appropriate symbol.

The land-use pattern of Chandler and vicinity is one of a consolidated and compact urban area centered upon the Arizona Avenue-Cleveland Street intersection. A scattering of uses, predominately residential, is found in the surrounding agricultural land. The Central Business District (CBD) is delimited generally by Cleveland and Denver Streets on the north and south, and by Washington and Oregon Streets, on the east and west, respectively. Other commercial districts are lined along Arizona Avenue either to the north or south of the CBD, or are spotted on Cleveland Street.

Residential uses surround the CBD and spread out in all directions, except due west where the San Marcos Hotel and Country Club are located. Much of the residential development lies to the north of the CBD, in an area bounded by Ray Road on the north, Cleveland Street on the south, the railroad tracks on the east, and Alma School Road on the west. Most of the newer development, especially, has accrued in this area. A smaller, but more densely populated residential district lies to the south of town, and also occurring to the east of the Southern Pacific Railroad along both sides of Cleveland Street. Scattered residences, many of them farm houses, are found along major streets and highways throughout the area.

The largest single area in public and semi-public use is the San Marcos Country Club; other areas include Chandler Senior and Junior High Schools, Cleveland, Hartford, Denver and Winn Elementary Schools, Jaycetta and Arrowhead Meadow Parks (the latter being undeveloped), and the municipal sewage treatment plant.

TABLE 2
EXISTING LAND USE - 1960
Chandler Study Area

Land Use	Acreage	Town of Chandler	
		% of Devel- oped Area	% of Total
Single-Family	348.4	33.4	24.1
Two-Family	11.0	1.0	0.8
3 or More Family	6.8	0.7	0.5
Trailer Parks	11.2	1.1	0.8
TOTAL RESIDENTIAL	377.4	36.2	26.2
TOTAL COMMERCIAL (Incl. Motels and Hotels)	73.4	7.0	5.1
Light Industry	20.8	2.0	1.4
Heavy Industry	14.4	1.4	1.0
RR and Public Utilities	10.1	1.0	0.7
TOTAL INDUSTRIAL	45.3	4.4	3.1
Streets and Alleys	420.0	40.2	29.1
Parks and Playgrounds	7.4	0.7	0.5
Schools	39.0	3.7	2.7
Other Public and Semi-Public	81.3	7.8	5.6
TOTAL PUBLIC AND SEMI-PUBLIC	547.7	52.4	37.9
TOTAL DEVELOPED LAND	1,043.8	100.0	72.3
Agricultural	134.0		9.3
Canals	---	---	---
Vacant	266.1		18.4
TOTAL UNDEVELOPED LAND	400.1		27.7
TOTAL ALL LAND	1,443.9		100.0

Note: Slight discrepancies in totals are the result of rounding to the nearest tenth.

The principal industrial area is located along both sides of the railroad between Commonwealth Avenue and Pecos Road.

Area Occupied by Existing Land Use

Table 2, Existing Land Use - 1960, tabulates the acreage occupied by the various land-use classifications, and lists each category as a per cent of the total area within the city.

The area outside Chandler's city limits, but within the area included by the land-use survey, was not tabulated since most of this land was undeveloped or used for agricultural purposes. There are a few scattered residences in the area; however, a tabulation of the land area used for these purposes would not be significant for urban planning purposes.

Nearly three-fourths of the area within the City of Chandler is developed or improved. The "leap-frog" development as prevalent in many central Arizona communities has not yet occurred in Chandler. This is attributed to the fact that adjoining land is very suitable and valuable for agricultural purposes and to policies of the city regarding extension of utilities.

The data in Table 2 is also useful for determining the adequacy of existing and proposed zoning districts.

Percentage of Developed Land Occupied by Existing Land Use

As an aid in comparing local use of land with that of other communities, Table 3, Percentage of Developed Land Occupied by Specific Uses, has been prepared to show the percentages of the total developed land occupied by the principal components of land use in Chandler as compared with that of the Phoenix Urban Area and the average of 10 other communities with a population between 10,000 and 25,000.

TABLE 3
PERCENTAGE OF DEVELOPED LAND OCCUPIED BY SPECIFIC USES
 Compared to Phoenix Urban Area and 10 Other Cities(1)

Land Use	Percentage of Developed Land		
	Chandler	Phoenix Urban Area(2)	10 Other Cities
Single-Family	33.4	46.3	47.83
Two-Family	1.0	2.2	1.79
3 or More Family	0.7	3.0	1.55
Trailer Parks	1.1		
TOTAL RESIDENTIAL	36.2	51.5	51.17
TOTAL COMMERCIAL (Incl. Motels and Hotels)	7.0	4.6	2.09
Light Industry	2.0	3.9	1.60
Heavy Industry	1.4	1.6	
RR and Public Utilities	1.0	0.8	3.03
TOTAL INDUSTRIAL	4.4	6.4	4.63
Streets and Alleys	40.2	24.8	24.71
Parks and Playgrounds	0.7	1.3	4.65
Schools	3.7	11.4	12.75
Other Public and Semi-Public	7.8		
TOTAL PUBLIC AND SEMI-PUBLIC	52.4	37.5	42.11
TOTAL DEVELOPED LAND	100.0	100.0	100.0

(1) Harland Bartholomew, "Land Uses in American Cities", 1955; Brentwood, Mo.; Clayton, Mo.; Highland Park, Illinois; Kirkwood, Mo.; LaGrange, Illinois; Richmond Heights, Mo.; University Park, Texas; Webster Grove, Mo.; Wilmette, Illinois; Winnetka, Illinois.

(2) The City of Phoenix and its urbanized unincorporated environs.

The percentage of land used as streets and alleys in Chandler represents 40.2 per cent of the total developed land; 15 per cent larger than that used for the same purpose in the Phoenix Urban Area or the average of ten other cities (note the similar percentage for the ten cities and Phoenix). Chandler's situation is attributed to the predominance of small blocks within the city, thereby lengthening the relative mileage of streets and alleys. The Buckeye and the Gila Bend study area also contained a high percentage of land for street and alley purposes (36.8 and 30.2, respectively; whereas, Gilbert's percentage turned out to be a low 19.7. This situation creates many unnecessary traffic problems, excessive cost of street maintenance, reduction of tax base, and in the CBD frequently leaves inadequate size blocks for development purposes. This situation can be remedied by adoption of subdivision regulations and thereby establishing minimum standards of street design.

The percentage of land used for commercial purposes in Chandler is also quite high when compared with Phoenix or the ten other cities. However, Chandler's role as the trading center for a large agricultural region as well as for a portion of the Williams Field clientele helps account for the large percentage. However, it is interesting to note that in a sample survey recently taken, inadequate shopping facilities in the Chandler area was listed as one of the main deficiencies by the residents interviewed (See page 49, Economic Analysis and Projection for the Chandler Urban Area). Lack of recreational facilities received some mention as an unfavorable residential quality for Chandler; yet, the percentage of developed land devoted to parks and playgrounds is only one-half the percentage exhibited by Phoenix and is even smaller when compared with the ten cities. Upon the development of several park site possibilities as mentioned earlier, Chandler's percentage could be raised considerably. The percentage of developed land within Chandler devoted to schools and to other public and semi-public use appears to compare favorably with the other cities.

TABLE 4
 RATIO OF EXISTING POPULATION TO LAND USE - 1960
 Compared to Phoenix Urban Area and Other Cities

Population - 1960	Developed Acres Per 100 Persons		
	Chandler Town(1) 9,531	Phoenix Urban Area(2) 397,836	10 Other Cities(3) 10-25,000
Single-Family	3.66	5.44	6.33
Two-Family	0.12	0.26	0.24
3 or More Family	0.07	0.35	0.20
Trailer Parks	0.12		
TOTAL RESIDENTIAL	3.97	6.05	6.77
TOTAL COMMERCIAL (Incl. Motels and Hotels)	0.77	0.54	0.28
Light Industry	0.22	0.46	0.21
Heavy Industry	0.15		
RR and Public Utilities	0.11	0.10	0.40
TOTAL INDUSTRIAL	0.48	0.75	0.61
Streets and Alleys	4.41	2.91	3.27
Parks and Playgrounds	0.08	0.15	0.62
Schools	0.41	1.34	1.69
Other Public and Semi-Public	0.85		
TOTAL PUBLIC AND SEMI-PUBLIC	5.75	4.40	5.58
TOTAL ALL USES	10.97	11.74	13.75

(1) Based on U.S. Census, 1960.

(2) Phoenix and urbanized unincorporated environs, 1958.

(3) Brentwood, Missouri; Clayton, Missouri; Kirkwood, Missouri; Richmond Heights, Missouri; Webster Grove, Missouri; Highland Park, Illinois; LaGrange, Illinois; Wilmette, Illinois; Winnetka, Illinois; University Park, Texas.

Chandler's excessive percentages relating to commerce and streets and alleys may in turn be reflected in the small percentage of land being used for residential purposes when compared to other communities, most of whom have 50 per cent of their total developed area put to residential use.

Ratio of Existing Land-Use Areas to Population

Table 4, Ratio of Existing Land Use to Population, indicates a quantitative amount of developed land in use per 100 persons within the city. Analysis of land-use data in relation to the population from many cities and urban areas throughout the United States has proven that a definite and predictable relationship exists between land use and population. Therefore, a ratio of existing land use to population for Chandler when compared with the same data for other cities that are similar in make-up and character is of considerable value in estimating the area to be needed by future populations.

In reference to Table 4, as the total ratio lowers, the intensity of land use increases, i.e. the number of acres per 100 persons decreases. Land is more intensely used in the Phoenix Urban Area than it tends to be used in the ten satellite cities, and the intensity is greater in Chandler than it is in Phoenix. Often, land is less intensely used in smaller cities and towns than in the larger cities; Chandler is an exception to this general rule. Other studies conducted by the Maricopa County Planning Department appear to verify the rule: the ratios of total developed land for the Buckeye urban area, the Gila Bend study area and the Town of Gilbert proved to be 23.43, 20.18 and 16.05 acres of developed land per 100 persons, respectively.

Analysis of Significant Factors in Land Use

Residential Land Use

Residential uses include single, two and multiple-family residences, and trailers and trailer parks. Land utilized for residential purposes involves more than one-third of the total developed land within Chandler and approximately one-fourth of the total area encompassed by the city. With 377 acres being occupied by residences, almost four acres per 100 persons are used for this purpose. For the most part, residential lots containing permanent structures vary between 6,000 and 10,000 square feet in area.

Single-family residences possess more than 90 per cent of the total developed residential land. Duplexes and multiple family units are scattered throughout much of the residential area, thereby being intermixed with single-family development. Two-family dwelling units (duplexes) tend to dominate the land use along Delaware Street between Ivanhoe and Galveston Streets. Trailer parks are concentrated along North Arizona Avenue and East Cleveland Street.

The older residential area surrounds the central business district and extends southward toward Pecos Road. Homes near the Central Business District are for the most part property maintained and structurally sound, while the condition of housing in the southern portion of Chandler varies all the way from good to substandard, the latter area containing much of the low income group of Chandler's population. Newer residential development is found in the northern and northwestern portions of the city, these homes being in the medium to upper price range.

The amount of residential land use per 100 persons in Chandler is low when compared to other cities (See Table 4). Residential land in Chandler occupies approximately two-thirds of the area required by Phoenix and

that used by the other ten satellite cities. Were statistics available, the average lot area per family in Chandler would prove to be considerably less than that found in the other cities and based on equal family size. (Note: As a general rule, larger and older satellite cities tend to take on the characteristics of the central city, especially if the satellite is located adjacent to the central city. Most of the ten other satellite cities fall into this category, and if the central city has a low residential ratio, the satellite will follow suite. For a composite ratio of central cities, i.e. cities similar to Los Angeles, Chicago or St. Louis, refer to Harland Bartholomew, Land Use in American Cities, 1955, Column 5, Table 2, Page 7, Land Use of the Phoenix Urban Area.

Commercial Land Use

For the purpose of this report, all commercial uses are considered in the aggregate, although detailed studies often separate commerce into local business, regional business, highway business or office use. Other combinations and possibilities may be undertaken in order to plan commercial uses, as long as the method fits the situation.

As the present population utilizes 0.77 acres per 100 persons, Chandler's commercial ratio exceeds the ratio for the Phoenix Urban Area by almost 50 per cent, and it is nearly three times the average ratio for the ten satellite cities.

Two factors help account for Chandler's high commercial ratio; namely, extensive lineal expansion and service to a large area outside the city.

The Buckeye study area also revealed an unusually high ratio, 0.97 being even higher than Chandler's. In the same manner as Chandler, Buckeye serves a large agricultural community.

Industrial Land Use

Light industry includes those warehouse and industrial uses which produce limited congestion or danger, without serious hazard to neighboring property. Heavy industry includes all uses which are extremely dangerous or nuisance-producing. In this report, livestock feeding operations and cotton gins have been placed in the heavy industrial category.

Railroads and public utilities receive mention as a separate classification because these uses must sometimes be permitted to invade non-industrial districts in order to serve the public.

The combined ratio for light and heavy industry in Chandler (0.37) is somewhat smaller than that ratio for Phoenix (0.65), but it is considerably greater than the ratio for the ten satellite cities (0.21). Chandler and Phoenix have an equally low population land-use ratio for railroads and public utilities when compared with both groups of ten cities.

In past years, industry has generally grouped itself along or near railroads, because it was highly dependent upon rail transportation. This trend has occurred in Chandler in the past, and vacant areas along the railroad may be the most logical location for industrial expansion in the future. However, the relative importance of the railroad has declined considerably, highways becoming more important. As pointed out by Western Business Consultant's Economic Analysis and Projection, the location of the railroad through Chandler may be an *unfortunate situation* because heavy industry should not be located inside the existing city, and yet this type is the most likely industrial use to need railroad facilities. In order to preserve desirable residential and tourist qualities, only light or "garden type" industrial uses would be permitted. Because light industrial uses do not usually need abutting railroad facilities, a tentative conclusion is reached that the railroad no longer may be an

important factor in attracting industry to the urban area. The railroad, either the Southern Pacific mainline, the West Chandler Branch or the Gilbert-Higley Branch, could be important in the location of certain types of heavy industry in more isolated and favorable locations.

Public and Semi-Public Land Use

Public land uses include streets, parks and playgrounds, sites occupied by governmental buildings, public schools and other institutions. Semi-public ordinarily refers to uses of a "public" nature, yet owned by private enterprises, such uses including charitable organizations, churches and private schools, country clubs, hospitals and cemeteries.

Streets and alleys, as mentioned previously, occupy an unusually high percentage of the city's developed land. As Table 4 indicates, Chandler's ratio is also unusually high, being a third again higher than the ten satellite cities. However, Chandler's situation is not unusual when comparison is made with several other towns in Maricopa County.

The amount of land in use for parks and playgrounds is low when compared with all other cities or groups of cities. However, the development of Arrowhead Meadows Park and a municipal country club would help considerably, placing it more in line with other communities.

The ratio for schools in Chandler, at 0.41, falls somewhat short of the ratios for the Buckeye and Gila Bend study areas, which number 0.99 and 0.80, respectively. Unfortunately, no direct comparison can be made at this time with Gilbert, Phoenix or the two groups of satellite cities; because in these cases, no separate school category was listed.

The San Marcos Country Club occupies the greater portion of the "other public and semi-public" category. This division of land use, having a ratio of 0.85 in Chandler, is larger than the same category as experienced

by the Buckeye and Gila Bend study areas, being 0.22 and 0.52, respectively. When the ratios for "schools" and "other public and semi-public" are added together, Chandler's numerical value of 1.26 compares favorably with Phoenix's ratio of 1.34 but falls below the 1.69 listed for the ten satellite cities.

Undeveloped Land

Agricultural and vacant land grouped together as undeveloped land, accounted for slightly more than one-fourth of the total area within the City of Chandler. Nevertheless, this percentage of 27.7 is smaller than that to be found existing in other central Arizona communities; for example, the corresponding values for the cities or towns of Buckeye, Gilbert, Mesa and Scottsdale are 34.2 per cent, 57.5 per cent, 58.1 per cent, and 41.4 per cent, respectively. Annexation policies for the individual cities, in part at least, account for the differences listed above.

Ordinarily, topographic limitations and the forces of land economics are important reasons for the existence of vacant land. Certainly, the former does not apply to most of Chandler as the land is level and suitable for development. The presence of the railroad tracks may limit the ease of extending utilities to the east side of the city, sewer line extensions especially may be difficult. It is recommended that present sound policies regarding the extension of utilities - especially sewer lines - be continued as means of encouraging orderly and economical growth.

Scattering of growth would require utilities to extend through vacant areas and would increase costs for various governmental facilities and services.

TABLE 6
COMPARATIVE LAND-USE DATA
Chandler

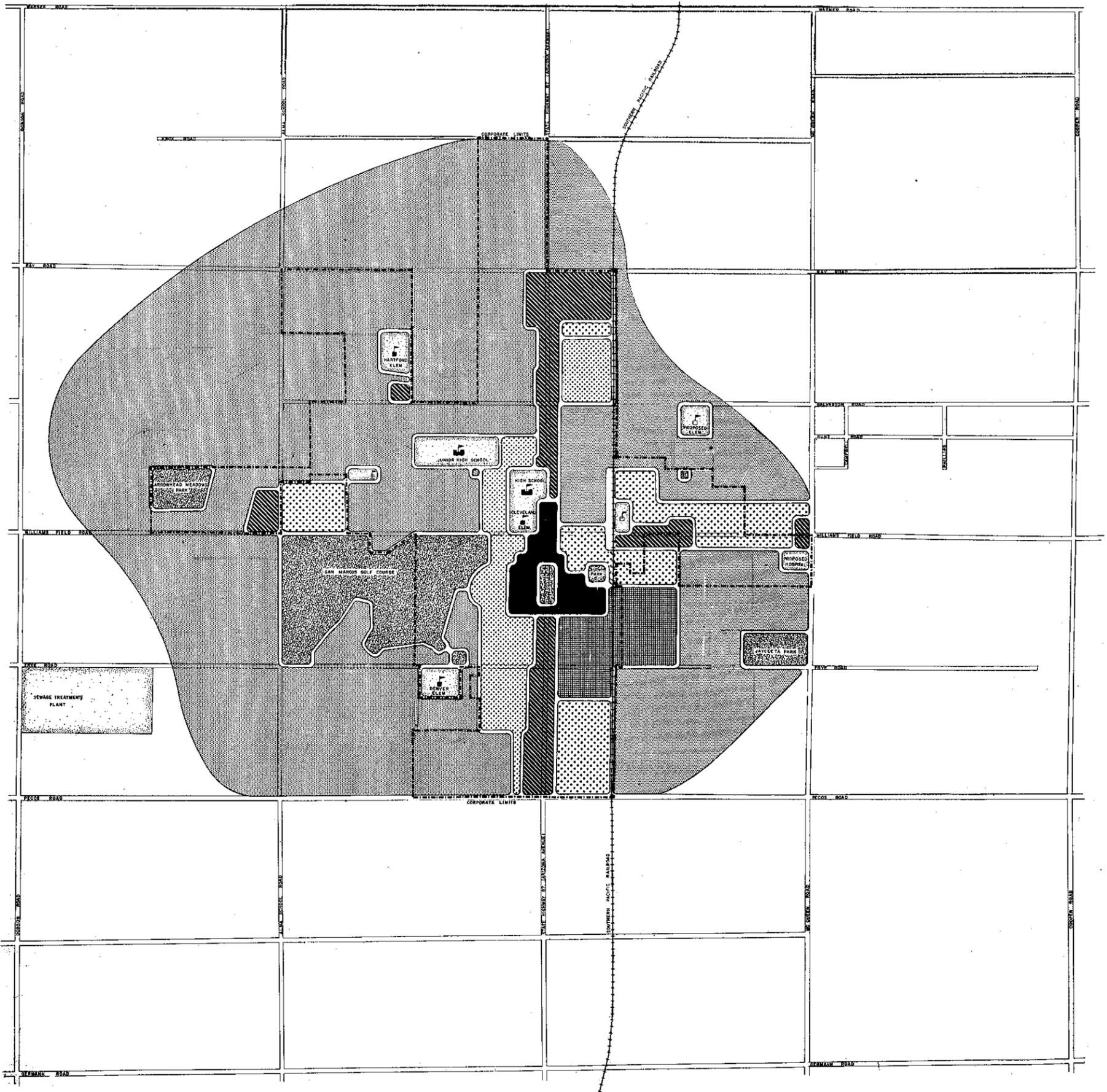
Land Use	1960 (acres) Land Use	Future Land (acres) Requirements(1)	Future Land-Use Map(2)
Single-Family	348.4	1,019.0	1,638.0
Two-Family	11.0	24.3	88.8
3 or More Family	6.8	20.3	138.4
Trailer Parks	11.2	30.4	
TOTAL RESIDENTIAL	377.4	1,094.0	1,865.2
TOTAL COMMERCIAL (Incl. Motels and Hotels)	73.4	131.9	123.6
Light Industry	20.8	105.6	60.6
Heavy Industry	14.4	30.4	
RR and Public Utilities	10.1	17.3	20.0
TOTAL INDUSTRIAL	45.3	148.3	80.6
Streets and Alleys	420.0	609.0	837.7
Parks and Playgrounds	7.4	249.7	249.7
Schools	39.0		
Other Public and Semi-Public	81.3	203.0	193.4
TOTAL PUBLIC AND SEMI-PUBLIC	547.7	1,061.7	1,280.8
TOTAL DEVELOPED LAND	1,043.8	2,435.9	3,350.2
Agriculture	134.0	---	---
Vacant	266.1	---	---
TOTAL UNDEVELOPED LAND	400.1	---	---
TOTAL ALL USES	1,443.9	2,435.9	3,350.2

(1) Based on Table 6, Estimated Land-Area Requirements - 1980.

(2) Based on Plate 12, Diagrammatic Future Land-Use Plan.

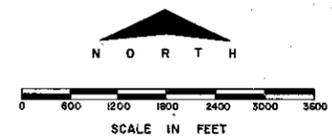
CITY OF CHANDLER, ARIZONA

CITY PLANNING AND ZONING COMMISSION



LEGEND

- | | | | |
|--|-----------------------------|---|-------------------------------|
|  | RURAL |  | PUBLIC AND SEMI-PUBLIC |
|  | SINGLE FAMILY RESIDENTIAL |  | EXISTING ELEMENTARY SCHOOLS |
|  | TWO FAMILY RESIDENTIAL |  | PROPOSED ELEMENTARY SCHOOLS |
|  | MULTIPLE FAMILY RESIDENTIAL |  | EXISTING PAROCHIAL SCHOOLS |
|  | CENTRAL BUSINESS DISTRICT |  | EXISTING HIGH SCHOOLS |
|  | COMMERCIAL |  | CHANDLER CITY LIMITS BOUNDARY |
|  | INDUSTRIAL |  | SOUTHERN PACIFIC RAILROAD |
|  | PARKS | | |



PREPARED BY
 MARICOPA COUNTY PLANNING DEPARTMENT
 JANUARY 1961 R.D.W.

DIAGRAMMATIC FUTURE LAND USE PLAN

PLATE NO. 12

TABLE 5
ESTIMATED LAND AREA REQUIREMENTS - 1980
Chandler and Environs

Land Use	Acres Per 100 Persons Estimated Population	Total Land Required - 20,300(1)	% of Total Developed Acreage
Single-Family	5.02	1,019.0	41.83
Two-Family	0.12	24.3	1.00
3 or More Family	0.10	22.0	0.83
Trailer Parks	0.15	300.4	1.25
TOTAL RESIDENTIAL	5.39	1,094.0	44.91
TOTAL COMMERCIAL	0.65	131.9	5.41
Light Industry	0.52	105.6	4.33
Heavy Industry	0.15	30.4	1.25
RR and Public Utilities	0.06	12.3	.51
TOTAL INDUSTRIAL	0.73	148.3	6.09
Streets and Alleys	3.00	609.0	25.00
Schools, Parks and Playgrounds	1.23	249.7	10.25
Other Public and Semi-Public	1.00	203.0	8.34
TOTAL PUBLIC AND SEMI-PUBLIC	5.23	1,061.7	43.59
TOTAL ALL USES	12.00	2,435.9	100.0

(1) Western Business Consultants, Inc.

CHAPTER 4

FUTURE LAND USE

Future Land-Use Requirements

The preceding chapter has analyzed the characteristics and deficiencies of existing land use within the City of Chandler, the amount of land used for various urban uses, and relationship of existing population to existing land use. Adjusted population—land-use ratios applied to future population estimates produces the amount of land needed for all urban purposes to accommodate the future population. Table 5 shows a breakdown of the future land-use requirements for the Chandler Urban Area by 1980. The total land area required is 3.8 miles based on the adjusted population land-use ratio of 12 acres per 100 persons. This area plus an additional 1.4 square miles is shown on the Diagrammatic Future Land-Use Plan, Plate 12. The additional land represents 27 per cent more land than is actually needed to accommodate the 1980 population, and is the amount expected to be undeveloped within the urban area.

This compact pattern of urban development will help keep the cost of public service to a minimum and help the community function more efficiently. However, this plan should be periodically reviewed and revised when warranted to adjust to new and desirable concepts of community development or other unforeseen conditions and needs.

Table 6 compares the existing land-use areas with future land-use requirements, and tabulates the amount designated on the Future Land-Use Map. Some changes can be expected in the older section of town, to make

TABLE 7
COMPARISON OF EXISTING AND FUTURE POPULATION
LAND-USE RATIOS

Population Land Use	Phoenix Urban Area		Chandler	
	1958 397,836	1980 1,000,000	1960 9,531	1980 20,300
Single-Family	5.44	6.90	3.66	5.02
Two-Family	0.26	0.16	0.12	0.12
Multi-Family	0.13	0.13	0.07	0.10
Trailer Parks	0.22	0.21	0.12	0.12
TOTAL RESIDENTIAL	6.05	7.40	3.97	5.39
TOTAL COMMERCIAL	0.54	0.70	0.77	0.65
Light Industry	0.46	0.60	0.22	0.52
Heavy Industry	0.19	0.19	0.15	0.15
RR and Public Utilities	0.10	0.09	0.11	0.06
TOTAL INDUSTRY	0.75	0.88	0.48	0.73
Streets and Alleys	2.91	3.00	4.41	3.00
Parks and Playgrounds	0.15	1.00	0.08	1.23
Schools	1.34	1.35	0.41	
Other Public and Semi-Public	---	---	0.85	1.00
TOTAL PUBLIC AND SEMI-PUBLIC	4.40	5.35	5.75	5.23
TOTAL ALL USES	11.74	14.33	10.97	12.00

room for modern industrial plants, shopping centers, and large-scale housing and apartment projects.

Residential Requirements

The compactness of Chandler's residential districts, is reflected by the relatively low population land-use ratio; a feature that will not likely continue at the same degree into the future. Generally speaking, the newer homes in Chandler occupy larger lots than in the older districts. By 1980, the existing single-family population land-use ratio of 3.66 is expected to increase to about 5.02 acres per 100 persons, and that additional acres will be needed for residential purposes. A complete analysis comparing the existing and future land-use ratios between the Phoenix Urban Area and Chandler is shown on Table 7.

The Diagrammatic Future Land-Use Plan anticipates most of the new development to take place in the north-west quadrant of the city, an area particularly well suited for this purpose. The proposed new sewage treatment plant will enable the collection system to be easily extended into this location, as opposed to a more lengthy and difficult extension into other parts of the city, especially on the far-southern side and to the east of the railroad. Actually, the large-scaled presence of new growth in the north-west quarter promoted the location of the proposed treatment plant.

There is a good possibility that Chandler will experience considerable suburban growth in the next 20 years (see Economic Analysis and Projection, Page 40.) In the past, many of the persons who lived in Chandler worked at the Williams Air Force Base. (see Economic Analysis and Projection, Page 44, Table VI) The majority of the suburbanites of the future are likely to commute to the Kyrene Industrial District, Mesa, or to Phoenix proper and less economic importance will be attached to Williams Air Force Base.

Arterial highways will become an important factor in directing future suburban growth in Chandler. If Williams Field Road is widened and improved

to the west of the town and a good connection is provided with the proposed Tucson-Phoenix interstate expressway, then much of the new growth may take place west of the town rather than northwest.

It would not be wise to discount the possibility of some development to the east or to the south-west beyond the San Marcos Country Club. The overall efficiency of the City will undoubtedly be high if its growth pattern is controlled by orderly scheduling and extension of public services, and discouragement of urban sprawl. Extensive residential growth east of the railroad tracks is not probable due to the difficulty of serving the area with sanitary sewers, and the existing pattern of mixed and marginal land uses. The free interchange of traffic from one side to the other is also a problem.

The future two-family, multi-family and trailer parks population land-use ratios are expected to remain the same and only a small increase in land area required. (See Table 7)

Ordinarily, apartment houses and other multiple-family dwellings will be found near the CBD of a large city. Chandler is not large enough to need a vast supply of multi-family units within the foreseeable future, and no large concentration of these uses is expected. The future land-use plan shows small concentrations of multi-family uses along East Cleveland near Alma School Road, and near Arizona Avenue both north and south of the CBD. Two-family uses are described on the plan to occupy primarily the older residential area to the west of the CBD and the high school. However, single-family uses may remain quite dominant within this area for a long period of time. Trailer parks present special problems that cannot be answered in a general manner. It is recommended that trailer parks be located near the edge of the City, either along Arizona Avenue both to the north and south of town, or east of town along either side

of Williams Field Road. Special attention should be given to the location, landscaping, and supervision of each park. The City of Chandler now controls this use by means of a special ordinance, in combination with the zoning ordinance.

Commercial Requirements

The future commercial land-use ratio is expected to drop slightly from the existing population land-use ratio, see Table 7. This may be explained in the following way: Most of the increase in population in the Chandler trade area will occur in the City itself, the ratio would only keep pace with the existing ratio if the surrounding farm population grew as rapidly as the City population (as a general rule, when a city increases its population the commercial land-use ratio tends to decline.) Further, it is hoped that future commercial development will make more efficient use of the land than it has in the past; particularly it is hoped that the tendency toward strip expansion along the highway can be arrested.

The development of the Tucson-Phoenix Interstate Expressway in the vicinity of West Chandler and the subsequent partial removal of through traffic from Arizona Avenue may help contain temporarily strip zoning of the highway. However, the removal of through traffic, which has no business to conduct in Chandler, will primarily give local traffic and pedestrians a little breathing space rather than abolish highway business. Traffic on Arizona Avenue will be almost as great as before, due to expected increases in local traffic, the biggest difference in the future being that few drivers will be in such a hurry to get through town.

It is expected that commercial uses will require 131.9 acres by 1980, which means that about 60 acres of new development will be needed.

Industrial Requirements

The following projected land-use requirements are based upon the adjusted population land-use ratios, and the industrial potential outlined in the report entitled Economic Analysis and Projection for the Chandler Area.

Future industrial land-area requirements for the Chandler Urban Area are expected to reach approximately 150 acres or an expected net increase of 103 acres of land, over what is now in use. This represents the land-use requirements for all light and heavy industries, railroads, and all public utilities. Approximately 85 acres or 82 per cent of the additional acreage will be needed for light industrial uses, the remaining 18 acres for heavy industry, railroads or public utilities.

The light industrial population land-use ratio is expected to increase from 0.22 to 0.52 acres per 100 population by 1980, or only 0.08 less than that projected for the Phoenix Urban Area. The heavy industrial land-use demand is expected to remain low and a continued population land-use ratio of 0.15 acres of land per 100 population. By 1980 heavy industrial uses will require 30.4 acres of land or approximately twice the amount now in use.

The future land use demand for railroads and public utilities have been lumped together for the analysis. They will require a total of approximately 17 acres of land which represents a projected increase of only 7.2 acres of land. This low figure is the result of lowering the existing population land-use ratio of 0.11 to 0.06 acres per 100 persons.

The Chandler area contains many large vacant tracts of land well suited for garden or light industrial uses. These tracts are located both north and south of town situated between the Southern Pacific Railroad tracks and Arizona Avenue.

Schools, Parks, Public and Semi-Public Land-Area Requirements

The future land-area requirements for public schools, parks, and playgrounds has been consolidated and estimated to be 203 acres, or 156 additional acres of land. Most of the additional acreage is needed for recreational purposes to take care of the existing shortage and to meet future recreational requirements based on national standards. The existing park acreage of 7.4 acres is very low and deficient by 92 acres, when measured against a standard of 1 acre of land for each 100 persons. Only 43 additional acres of park land will be required if existing deficiencies can be corrected.

The existing school system contains approximately 39 acres of land. This accommodates one high school, one junior high school, and three elementary schools, excluding land used for parochial schools. The future land-area requirement for the public school system is estimated to be near 30 acres, sufficient to accommodate two additional elementary schools and some room for expansion of the others if deemed necessary. A comprehensive study of the Chandler School System is currently in progress, being prepared by the University of Arizona. The study will include a survey of the existing curriculum, other classroom needs, and land needed for future school plants.

Proposed parks, schools, and major-street locations have purposely not been shown on the Future Land-Use Plan, Plate 12. These specific locations will be determined later in subsequent reports. These studies will also include desirable areas for a civic center, off-street parking facilities, and other necessary public areas.

Implementing the Plan

The zoning ordinance and subdivision regulations are the principal means of implementing a comprehensive plan. A new zoning ordinance updating the ordinance adopted in 1926 is currently under consideration by the City Planning and Zoning Commission. The zoning ordinance and district map are based upon the existing land use, zoning, and future land-use plan by grouping together similar or compatible land uses thereby stabilizing property values and promoting the health, safety, and general welfare of the community. The comprehensive plan will have to be revised and amended from time to time due to changing conditions and particularly the zoning district map. These changes should be acted upon in reference to long-range objectives of the community plan.

Proper zoning and administration can help increase the efficiency of providing public services, reduce traffic hazards by removing strip zoning, and to make the community a more desirable place to work, live, and play.

Future subdivision design can do much to improve the efficiency of the street pattern. A partial measurement of efficiency is indicated by the land-use ratio for streets and alleys. As previously indicated, it is hoped that this ratio will become lowered considerably at a future date. However, subdivision controls, either of a formal or informal nature, will have to be exercised in order to accomplish this result. Not only will savings accrue to the developer, but also to the city due to reduced maintenance of curb, gutter and sidewalks. Other benefits include more taxable land made available and reduced construction and maintenance costs for all utilities.

Most of the patterns for land use in the Chandler area are fairly well set, and the future should pose no unusually difficult problems. Apartment sites and sites for trailer parks may gain considerable attention, but

additional land for these uses is not likely to be considerable. Commercial and industrial patterns are well established, although sites for future shopping centers may become controversial. In order to avoid the perpetuation of unsightly vacant land along major streets and highways, care must be taken not to over-zone for commercial and industrial uses. The land-use requirements determined are for a 20-year period of time, and should not all be provided for at this time but slowly and geared to a five-year capital improvement program.