The General Plan is a guide for the City's anticipated future development. The appropriate uses of public and private land and the general locations of all necessary and desirable public facilities are indicated on the Plan.

The development of the General Plan proceeds through six interrelated studies based on the existing physical, economic and financial characteristics of the City. Analyses of these studies, regarding the future development of the City's population, economy, streets, the need for schools and parks, land use and finance form the bases for the recommendations of the General Plan.

The General Plan and its accompanying recommendations will enable the City Council and the City Plan and Zoning Commission to consider alternatives in determining policy decisions affecting future land development. The analysis and projection of population and land use needs provide the basis for determining the areas in which future development is most likely to occur. By the decisions made by the City Council and the City Plan and Zoning Commission, private property owners and public agencies will be able to relate their projects to the General Plan.
The basic objective of land use planning is to provide a desirable physical environment for the residents of the City.

Land use planning encompasses the study of existing land for all urban uses, including the location and amounts of land used for living, working, travel and recreation. Through the study of the inventory and analysis of existing land utilization and forecast of expected land needs, necessary amounts of land are designated for appropriate land uses.

The land use planning studies incorporate anticipated residential development, sites for industrial and commercial expansion of both new and existing facilities, location and extent of public school and park sites, logical extensions of existing streets and proposals for new streets and other anticipated future development needs.

The proposed land use pattern, shown on the 1980 Land Use Plan, is a logical expansion of the existing pattern of the City. Except for the incorporation of proposed facilities and the extension of industrial coverage, the Plan consists primarily of extension or revision of existing development, recognizing that the basic urban character of the City was developed long ago. This pattern of development was basically sound and has been the basis for the City's stable character. It would be illogical and unnecessary to attempt to drastically alter the land patterns as they have developed over the last several decades.
GENERALIZED LAND USE

RESIDENTIAL
COMMERCIAL
INDUSTRIAL
PARKS
OTHER PUBLIC
RAILROADS
OPEN

JULY, 1959

DES MOINES CITY PLAN AND ZONING COMMISSION
## LAND USE COMPARISON

<table>
<thead>
<tr>
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<td>14,690</td>
<td>28.6</td>
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<td>620</td>
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<td>17,890</td>
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<tr>
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<td>1,580</td>
<td>2.3</td>
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<tr>
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<td>3,000</td>
<td>4,220</td>
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<td>Public &amp; Semi-Public</td>
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<td>6,540</td>
<td>7,920</td>
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<td>TOTAL DEVELOPED</td>
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<td>**</td>
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<tr>
<td>Water</td>
<td>1,140</td>
<td>1,140</td>
<td>1,140</td>
<td>**</td>
<td>**</td>
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<tr>
<td>TOTAL ACRES</td>
<td>40,970</td>
<td>40,970</td>
<td>40,970</td>
<td>**</td>
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</tbody>
</table>

*Average of 7 cities 100,000 to 250,000 population from "Land Use in American Cities", Harland Bartholomew, 1955

**Included in other land uses.
Urban land for housing is one of the most important uses of land to be considered. The purpose of residential area planning is the establishment and maintenance of pleasant neighborhoods through the development of protection from incompatible land uses, availability of a healthy environment and, in general, a desirable balance between residential land and all other land uses.

The Existing Residential Land Use map shown above illustrates the pattern of housing development which has occurred since the founding of the City. The black areas denote the location of residential development. Areas subject to flood are relatively free from residential encroachment, areas of rough topography are not developed and, in general, residential development has taken place where land was most easily accessible and only moderately sloping.
PATTERN OF DEVELOPMENT

Land used for single-family housing, duplexes and apartments occupies slightly less than one-half of the total developed area of the City of Des Moines, and yet the density, or persons per acre, is generally lower than that found in other cities. Small numbers of multi-family dwellings and a general desire for larger than average single-family lots, with large open spaces, has fostered the low-density residential character of Des Moines. Although large lot development has become characteristic of Des Moines, the City has not been plagued by extensive residential scattering. Since incorporation, Des Moines has developed in a relatively compact manner.

As in other major cities, Des Moines has had some residential growth which has deviated from the City's compact residential pattern established in the early part of this century. Following World War II, the Federal Housing Agency's policy on accelerated housing construction promulgated the subdivision of land for the rapid housing of a large segment of the veteran population. The residential subdivisions of the 1950's were frequently removed from existing urban development because of less expensive developable land near the City's corporate limits. The pattern of compact residential growth through the 1930's followed by wider spread residential development near the corporate limits in the 1950's left vacant areas in between which remain to be developed. The vacant areas have permitted the acceptable extension in some cases of commercial and industrial uses, particularly in the southern and eastern parts of the City. It is expected that by 1980 the remaining undeveloped tracts will be used as designated in the General Plan.
RATE OF GROWTH

The population of Des Moines and Polk County is increasing at a rate more rapid than the average for the State of Iowa. The national trend of suburban expansion has been apparent in the Metropolitan Area for some time as evidenced by rates of growth of the City and Polk County for the past three decades. In this period of time, County growth has exceeded City growth by an average of 10.2 per cent. Although County growth has proportionately exceeded City growth since 1930, City growth numerically has been much greater. For example, between 1950 and 1960 the County population increase was approximately 9,200 or 19.3 per cent, while the City's growth exceeded 31,000 or 17.4 per cent.

In 1962, 13,650 net acres of land were required to house the City's population of approximately 213,000 persons. Between 1962 and 1980 the anticipated population increase of 38,000 persons will require an additional 3,880 net acres for residential uses with an additional 970 acres needed for streets and alleys. This increase in residential land represents approximately 11,300 single-family homes on 4,700 gross acres; 80 gross acres for two-family housing; and 70 gross acres for multiple-family housing and apartments.
PROPOSED RESIDENTIAL DEVELOPMENT

The proposed residential pattern is a projection of the pattern developed in the past. High density housing should logically be centrally located with less dense housing developed further from the central area. The Land Use Plan for 1980 proposes high density residential areas of more than 40 persons per net acre in the areas adjacent to the central business district. Medium density housing of from 21 to 40 persons per net acre is proposed to reinforce those already located beyond the high density areas. Most of the residential areas built between 1900 and 1940 constitute the medium density pattern. Houses built in that period were, for the most part, well-built, single family homes on relatively narrow lots.

Furthest from the central business district and encompassing the largest residential classification is the low density pattern which overlies the remainder of the entire residential City. Included are areas containing up to 20 persons per net acre. These areas include most of the housing developed between 1940 and 1960, as well as old residential homes on large lots.

The concentric circle pattern of residential land uses proposes the highest concentration of people near the central business district. This pattern tends to: preserve the land values where the greatest investment has been made; encourage economic vitality within the downtown shopping area; and provide a sufficient population base for efficient, economic operation of a well-developed public transit system. The value that can be derived from a residential system such as described herein is the stabilization of land values from the center outward. A proper balance is achieved where the highest valued land is used the most intensely.
RESTRICTIONS TO GROWTH

Floods during the years of 1944, 1947 and 1954 covered an average of 6,000 acres, or 15 per cent of the total land area of the City. As long as the possibilities of flooding remain, development of this land for urban uses is not feasible. The disadvantages of limited development within the flood plain are offset by the potentiality of the land for riverfront improvement and open space recreation.

In the past, the railroads have created physical boundaries for residential areas. This is evident by the lack of residential development between Dean Avenue and the Des Moines River, from East Thirtieth Street to the Des Moines eastern corporate limits. The same lack of residential development occurs west of the Rock Island rail line paralleling Delaware Avenue.

Topography has restricted development in certain areas of the City since the City's founding. Ravines and steep bluffs over 12 per cent grade are considered undesirable for any type of urban development.

The development of the airplane and particularly the jet engine has created an additional restriction to residential development. Restrictions on residential locations and building heights surrounding the Des Moines Municipal Airport are imposed through airport zoning adopted by the City under the regulations of the Federal Aviation Agency. The regulations are based on the noise and safety factors created by the Boeing 720 aircraft. Most critically affected is the area adjacent to the southeast end of the northwest-southeast runway. This area should not be further intensively developed for residential use.
HOUSING

Des Moines has always been a community with strong feelings toward home ownership. According to the 1960 Census, 64.7 per cent of all of the 71,700 housing units in the City are owner occupied and have an average value of approximately $13,000. Less than five per cent of the total housing units are unoccupied.

Because of the high degree of home ownership and residential pride, only 3,364 housing units or 4.7 per cent are in need of major repairs. However, the number of deteriorated houses is much higher—16.1 per cent—as classified by the U. S. Bureau of Census.

Programs for the upgrading of housing and residential environment can be initiated for the conservation of neighborhoods. An example is the program instituted in the general vicinity of East Fourteenth Street and Cleveland Avenue in which 270 dwelling units and their environs are being rehabilitated under the Neighborhood Improvement Program. The program represents a coordinated effort between the City and the residents to help the area maintain an attractive neighborhood and retain property values. Concentrated municipal code enforcement plus street paving, lighting, and tree planting represent part of the efforts by the City. Similar improvements program should be carried out by other parts of the City.
COMMERCIAL

Of all types of urban land uses, commercial activities most accurately reflect the tempo of the City's development. Since the era of the general store, commercial functions have solidified the community.

The map of Existing Commercial Land Use shown above indicates the extent to which commercial activity, the automobile, and their complex interrelationships have created a land pattern in Des Moines. Growth outward from the center of the City has created two distinct rings of commercial activity. The first ring consists of neighborhood shopping areas for convenience purchases, such as groceries and personal services, all of which are closely related to day-to-day living. The second and most distant ring from the central business district is comprised of regional shopping areas serving not only Des Moines, but also the entire Metropolitan Area.
CENTRAL BUSINESS DISTRICT

The importance of the central business district in the economic life of the City cannot be overrated. The future economic strength of the City depends upon the ability of the central business district to perform its function as the heart of commercial activity for the urban region and the total trade area.

Until recent years, the central business district had adequately performed its function. However, the share of retail business held by the central business district has been declining as outlying centers have increased product availability and close-in parking. The central business district still remains the prime provider for comparative shopping commodities, e.g., clothing, furniture, cars and major appliances, for the Des Moines Metropolitan Area.

The map of the central business district on page 49 incorporates the recommendations of two plans. The plan prepared for the Committee of 100 of the Greater Des Moines Chamber of Commerce and adopted by the City Council in August of 1961 is shown for the area west of the Des Moines River. For the area east of the River, the plan recommended by the East Des Moines Civic Development Association is shown as adopted by the City Council. A core of the major retail stores and business offices on the west side will be formed by closing the interior streets of six blocks to all traffic except buses, taxis, and emergency vehicles. The proposed changes will add to the over-all appearance, beauty, function and convenience of the downtown area, particularly since traffic circulation will be routed around the core. Major street improvements, including the Eighth and Ninth Street viaducts, and relocations of portions of Fifteenth and Sixteenth Streets, are coordinated with the Central Business District Plan. The closing of the six block area is a change from the nine block area formerly adopted in the Central Business District Plan.
STRIP COMMERCIAL DEVELOPMENT

Des Moines, as most large cities across the nation, is faced with the problem of extensive commercial development on both sides of most major traffic arteries. More than 30 years ago ribbon business growth was officially sanctioned through the Zoning Ordinance to encourage commercial development and strengthen the new residential areas growing out from the City's center. There was, at that time, little expectation that the use of the automobile would reach its present proportion.

Today, nearly all of the City's primary traffic arteries are congested partially because of the many entrances and exits from strip commercial areas such as portions of Fleur Drive and Southwest Ninth Street. Similarly, on streets where on-street parking in commercial areas has been prohibited, traffic moves at speeds that discourage turning movements into poorly located parking areas of strip commercial establishments, thus discouraging sound commercial development. Vestiges of poorly located businesses on relatively high speed arterials are visible along portions of Southeast Fourteenth Street and Easton Boulevard.

To develop a sound pattern of commercial land use and retain free movement of traffic, it is recommended that greater concentration of well planned auto-oriented businesses similar to planned neighborhood shopping centers be encouraged. With adequate off-street parking, well developed and clearly marked points of ingress and egress, as well as properly maintained properties, increased business can be expected. As automobile ownership increases and more traffic travels Des Moines' streets it will be necessary to alleviate today's congestion. One method is to encourage properly planned auto-oriented commercial land use.
PROPOSED COMMERCIAL DEVELOPMENT

Des Moines is well served by the amount of land devoted to retail and wholesale commercial centers; the existing business areas and the areas recently zoned for commercial use will adequately serve the City's needs for the next 20 years. As the areas presently vacant are developed, particularly south of the rivers, additional commercial land will be needed; however, many of the businesses operating today will close because of obsolescence and a change in market desires, thus retaining a balance between commercial land and the population to be served.

At present a pattern of logical commercial development is well established in the western and northern and partially in the eastern sections of Des Moines. From the central business district outward, neighborhood shopping areas have developed approximately midway between the downtown area and the corporate limits. These neighborhood centers serve a stable population in the inner "ring" of residential areas. Limited expansion is expected here since both commercial and residential development is relatively stable. It is expected that in the east and south sections neighborhood shopping facilities will be built as residential development progresses.

Beyond the neighborhood shopping "ring", a system of primary convenience and regional shopping areas is in varying stages of development. Marle Hay Plaza and Eastgate are representative of a type of commercial land use which serves a much greater population than just that of Des Moines. These regional centers because of product availability and accessibility will increase in importance as suburban development to the north and west continues. It is anticipated that as growth continues on the south side at least two more commercial centers will develop in the next 20 years.
MAJOR HIGHWAY IMPACT ON COMMERCE

The value of Interstate Routes 35 and 80 to increased commercial activity in Des Moines is inestimable in dollars and cents; however, it is readily recognized that their presence will greatly increase the accessibility of Des Moines to many locations beyond the Metropolitan Area. Prior to the completion of the Interstate Highway System, it was estimated that over one-fourth of the customers came from beyond Polk County. The Des Moines Freeway will tend to make the central business district more available to the residents north, east and west of Des Moines principally because of greater ease of access into the central business district.
Just as the central business district is the heart of Des Moines, the City's industrial base is, by anatomical comparison, the backbone of the City — the skeletal framework providing the stability and supporting the new growth within Des Moines. Each segment of the industrial base, e.g., manufacturing, trade, services, etc., acts as a vertebra — each vertebra, a diverse industry, adds strength to the whole support mechanism.

The Existing Industrial Land Use map shown above denotes the locations that industry has assumed over the period of the development of the City through the years. It can easily be seen that topographic characteristics coupled with rail development have had a distinct and lasting effect on such industries as manufacturing and mining. Changes in technology have allowed contemporary industrial development to deviate from past processes and transportation reliance upon the railroads.
INDUSTRIAL INFLUENCE ON DES MOINES

Industrial land uses developed into two distinct patterns. One of the patterns is characterized by industries which are scattered and, for the most part, unrelated, partially because of an oversupply of industrial land and partially because of the advantages of industrial locations adjacent to the multi-fingered network of railroads. The second pattern is characterized by the industries on the south side of the business district in the vicinity of Market, Cherry and Vine Streets. This industrial area, which adequately served prior to the "automotive age", now is inadequate due to lack of room for business expansion; a poor traffic circulation pattern, particularly for large trucks; and structurally, because of age.

INDUSTRIAL GROWTH

Industrial development in Des Moines started in 1843 with the shops of a few tradesmen, a doctor, a saw and grain mill and a brick manufacturer. Between 1846 and 1856, Des Moines became the seat of several governmental functions and the principal trading center for settlers within a distance of 80 miles. The next decade (1856-1866) was one of rapid growth with the relocation of the state capital, introduction of the telegraph and entrance of the railroads in 1866. By 1885, 14 railroads had entered Des Moines and secured for the City a stable wholesale trade area. By 1890, more than 400 wholesale representatives had established territories in the Des Moines trade area. Agriculture, food processing and publishing were by 1890 well established industries. The construction industry was thriving and the export of construction materials had become a primary industrial activity. The insurance industry evolved between 1867 and 1879 with the founding of Equitable of Iowa and Bankers Life Company. Encouraged by their success, 25 insurance companies had located in Des Moines by 1900.
PROPOSED INDUSTRIAL DEVELOPMENT

Planning for industry involves locating and defining land that is not only vacant and zoned for industrial use, but which is located in uninterrupted parcels large enough and of sufficient quality to sustain the new, one-story industrial complexes. In the past decade there has developed a trend from the multi-story structures on small lots to single-story factories on large well-maintained tracts with ample employee and customer parking and reserve land for expansion and protection from or for adjacent residential areas.

Of prime importance in industrial locations are availability of land, public facilities, highway accessibility, rail service, and in some specialized instances, air terminal access. All of these characteristics are well within the capabilities of the City.

Land proposed for industrial development follows a pattern previously set by the railroads as they entered the City via the broad river valleys. The industrial area south of Dean Avenue and east to the corporate limits is traversed by three railroads and will be served in the future by the proposed Industrial Highway. The industrial area in the vicinity of Delaware Avenue is served by four railroads and will be served by the Des Moines Freeway. The industrial areas east of Second Avenue, south of the central business district, southwest of Bell Avenue and Park Avenue, are served by at least one railroad and have or will have good highway access. The industrial area on Southeast Fourteenth Street between McKinley Avenue and Army Post Road is recommended as a specialized area for highway-oriented industrial development.

In all cases the industrial tracts have been selected because of a combination of land and transportation qualities which can satisfy the needs of modern industrial plant planning.
Although still strongly related to railroads, industry is becoming increasingly dependent on major highways, especially the Interstate Highway System, for major freight transportation and employee commuting.

Industries are becoming increasingly prevalent on the fringes of the urban areas. Availability of a public water supply determines the location of the district and type of industrial use. Topography is not necessarily a controlling element in the development of a planned district. Tracts suitable for industrial growth by reason of location often can be economically adapted by site preparation in spite of heavy grading requirements.

The amount of land used industrially in Des Moines, about 1,550 acres, is comparable to other cities of similar size and urban characteristics—approximately 7.1 acres per unit of 1,000 population. Because of the trend toward industrial park development on large lots, greater land requirements are necessary and desirable for a selection of choice. It is proposed that 7.2 additional acres per 1,000 population be set aside for industrial development.
INDUSTRIAL ARTERIALS

Coordination with residential neighborhoods and existing industrial land, together with easy access to existing and proposed major highways, is a prerequisite in locating proposed industrial land. Proximity to rail facilities, either on main or spur lines, is still of importance for land supporting heavy industrial uses, e.g., food processing and manufacturing. Proximity to highways capable of handling large volumes of truck traffic is also an important factor in planning industrial locations. The proposed east-west industrial highway south of the central business district, the Des Moines Freeway, the proposed bypass east of the corporate limits, and several of the City's streets which are to be widened have all been integrated into industrial traffic circulation planning.

Until recent years, industrial distribution depended only upon surface contacts; however, a trend toward air-oriented industry creates a need for a new type of industrial facility. It is proposed that a portion of the area adjacent to the Des Moines Municipal Airport, on McKinley Avenue and Southwest Thirty-Fourth Street, be used for air-oriented industrial development. Because of airport noise and safety factors, this area should not be residentially developed. This type of industry, plus increased air cargo, from 763 tons in 1960 to 3,500 tons in 1970, will require additional air terminal facilities.

In conjunction with the potentialities of air-oriented industry in the vicinity of the Airport, the increasing importance of business and executive aviation will increase by approximately 45 per cent by 1966. Because of the convenience of the Airport to the central business district and the major business offices, better highway access is needed. For this reason, Fleur Drive will be upgraded to support increased traffic conditions.
The above Existing Vacant Land map shows parcels two acres and over which have not been developed. Totally, the amount of land vacant within the corporate limits exceeds 4,800 acres, excluding areas of land such as ravines, bluffs and the flood plains of the rivers and Four-Mile Creek, all of which are considered unbuildable.

Approximately 92 per cent of the total undeveloped land, or 4,400 acres, is available for development. Only that land which is not subject to flooding and below a maximum grade of 12 per cent is included in the 4,400 acres. The vacant areas designated as available for development are in keeping with the City requirements for streets and those for the Federal Housing Administration both of which require development on slopes of less than 12 per cent.
No extensive large scale residential development can be planned for the area northwest of the rivers due to a lack of contiguous available vacant areas. East of the rivers, several relatively large vacant tracts exist. Growth to 1980 is expected to be in the realm of ten to 20 per cent in the northeast area. South of the rivers large tracts totaling more than 3,400 acres are available for urban development. It is anticipated that approximately 75 per cent of all new growth will occur south of Bell Avenue, Hartford Avenue and Valley Drive.

UTILITIES

The presence or absence of municipal service facilities is a major consideration concerning the time in which future development occurs on available vacant land. Development from the center, instead of leapfrogging, produces the most efficient means of growth in which water and sewer lines of adequate size can be extended from existing lines. Inefficiency and abnormally high costs occur where service lines must be extended through large undeveloped tracts to service outlying development.

VACANT LAND

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<th>Total Acres</th>
<th>Buildable Land in Acres</th>
<th>Unbuildable Land in Acres</th>
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<td>South</td>
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<td>Total City</td>
<td>4,833</td>
<td>4,476</td>
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a. Land subject to flood, or with slopes greater than 12 per cent.
1980 LAND USE PLAN

The 1980 Land Use Plan illustrates the proposed uses of land for 1980. Existing vacant land within the City is sufficient to serve the anticipated 1980 population.

Medium and high density residential areas in the central and north central sections of the City extend existing residential development. Three north-south and three east-west major traffic arteries, as well as the Freeway, provide the north central area with convenient access that will encourage continued medium to high density residential growth.

The Central Business District will retain and enhance its role as the dominant shopping area. Outlying neighborhood and regional commercial areas should retain their importance and expand as the population increases, especially in the southern sections of the City. Small shopping areas not shown on this map will remain with only limited expansion. Future commercial growth should be developed in blocks rather than linearly along major streets.

Industrial land areas are proposed for expansion to offer a selection of sites to local and prospective industrial developers in line with modern large tract industrial plant development practices, and to take advantage of proposed industrial transportation arterials such as the Interstate Highway System and the Des Moines Industrial Highway.

Public and semi-public areas proposed include existing areas with those required to meet anticipated 1980 needs. One significant change is the division of Fort Des Moines property for school and park facilities.

Major park and open spaces preserve the river flood plain areas for public use and protection. A parkway system is proposed within these areas which will generally parallel the two rivers and Four Mile Creek.