



COMPREHENSIVE MASTER PLAN

1960 ■ ■ ■ ■ ■ ■ ■ ■ 1980
BILL BECHTEL



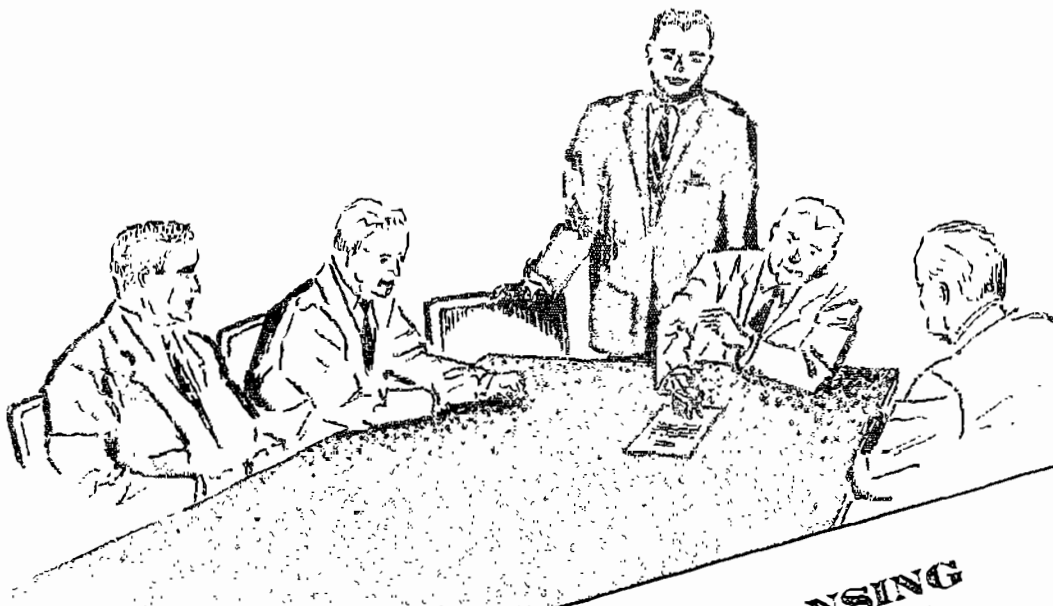
COMPREHENSIVE MASTER PLAN :

LANSING AND ENVIRONS

CITY PLANNING BOARD

LANSING, MICHIGAN

1958



CITY OF LANSING
STATE OF MICHIGAN

PLANNING DEPARTMENT
633 CITY HALL

December 30, 1960

VICTOR G. LEYRER
PLANNING DIRECTOR

Honorable Mayor and
Members of the City Council

Gentlemen:

The Planning Board takes pleasure in transmitting its report on the new Master Plan, which was unanimously adopted by the Board on December 3, 1959. As such it should be used in much the same way as have the previous versions, as a general guide for future developments and policies. In this way we can achieve a more efficient and orderly community to the benefit of every citizen.

Lansing's original Master Plan was prepared in 1921. Nearly two decades later, in 1938, as a result of considerable change in living patterns a major study was completed aimed at up-dating the 1921 plan. Now another two decades later we have completed a new Master Plan necessitated by changing conditions and technology not envisioned in 1938.

This process of up-dating community master plans is necessarily continuous in every city. Twenty years ago no one could envision the significance of freeways, the effects of shopping centers, ramp garages, industrial parks, or large-scale residential subdivisions. A flexible Master Plan continually undergoing scrutiny and revision is required for proper integration of such developments into the urban structure.

The Planning Board is appreciative of the assistance given by the Mayor and City Council in the provision of the services of our consultants, Ladislav Segoe and Associates, in the preparation of this Plan.

Respectfully submitted,

Max G. Stookes

Max G. Stookes
Chairman
City Planning Board

MGS/lb

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ACKNOWLEDGEMENT

The City Planning Department appreciates and expresses its gratitude for the support, assistance and contributions of the many civic leaders, public officials, city departments, and other organizations or agencies that provided information used in the preparation of the Master Plan.

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PART I

BASIC STUDIES

INTRODUCTION

POPULATION

ECONOMY

LAND USE

HOUSING



INTRODUCTION

Lansing, Michigan today a flourishing and prosperous city was established as a direct result of a successfully executed swindle. From this beginning it has grown into an important automobile manufacturing center, state capital, and a trade and service center of consequence for lower Michigan.

In the 1830's, two brothers, whose names are lost in history, came across the site of the future city while "timber cruising." Two rivers, the Grand and the Red Cedar, joined here in the tangled wilderness. The enterprising brothers sold lots in a fictitious city called "Biddle," mainly to the citizens of the village of Lansing, New York. When the buyers journeyed to their new properties they found only forest wilderness. Although disillusioned, some decided to remain and founded what is today Lansing, Michigan, named after the village in New York from which many of the settlers came. In 1842, the area was officially designated Lansing Township. The community was little known because of its inaccessibility and wilderness location. Nonetheless, additional persons settled in the area and by 1845 the community had grown to approximately 100 persons.

Improvements were made and the settlement first attained general recognition in 1847 during a controversy over the location of a new state capitol. It was this year that the legislature approved the moving of the capitol from Detroit to the community on the two rivers. The area's more central location in the state was an important factor in promoting its location as the capitol site, and the selection of the settlement brought it into prominence and spurred its development.

The settlement continued to grow and in 1852 a plank road to Detroit was completed, affording the first good means of travel between these places. In 1859, the "City of Lansing" was incorporated, and there was recorded at this time a population of about 4,000. By 1866, the plank road to Detroit was replaced by a gravel road and tolls were charged until the 1880's. The railroads reached Lansing in 1871 and gave the city the improved accessibility it long had needed. With this came new industry and the expansion of existing industrial establishments. The population soon doubled and Lansing was well on it's way into the industrial boom of the late 19th century. The increased activity brought more people, and by 1900 the population had risen to over 16,000. Because of the nature of its industry, its physical features and other resources adapted to the automobile industry, it wasn't long until Lansing was established as a leader in automobile manufacturing.

In 1857, Michigan Agricultural College - now Michigan State University - was opened in what is now East Lansing. This, along with improved transportation, growing industrial and trade activities, combined with the operations of the state government, contributed measurably to the continuing growth of the area.

As the nation entered into a period of slower growth, Lansing continued its rapid rate of expansion. The population almost doubled between 1900 and 1910, and had risen to more than 57,000 by 1920 and almost 80,000 by 1930. The area continued to grow, although at a diminished rate, and by 1958, had an estimated population of more than 115,000 in the city proper and over 155,000 in Lansing, East Lansing, and the other parts of the urban area. The successive increases in population have promoted commercial and industrial activity until at present there are close to 200 manufacturing establishments in the general area, with an estimated retail and wholesale trade of close to \$500 million annually.

Lansing's geographic and economic relationship to the State of Michigan and other surrounding cities is shown on Plate 1, "Regional Setting".

THE MASTER PLAN

Lansing, in common with other cities, has recognized the need for a guide toward establishing its land requirements and in setting the scale and arrangement of its public facilities. Without one, expensive penalties may be paid in the form of inefficient land utilization, inadequate commercial areas, decline in growth of industry, poor public facilities, costly extensions and operation of utilities, traffic congestion and lower property values. A master plan for the orderly and efficient physical development of the community should aid materially in minimizing these penalties and setting the stage for co-ordinated action in respect to early and long-term goals.

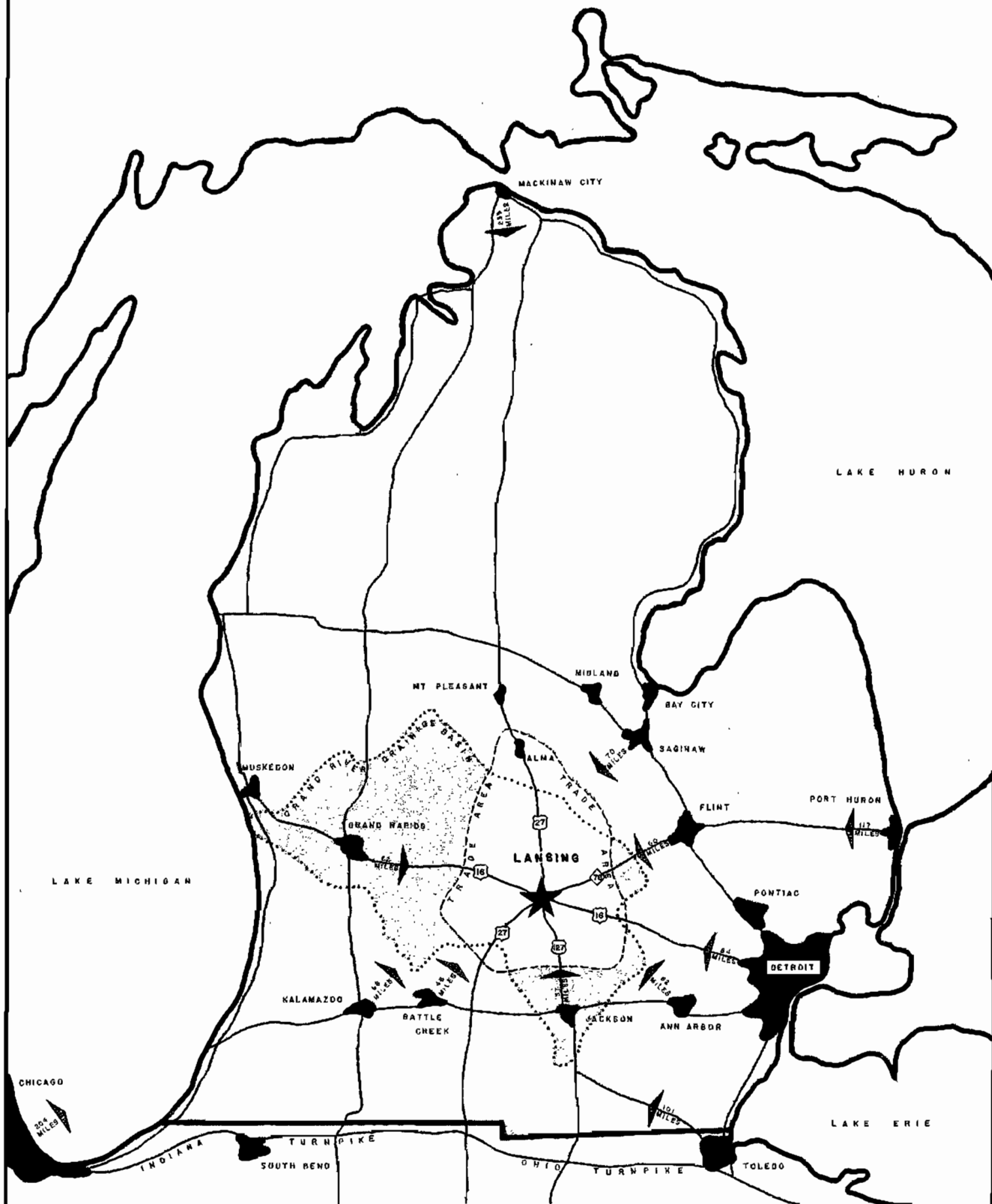
The Master Plan presented herein envisions Lansing as it may be some 20 to 25 years hence. Under the Plan, all of Lansing's presently desirable and advantageous features are sought to be retained and deficiencies gradually corrected with the aim of creating an integrated and harmonious overall development.

Objectives

Specific objectives of the Master Plan include the following:

1. Provision for logical expansion of existing industrial areas; also for future industrial development by the allocation and preservation of sufficient land suitable for industry free from the encroachment of non-industrial uses.
2. Provision for the development or redevelopment of existing commercial areas, including the central business district, and for future commercial centers with adequate off-street parking, appropriately located and in scale with the prospective population and purchasing power.
3. Provision of adequate areas for residential expansion, in consideration, among other things, of the possibility of economical extension of utilities and other urban facilities and services.
4. Designation of areas, whether suitable for residential or non-residential use, where clearance and redevelopment may be in order; indication also of areas where rehabilitation is needed; determination of the means for accomplishing each.
5. Indication of areas suitably located and otherwise appropriate to serve the recreational needs of the

SETTING



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growing population; also indication of adequate sites for schools and other public facilities.

6. Establishment of more or less self-contained living areas ("neighborhoods") generally free from through traffic and detrimental non-residential uses, each with shopping facilities, schools and recreational facilities.
7. Development of a logical net-work of highways and thoroughfares, including limited-access express-ways, other major streets and parkways to accommodate estimated future traffic volumes.
8. Improvement of other facilities for transporting people and goods within as well as to and from the Lansing area, including transit, railroads, and airlines.
9. Establishment of a basis for the programming of public improvements. *CIP*
10. Provision of new and effective regulatory measures, (Subdivision Regulations and Zoning Ordinance).
11. Coordination of Lansing's planning program with those of adjacent areas.
12. Encouragement of official and citizen support of city planning.

Earlier Planning

The Lansing City Council recognized the need for long-range planning by establishing a City Plan Commission in 1940. The organization and staff of the original Plan Commission, and to some extent the functions, have been modified until the present Lansing Planning Board and City Planning Department evolved from the city charter effective in April, 1957.

In the past, two master plans for the development of Lansing, one in 1921 and another in 1938 were prepared by a planning consultant. Both of these provided valuable assistance toward guiding the physical development of the city. Other plans dealing with separate features of city development have been of limited long range usefulness since each dealt separately and was relatively unrelated to other physical elements which together form the city's physical pattern.

Lansing's first zoning ordinance was adopted in 1927 and comprehensively revised in 1942. It has been drastically revised from time to time since, both in text and map, but not on a comprehensive basis. Today, the zoning ordinance is inadequate, and, in general, Lansing has outgrown its earlier plans. Conditions and needs of today are significantly different than when the previous plans were prepared. Accordingly, the new Master Plan was developed in the light of current and emerging conditions and requirements. This Plan is the product of the staff of the Lansing Planning Board, prepared under the general direction and guidance of a planning consultant, and reviewed by the Planning Board and other qualified persons. The Plan accords with the charter of the City of Lansing, Michigan, and with Act 285 of the Michigan Public Acts of 1931, as amended.

Geographic Scope of the Master Plan

The geographic study area under the new Master Plan comprises about 87 square miles and includes Lansing, East Lansing, and parts of Ingham, Eaton, and Clinton Counties. The area is sufficiently large to meet the land requirements of the urban area in the foreseeable future, with a reasonable margin of supply over probable demand. It was apparent that the urban and urbanizing parts of the area should be planned for integrated development in view of the strong inter-relationship between the development of one part and the effect this has on adjacent ones. However, although the overall area has been planned in generalized form, refinements are confined in general to those areas over which Lansing has legal jurisdiction.

There are several important features of the community over which Lansing has little if any control. The Capitol Development Area with its complement of state buildings is one; the Capitol City Airport is another. Michigan State University with the expansion which has occurred and is in prospect, is still another.

A regional planning organization for the Lansing area was established in July of 1956 and officially designated as the "Tri-County Regional Planning Commission." Its primary function is to coordinate the activities of the metropolitan area and to assist in the planning and solution of local problems. This agency can be expected to provide the framework necessary to assist in coordinating Lansing's activities with those of other local agencies and political jurisdictions.

The Master Plan Report

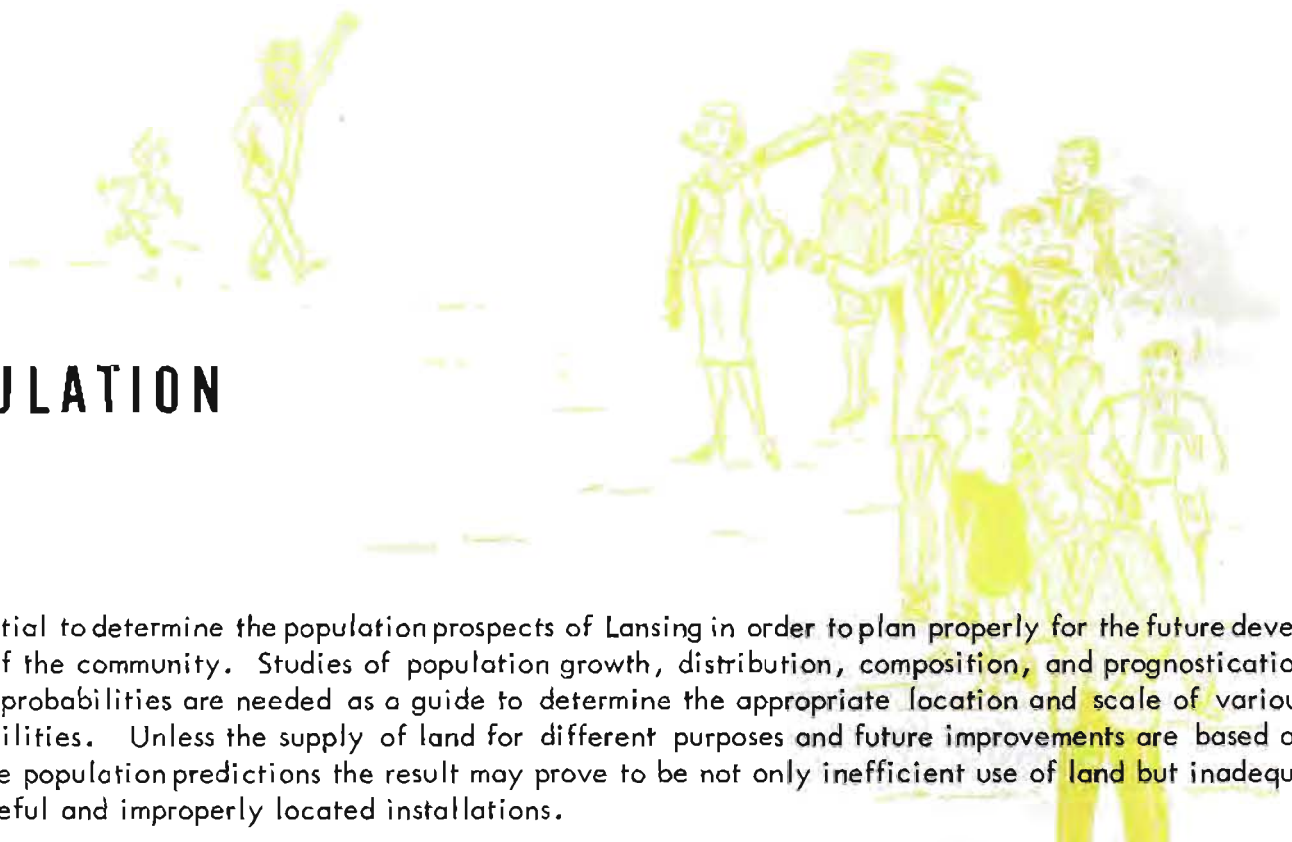
The text of the Master Plan is grouped into four major divisions. The first deals with Basic Studies, the second with the Master Plan Elements, the third with The Land Use Plan, and the fourth with Planning Administration. Major recommendations for each phase of the Plan are covered by the Master Plan Elements. The Land Use Plan, or the Master Plan itself in graphic form, is a composite of the major recommendations of the various Master Plan Elements and concludes the section dealing with this subject.

In reviewing the report, it should be understood that planned developments are based on present and predictable forces. Obviously exact predictions are not possible; however those made herein are considered sufficiently reasonable to serve as a working basis in establishing future requirements, even though the time-table may change to some extent. The Master Plan is not a final blue-print, but, as a working frame of reference, it must be reviewed and revised from time to time, to keep it attuned to changing conditions and needs. The Master Plan is to serve as a general guide for future improvements and as a point of departure in detailed planning of individual projects.

Numerous annexations to Lansing have occurred during the period of Master Plan preparation, and especially during 1958. Certain of the areas have not been studied to the extent necessary to make detailed proposals practical; however general recommendations are advanced. It was considered essential that the original schedule for Plan preparation be maintained; hence, the new areas will be the subject of later supplementary studies to be included in subsequent revisions or extensions to the Master Plan. The base maps for the Master Plan have been drafted to include all annexations and show the city limits as existing at the end of 1958.

Special Studies

The Master Plan brings into focus numerous problems involving special studies. These are mentioned at appropriate points in the following report. However, because of the special nature and scope of these items they are the subject of separate, supplementary reports on file in the office of the Planning Department.



POPULATION

It is essential to determine the population prospects of Lansing in order to plan properly for the future development of the community. Studies of population growth, distribution, composition, and prognostication of future probabilities are needed as a guide to determine the appropriate location and scale of various urban facilities. Unless the supply of land for different purposes and future improvements are based on reasonable population predictions the result may prove to be not only inefficient use of land but inadequate, wasteful and improperly located installations.

Lansing is only a part of the larger urban community in Ingham County—the Lansing Standard Metropolitan Area as established by the U. S. Census. It is essential therefore that the City of Lansing be studied as part of the metropolitan area and the urbanized area centered on Lansing proper. The needed coordination between the central city and the outlying areas can then be provided and the proper studies made to integrate the Planning of both areas. This is the case not only as regards studies of population but other phases of the plan as well.

Past Population Growth

The City of Lansing experienced rather rapid population increase from its early days until the 1920's. The population change for each decade varied during this period between increases of 25.8 and 89.4 per cent, averaging about 75 per cent overall, as may be seen in Table 2, appended hereto. After 1920, the percentage of increase dropped off, and during the 1930's practically no change occurred, both due to the depression of the '30's and the fact that Lansing, without significant boundary extensions, was largely built-up and had reached its practical saturation point. Annexations after 1940 caused renewed gains in population as areas shown on Plate 2, "Annexations," became parts of the city. By the end of 1958, Lansing had an estimated population of 115,000.

During the period 1920 to 1956, when Lansing showed a diminished rate of population increase, the part of the metropolitan area adjacent to the city experienced its most rapid growth. For example, Lansing Township (outside the city) had a population increase of over 200 per cent between 1920 and 1930 while the city experienced an increase of only 37 per cent during the same period. In 1860 the City of Lansing contained 17.6 per cent of the total Ingham County population, and this proportion grew until 1920 when it reached 70.3 per cent. Since 1920, however, the proportion declined until it reached 53.3 per cent in 1950. Many cities, if not most, have experienced similar losses both during the depression of the '30's and the prosperous post-war years of the latter '40's and the '50's.

The State of Michigan has been increasing its share of the United States population since 1910 when it had 11.2 per cent of the country's population. Due mainly to the growth of the auto industry

this proportion increased to 3.9 per cent by 1930 and 4.2 per cent in 1950. It is estimated that about 4.5 per cent of the U.S. population now lives in Michigan, and this may be expected to increase as the state enters a period of accelerated industrial expansion.

Lansing's growth during the past century has followed fairly consistently the pattern and volume of increase of other urban areas in Michigan and of the urban average of the United States. Figures representing the population of selected units may be seen in Table 3, and population graphs for these units are shown on Plate 3.

Comparisons with Other Cities

Lansing's past growth trends become more meaningful when compared with those of selected cities which are comparable in size and in certain other respects. For purposes of comparison, four capital cities were chosen; Charleston, West Virginia; Madison, Wisconsin; Nashville, Tennessee; and Richmond, Virginia. Madison is more nearly like Lansing than the others, and probably more so than almost any other city in the United States. It is a northern city with about the same area and population as Lansing; its economy is similar in good part, it being a state capital with a state university. However, Lansing is considerably more industrialized than Madison. Comparison with Madison and the other cities, as well as their metropolitan areas, may be seen in Tables 4 and 5.

Over the years Lansing has held a large percentage of the total population of its metropolitan area, as have the comparison cities (other than Charleston) in more recent times. However, the percentage of the total population living in most central cities has been declining gradually since 1920, as has been the case in Lansing. In 1920 Lansing had over 70 per cent of the area's population residing inside its political limits; this declined to 67 per cent in 1930, to 60 per cent in 1940, and to 53 per cent in 1950.

The U.S. Census recorded the number of persons who in 1949 lived in a different county from that where they lived during 1950. Ingham County, with only 5,475 persons changing their places of residence, showed a much more stable population than did the comparison cities - these representing only 5.9 per cent of the total as compared with the next low, Madison, with 24.7 per cent.

Distribution

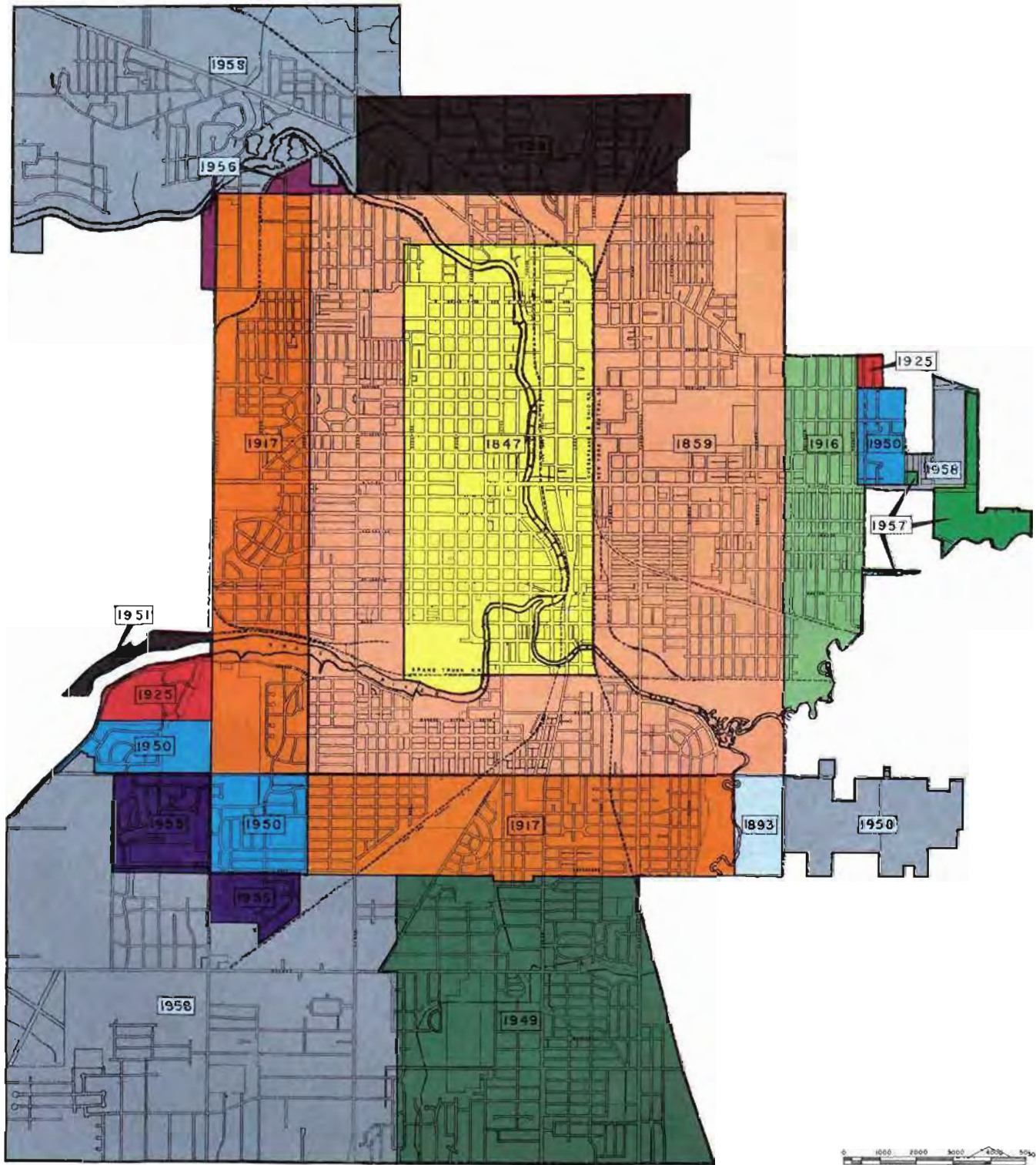
The population of Lansing and vicinity is distributed as shown on Plate 4, "Population Distribution", which is based on information from the 1950 U.S. Census, supplemented by land use studies and records of new residential construction since 1950. Each dot on the map represents 10 persons, and from this graphic representation can be visualized the areas of higher or lower residential concentration. Areas void of dots generally represent parks and non-residential land uses. The areas of high concentration generally are the older sections of the city which contain apartments or other units with higher residential densities. Around the periphery of the city the densities are lower since newer residential areas generally are developed with larger lots and more space devoted to school and recreational facilities. Much of the land outside the city is still used for agriculture and consequently has a very low population density, and few dots show on the map.

Population densities vary widely in different parts of the city, ranging from 50 to 60 persons per net residential acre around the central business district to eight or nine persons per acre in outlying residential districts. The average density within the city is approximately 32 persons per net residential acre or 12 persons per acre of total developed land.

Composition

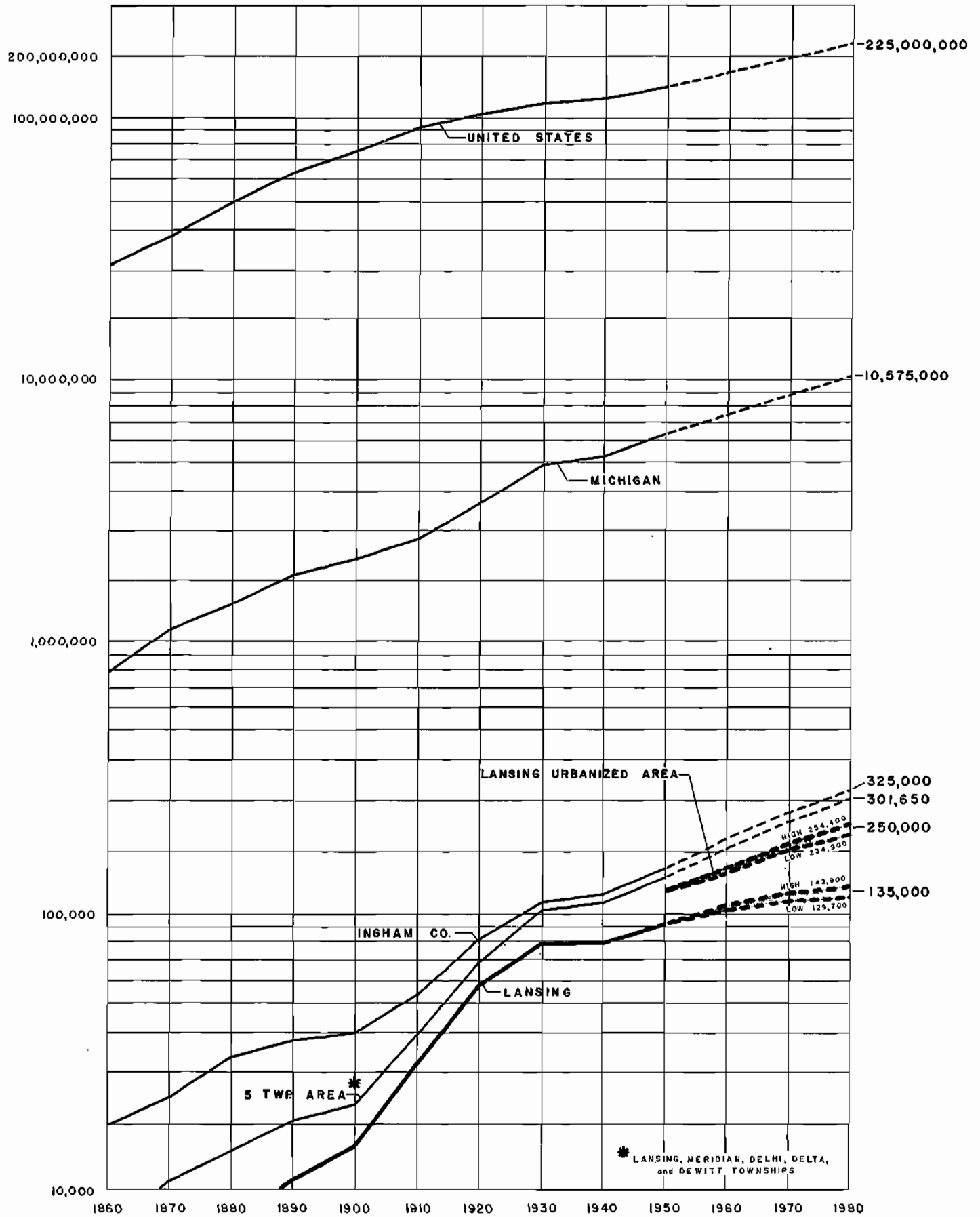
Age-Sex. The age-sex composition of the population has a bearing on various facilities such as housing, schools, community centers, parks and playgrounds. The location and size of these facilities must be in

ANNEXATIONS



0 1000 2000 3000 4000 5000
SCALE IN FEET
CITY CLERK'S OFFICE-1950

POPULATION TRENDS & PROJECTIONS



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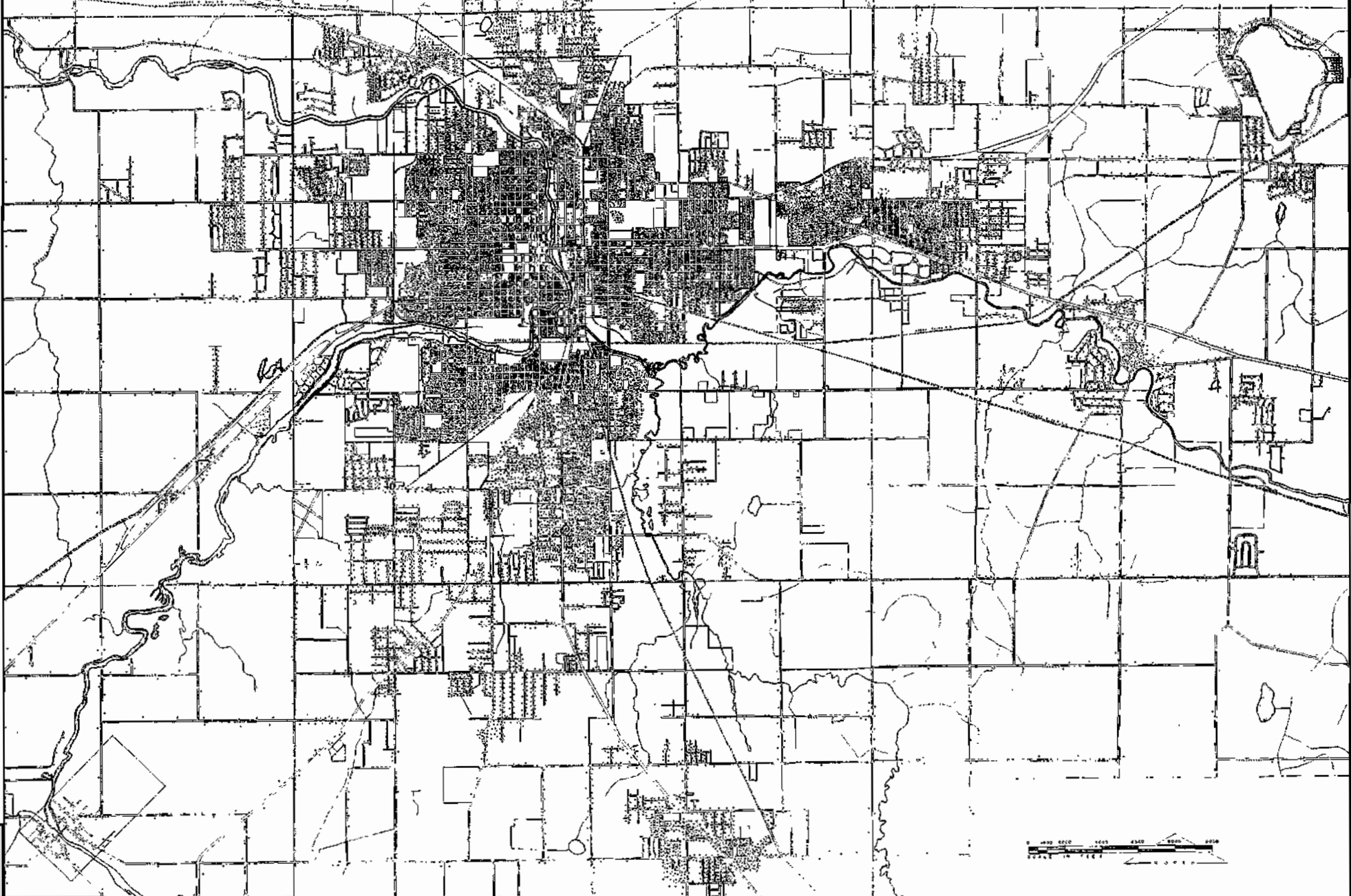
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POPULATION DISTRIBUTION

ONE DOT REPRESENTS TEN PERSONS

SOURCES: U.S. CENSUS - 1950
FIELD SURVEY - 1954 & 1957



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reasonable scale with the size of the various age groups and their distribution within the community. In Lansing, as in most urban areas, the proportion of children to the total population steadily declined until 1945, while the proportion in the older-age brackets increased. After World War II, with economic conditions improved, the birth-rate increased sharply and has continued to be high, with the result that the growing number of school-age children has led to today's shortages in school and recreation facilities.

The Age-Sex Pyramid, shown on Plate 5, portrays graphically the proportions of the 1950 population in the various age groups, as well as the proportions of males and females in each group. The most significant segment of the 1950 Lansing age-sex pyramid was that showing the exceptionally small age groups between five and nineteen years, and the contrasting large group under five years, this reflecting the radically different birth-rates of the '30's and '40's. When 1960 Census figures are known, the age group of five to nineteen should show a striking increase over 1950 in view of the continued high birth rate.

A comparison of 1940 and 1950 age-sex pyramids highlights the rapid increase in the number of persons in the upper-middle and older age brackets, this resulting from the combined influences of the moving up of the larger basic age groups and the lengthening of the normal span of life.

Family Size. In 1950, Lansing contained 24,580 families with an average size of 3.42 persons. At the same time, the average number of persons per dwelling unit was 3.1. The average family size has been decreasing since 1900, as it has been both in Michigan and the United States, as a whole; however, since the 1950 Census, this trend has been arrested, if not reversed, due to the higher birth-rates discussed above.

The trends in persons per dwelling unit are given below:

Table 1
AVERAGE NUMBER OF PERSONS PER OCCUPIED DWELLING UNIT

	<u>Lansing</u>	<u>State of Michigan</u>	<u>United States</u>
1900	4.3	4.6	4.8
1910	4.6	4.5	4.5
1920	4.2	4.9	4.3
1930	3.9	3.9	4.1
1940	3.5	3.8	3.8
1950	3.1	3.4	3.5

SOURCE: Lansing Planning Department
U.S. Census

The increased number of births during the late '40's and '50's, as discussed above, has reversed the prior decline in average family size, as already indicated. However, it may be that the longer-term trend toward smaller families will reassert itself, resulting in smaller average family-size in the future.

A general index of the economic character of the community can be gained through an examination of the proportion of population gainfully employed and the distribution of employment among the different occupations.

Occupations

Lansing had a labor force of over 41,000 persons in 1950, as may be seen in Table 6. Of this, 39,189 persons, or 55 per cent of the total population 14 years old or over, were gainfully employed. This represents 42.5 per cent of the total population, and compares favorably with the 42 per cent employed in the average Michigan city and the range from 42.2 to 44.5 per cent employed in the other state capitals selected for comparison.

In 1950 over 33 per cent of the available labor supply in Lansing was engaged in manufacturing, over 18 per cent in retail trade, over 11 per cent in professional and related services, and over eight per cent in governmental activities. The largest single manufacturing employer in Lansing in 1950 was the industrial group designated as "motor vehicles and motor vehicle equipment," employing 74 per cent of all the workers in manufacturing. The number and percentage of workers in each industrial group is given in Table 7.

The greatest number of employed men, over 27 per cent, were in the "operatives and kindred workers" occupational group, mainly unskilled as classified by the U.S. Census, with "craftsmen, foremen, and kindred workers," the "skilled" group, being the second largest, with 21 per cent. The principal occupation group for women was "clerical and kindred workers," with 42 per cent of the employed women in this group. The occupational composition of Lansing is made up of a large percentage of industrial workers, being considerably higher than other comparable cities and the U.S. Urban totals. Even in comparison to the Michigan Urban figures, which include all of the industrial centers of Michigan, Lansing is only slightly below average. Detailed statistics on all of the occupation groups are given in Table 8.

From the facts concerning occupation and employment, it is evident that Lansing is predominantly a manufacturing community with an above average amount of employment in retail trade. It also appears that the city is limited in wholesale trade resources, even though the city is ideally located to function as a wholesale center. A high percentage of employed populace, in comparison with other cities, is engaged in public administration, mainly because of employment by the State of Michigan and Michigan State University.

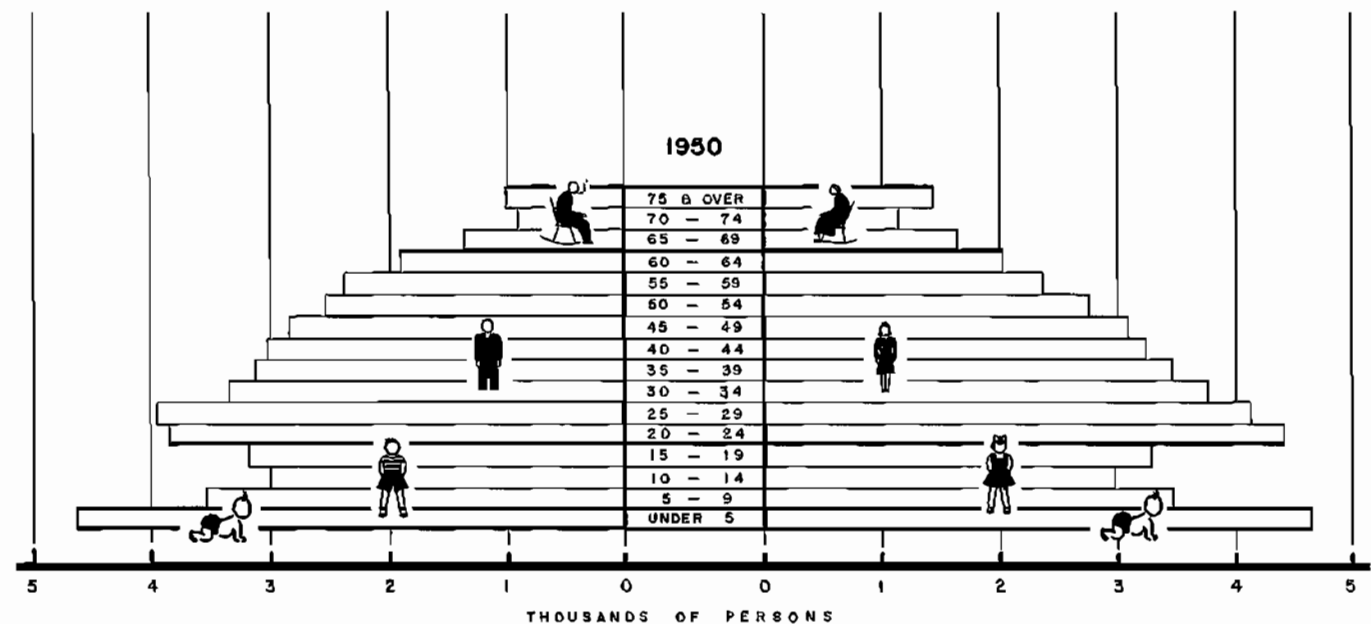
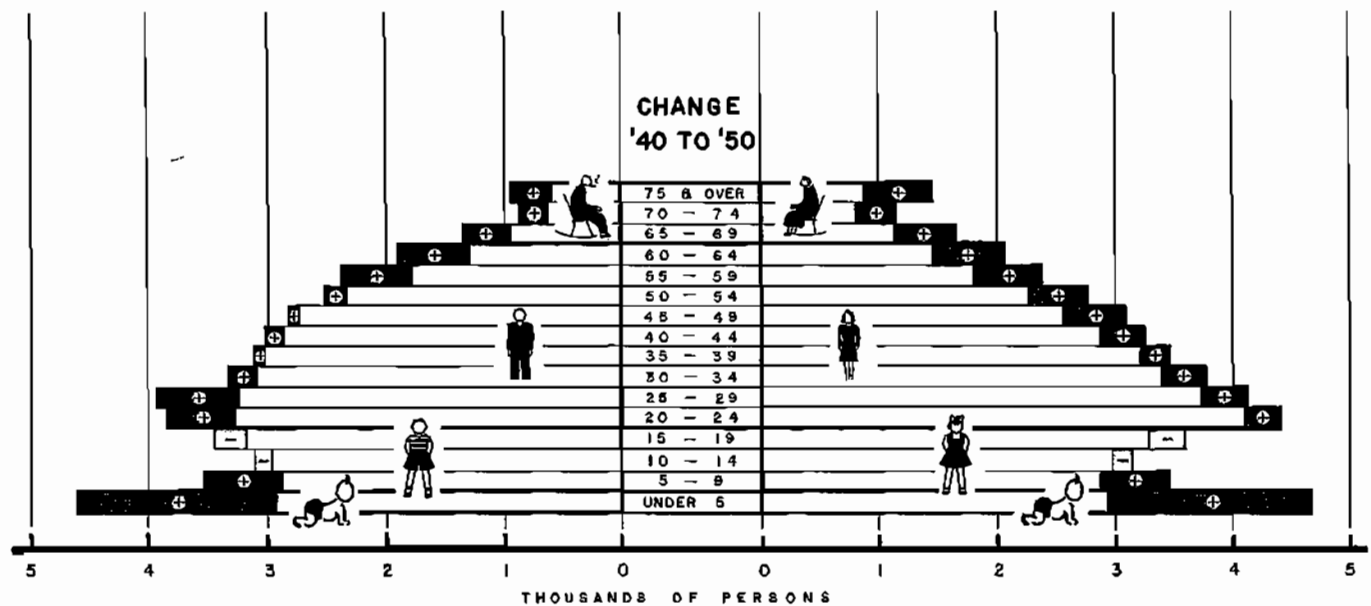
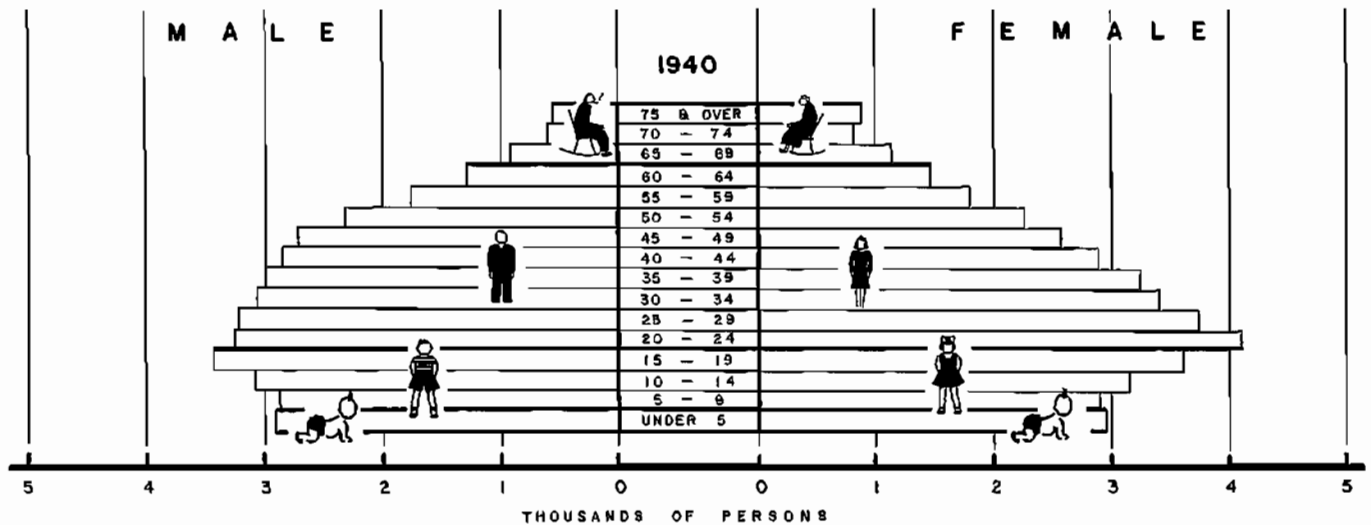
A diversified labor force with an abundance of skilled workers, craftsmen, and administrative personnel in Lansing assists in establishing a balanced stable economy and offers an opportunity for the growth and expansion in Lansing's industrial and business potential.

Population Prospects

A number of methods have been used in preparing population forecasts for the City of Lansing and the Lansing urbanized area.¹ These studies included an analysis of past growth trends, an examination of previous population estimates, investigation of birth and death ratios and a comparison with other cities and governmental units. The projected growth expectations of larger political units, such as the United States as a whole and Michigan were analysed in relation to their probable effect on Lansing's growth. It was concluded from these studies that Lansing may be expected to experience a gain in population from the presently estimated 115,000 to approximately 145,000 in 20 years or so. The urbanized area of Lansing may be expected to expand, within the same period, from the presently estimated population of some 155,000 or 160,000 to approximately 250,000 persons.

The Lansing urbanized area is defined as the area including Lansing, East Lansing, Michigan State University, and contiguous areas considered urban in character. It can be characterized as the physical community as a whole as distinguished from both the central city and the metropolitan area. In general, it represents the heavily settled urban core of the standard metropolitan area.

POPULATION BY SEX AND AGE



SOURCE: U.S. CENSUS

CITY PLANNING BOARD
LANSING MICHIGAN

LADISLAS SEGEE AND ASSOCIATES
CITY PLANNING CONSULTANTS
CINCINNATI OHIO

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PLATE
5
1958

Since World War II, metropolitan areas have experienced exceptional population increases occasioned by favorable economic conditions, accelerated urbanization, and the rise in birth rates. While this "mush-rooming" urban growth may continue, the rate may be expected to diminish. It may be anticipated that the Lansing area, in concert with the national trend, also should continue to grow, but likewise at a diminishing rate. However, the indicated deceleration of growth in metropolitan areas could well lead to keener competition to attract future industry, commerce and, thus, added population. If continued growth is to be Lansing's goal, it will be necessary to provide increasingly better economic opportunities and living conditions to successfully meet this competition.

Urbanized Area

One of the tried methods of estimating future population of an urbanized area involves a statistical comparison of the growth characteristics of selected geographical areas of larger size with those of lesser size within the larger areas. This is known as the ratio or step-down method of forecasting population. The U.S. Census publishes, at intervals, projections of the population of the United States for decades ahead. These projections were utilized to derive projections of the state's population, and from the latter those of the county and urbanized area.

Table 9 indicates that Michigan is expected in the years ahead to contain an increasing percentage of the population of the United States, that the ratio of Ingham County population to state population likewise may be expected to increase, and that the Lansing urbanized area probably will continue to hold a steady proportion of the county's population. This method, when used with studies of past growth trends, studies of the economy and future probabilities, and comparison with other cities, provides a relatively accurate estimate of future population.

The population of the Lansing urbanized area in 20 years or so may be expected to range between 235,000 to 255,000 persons. For purposes of this study, the figure of 250,000 persons is used, this representing an increase of some 80,000 to 100,000 persons or approximately 65 per cent over the estimated 1956 population of the urbanized area.

City of Lansing

Lansing is but part of the local urban complex, and it is expected to share, to greater or lesser extent, in the growth of the larger area. The city's population will be determined mainly by its annexation potential, and also by the future density of its residential parts and the conversion of residential areas to non-residential uses.

Until recent annexations occurred, Lansing itself was approaching the point where all of its available residential land would be improved and in use. There was only enough vacant land to accommodate about 3,000 additional dwelling units. Under this situation, the maximum potential would not exceed 110,000 or so. However, as indicated, annexations already have occurred, and Lansing's growth potential is more promising. Based on present indications, it seems apparent that further annexations will occur. If so, and at a

pace that may be anticipated, the population of Lansing may be expected to approximate 145,000, and quite likely more, within less than a generation.

Future Composition

Family Size. As previously indicated, the average family size in Lansing has been declining since 1900, with the exception of the late '40's and the '50's. Indications are that there may be a reassertion of the longer-range trend, and, if so, by 1980 or so the average size of family in Lansing area may be down to about three persons. The decline in family size has a bearing on several aspects of the city's future development. The indicated decline in family size suggest that the housing needs of Lansing in 1980 will be quite different than they are today. With smaller, and consequently additional families, more houses and more land for residential purposes probably will be required to house a given population. To satisfy the demands of older persons, widows, and childless couples the demand for smaller homes and apartments could very well increase in the future - although this does not seem too likely. The effects of these trends have been considered in preparing the Master Plan and will be covered more thoroughly under the subject of Residential Land.

Age-Sex. As is characteristic of the entire nation, the age composition of the population of Lansing is rapidly changing. In the future the age group which may be expected to show the greatest change is that above 50. The group below 25 years probably will, for a time, show a substantial gain due to increased birth-rates. The group above 50 will increase, because of the longer life expectancy of present generations.

Occupations. Lansing, with a highly diversified economic base, seemingly may expect in the future a very favorable employment ratio. The percentage of persons gainfully employed may well increase above its present 42.5 per cent. Manufacturing should continue to employ a large percentage of the available labor supply; because of the existence of prime industrial land within the Lansing area, and assuming an ample supply of skilled workers, additional manufacturing establishments may be expected to locate in Lansing, thus enlarging the manufacturing force.

Lansing may anticipate a substantial increase in its professional, administrative and clerical workers, due to expected growth of state and private offices. The location of the capital and other state offices in Lansing, also the existence and anticipated growth of Michigan State University may be expected to generate an increase in the number of professional, administrative and office workers in Lansing.

Lansing, due to its central location in the lower peninsula, seemingly should command favorable position to encourage its growth as a distribution center. The development of wholesale trade and warehouse facilities would alleviate one of Lansing's economic shortcomings.

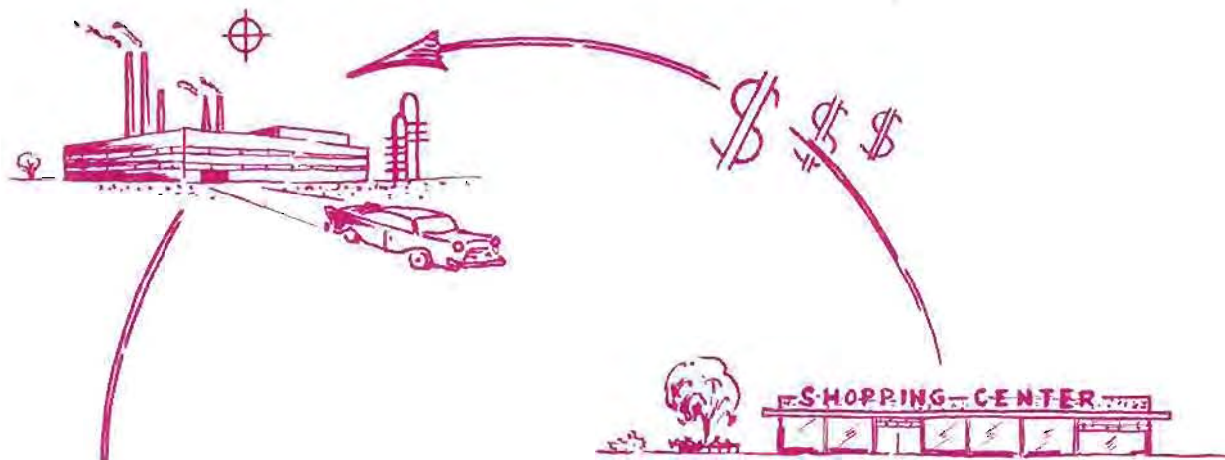
Future Distribution

The future distribution of population in the city will be influenced largely by the existing population pattern, the location of additional land suitable for residential development, and the transition of existing residential land to non-residential uses. Older sections of the city may be expected to decrease slightly in population within the next 20 years or so due to business and industrial expansion, decreases in family

size, and other factors. The loss of population in sections adjacent to the central business district may be offset by the addition of apartments and other multiple-family uses in this area.

New residential areas logically may be expected to develop in the south, southwest, and west sections of the urbanized area. Residential growth also will occur in other areas around the city, although the greatest growth probably will be in the southwesterly direction, because of available land, utilities and other facilities. Most of this growth will occur in newly annexed areas and in areas outside the present political limits of Lansing. Concentrations of low-density apartments may be expected to occur in areas adjacent to new shopping centers as these develop in the future urban complex.

As a guide to establishing requirements as regards schools, thoroughfares and other facilities under the Master Plan, working maps in the office of the Planning Department show the probable distribution - from neighborhood to neighborhood - of the future population of the urban area. Residential densities in the future may be expected to range from as low as three to four persons per net residential acre in some outlying suburban areas to 50 persons or more per acre in the areas around the central business district. The prevalent lot sizes in the next 20 years or so are expected to range from 8,000 to 12,000 square feet, indicating an average density of approximately 10 to 12 persons per net residential acre.



ECONOMY

The present size and general character of Lansing has been established largely by the various economic activities of the past. Likewise, the future size and character of the community, its standard of living and the well-being of its inhabitants will be determined largely by future economic activities. To estimate the future growth of the community, to determine land requirements for business, industry and other purposes and the appropriate scale and scope of public facilities and services, an examination and appraisal of the community's economic base is necessary. Studies of the economic base serve other purposes, such as; to promote the efficiency and economy of the income-producing activities which support the community and point out possible ways of expanding or supplementing them; and to establish the probable level at which the community can finance needed public facilities and services.

The Municipal Year Book classifies the Lansing Metropolitan Area as an "industrial" area (one where employment in manufactures is 50 per cent or more of the aggregate employment in manufacturing, trade, and service, and employment in retail trade is more than 30 per cent.) The City of Lansing is classified as a "Manufacturing" city (where employment in manufacturing is 50 per cent or more of the aggregate employment in manufacturing, trade, and service, but employment in retail trade is less than 30 per cent.)

The strength of the economic base is determined in major degree by those activities which "export" goods, services and capital outside the metropolitan area of Lansing. Those industries and other enterprises which produce the goods and services to be exported are generally considered the "basic industries" of the community. Those which support the basic industries or which supply goods to residents within the community are the "non-basic industries."

The Lansing Standard Metropolitan Area (Ingham County) in 1954 had 213 manufacturing establishments employing approximately 30,000 workers, as reported by the U.S. Census of Manufactures. Of these firms, 137 were in Lansing itself, employing nearly 28,000 persons. An estimated 25,000 export workers in manufacturing represents the primary strength of Lansing's economy. In addition, there are other export workers in non-manufacturing industries, service trades, and various retail and wholesale trades, bringing the total export employees in the metropolitan area to an estimated 35,000 to 40,000 representing 40 to 45 per cent of the total labor force of 85,000.

The ratio between workers in basic industries and those in non-basic industries varies from community to community, but usually is fairly evenly balanced. For each 100 export workers there are usually between 80 and 120 additional workers in the non-basic industries. The Lansing metropolitan area has approximately 100 basic workers for each 120 non-basic workers. This indicates that the Lansing area is in accord with the accepted average in respect to the extent of basic industrial activity.

Recent Trends in Income-Producing Activities

Manufacturing

The number of manufacturing establishments in Lansing proper dropped from 140 in 1947 to 137 in 1954, while in Ingham County there was an increase from 181 to 209 during the same period, as may be seen in Table 12. Although the number of establishments in the city decreased, the total number of manufacturing employees increased from approximately 25,000 to nearly 28,000. Most of the new industrial growth in the Lansing area has been taking place outside the corporate limits of the city because of the acute shortage of available industrial land within the city limits.

The automotive industry forms the primary segment of Lansing's industrial activity. Figures from the 1950 U.S. Census show approximately 44 per cent of industrial employment was in the industrial group "Manufacturing" as revealed by Table 13. Seventy-four per cent of all manufacturing workers were employed in the sub-group designated as "motor vehicles and motor vehicle equipment." Over one-third of the industrial plants in Lansing are directly or indirectly associated with the automotive industry, and the majority of the major industrial plants built since 1940 also are so associated. The second largest manufacturing group in 1950 was the "primary metal industries," with about six per cent of the total manufacturing employees working in this classification. The total labor force in the Lansing area has increased from 73,000 in 1949 to better than 85,000 in 1957, of which about 32 per cent, or more than 27,000 workers, were employed in manufacturing industries in 1957. This was reported by the Michigan State Employment Commission and is shown in Table 14.

The value added by manufacturing is a telling index of the nature as well as the volume of industrial production in a community. Measured by this index, manufactures not only in Lansing but in the metropolitan area as a whole have greatly increased from 1947 to 1954 - more than 100 per cent in each case, as revealed in Table 12.

The change in manufactures in the City of Lansing compared with Ingham County and the State of Michigan as a whole are given in Table 15. This shows that the percentage of Lansing employees and the value added by manufacturing in Lansing as compared to Ingham County has been reducing since 1929. The total Lansing manufacturing establishments in Ingham County increased from 1929 to 1947, but dropped from 1947 to 1954. In comparison to the State of Michigan the percentage of manufacturing establishments in Lansing has been dropping while generally the ratio of Lansing employees and value added by manufacturing has increased since 1939. Among other things, this suggests that Lansing (and especially the Lansing urban area, as revealed by county figures) is increasing in importance as a Michigan manufacturing community.

Retail Trade

Lansing's retail trade area, as shown on Plate 1, "Regional Setting", is considered as comprising parts of five counties, extending a distance of approximately 25 miles, and aggregating about 2,000 square miles in area. However, the drawing power of Lansing is greatest in Ingham, Eaton and Clinton Counties, which together contain over 244,000 population. As may be seen in the following table, Ingham County in 1954 accounted for 72.6 per cent of the total retail sales in the trade area, and the Tri-County area accounted for 90.5 per cent, as reported by the U.S. Census of Business. However, the proportions were greater in 1948, indicating a relatively greater growth of sales to residents of the more distant parts of the trade area.

Table 10
RETAIL SALES

LANSING TRADE AREA

AREA	Total Retail Sales (\$1,000)		Per cent of Lansing Trade Area	
	1954	1948	1954	1948
Ingham County	251,097	177,964	72.6	76.5
Tri-County Area	313,124	222,279	90.5	95.5
Lansing Trade Area	345,923	232,737	100.0	100.0

SOURCE: U.S. Census of Business 1954

During the period 1948 to 1954 Lansing lost a slight share of the total Ingham County retail sales, as Table 16 discloses. In 1948 Lansing accounted for over 78 per cent of the county sales, but the proportion dropped slightly to below this figure in 1954. However, the continued dominance of the city as a retail trading center is demonstrated by the fact that Lansing captured 77.6 per cent of the 1948-1954 total county retail sales gain of \$73.1 million, even though the percentage gain for the city was slightly below the county as a whole.

In 1954, retail trade provided employment in Lansing for almost 9,000 workers, as shown in Table 17. The group "general merchandise" employed the largest number, with 2,441. Three other groups followed in close order, namely, "eating and drinking places," "automotive," and "food stores," with approximately 1,000 workers each. "General merchandise" was the group with the highest payroll, with "automotive" sales a very close second. The group having the largest dollar value of sales was "automotive," with "food stores" and "general merchandise" being near the top. Considering the three factors of employment, payroll, and sales as indices of the economic well-being of the various retail trades, the groups "general merchandise," "automotive" and "food stores" represent the main strength of the retail economic base. These same three groups also are the strongest in the entire metropolitan area.

The number of retail establishments in the city increased from 1929 to 1939, decreased between 1939 and 1948, and again increased from 1948 to 1954, as may be seen in Table 18. In 1954 there were 1,094 retail establishments in the city and a total of 1,606 in the metropolitan area. While the total number of establishments in the city increased over 14 per cent between 1948 to 1954, the total sales increased at nearly three times this rate, or approximately 40 per cent.

Wholesale Trade

Wholesale trade, while growing in importance as a means of economic support for the community, is much less important than retail trade. In 1954, as may be seen in Table 19, the number of employees in wholesale trade in Lansing was 2,630 - less than one-third of those in retail trade - but the total sales in wholesale trade was about the same as the sales in retail trade. However, since 1929 the benefits from wholesale trade have been apparent. The number of establishments and employees increased between 1948 and 1954 at a much greater rate than for the state as a whole, while the rate of gain in total sales slightly bettered that of the State. The number of wholesale establishments grew by almost 40 per cent from 1948 to 1954, while sales increased by about 58 per cent and employment approximately 35 per cent.

Selected Services

Selected services, including hotels, laundries, barber shops, automobile repair shops, amusement and recreation services affect the local economy less than either wholesale or retail trade. Although there were 2,214 persons employed in selected services in 1954 - almost as many as employed in wholesale trade - total sales was less than one-tenth that of wholesale trade. During the period 1948 to 1954, the total number of service establishments increased from 315 to 524, a gain of about two-thirds, while the number of employees and especially total sales increased in greater proportion, as may be determined from Table 20. Yet, despite its minor relative importance it should be noted that 80 per cent of the total Ingham County service trade receipts were within the City of Lansing.

Although not directly comparable, it is interesting to note that the total commercial receipts from trades and services for 1954 in Lansing were \$417 million as against "value added by manufacturing" of \$305 million. The commercial receipts were \$112 million or 36.4 per cent higher than the value added by manufactures. However, in terms of employment, manufacturing establishments employed nearly 28,000, or more than twice that of commercial establishments. Retail trade, the most important element of the commercial economy, employed nearly 9,000 or 65 per cent of the almost 14,000 workers in commercial trades.

Payments made to employees in 1954 by Lansing establishments totaled more than \$194 million, as shown in the following table.

Table 11

LANSING PAYROLLS

	<u>Payroll (\$1,000)</u>	<u>Per cent of Total</u>
Manufacturing Establishments	\$151,166	77.7
Retail Establishments	24,946	12.8
Wholesale Establishments	12,550	6.5
Selected Service Establishments	<u>5,766</u>	<u>3.0</u>
	<u>\$194,428</u>	<u>100.0</u>

SOURCE: 1954 U.S. Census of Business
1954 U.S. Census of Manufactures

Governmental Service

Government employment plays an important and growing part in the economy of the Lansing area. Most of this employment is by the State government and Michigan State University, with the Federal and local governments employing smaller numbers. These employers contribute largely to the 11 per cent of the available labor supply engaged in "professional and related services," and to the eight per cent employed in governmental activities. These activities naturally contribute greatly to the diversification and stabilization of the local economy.

Other Economic Considerations

Female Employment The percentage of female employment in the City of Lansing is high compared with the state as a whole and other Michigan cities of similar size. In 1950 Lansing proper had 32.8 per cent

of its employed labor force made up of female workers as compared with 27.5 per cent for the average Michigan City.

Income The median family income for 1949 in the City of Lansing (based on a 20% sample) was \$4,097. This figure is higher than other Michigan cities of similar size and is above the state urban median of \$3,815. The relatively high proportion of employed women suggests one reason why the family income for Lansing is high, since female employment in part is a supplementary source of family income.

In terms of "net effective buying income per family",¹ Lansing is ranked 129th among the 400 leading cities in the United States. Lansing's "effective buying income" was estimated to be \$6,371 in 1955. Of the 83 counties in Michigan, Ingham County was rated third in "effective buying income" with a 1955 estimate of \$6,886 per family. Only two counties were reported as exceeding Ingham, namely Wayne and Oakland in the metropolitan area of Detroit.

Future Prospects

Industrial Development

Manufacturing in general, and the automotive industry in particular, plays an exceptionally important role in the economy of Lansing, and it appears that in the future this will continue to be the case. Fortunately, it would seem, most of the local automotive plants possess fairly versatile production machinery and, therefore, apparently are in a position to convert to the manufacture of related products to meet possible shifts in market demand. Because of this flexibility, Lansing manufacturing is understood to be readily adaptable to the production of military equipment in time of national emergency.

Industrial expansion in the past has left few vacant industrial sites of sizeable proportions within the corporate limits of Lansing. As a consequence, new plants have been constructed at peripheral locations outside the city limits. However, a substantial amount of potential industrial land - now occupied by blighted or near-blighted residential development - exists adjacent to established industrial areas within the older parts of the city. The elimination of these sections of blight would provide land for the expansion of existing industries and for the location of new plants of limited size. However, this possible industrial expansion within the city would not be of sufficiently high order, quantitatively, to reverse the industrial decentralization now in progress.

Industrial expansion which may be expected to occur on raw land might well be guided through "organized industrial districts" and by means of zoning measures that would prohibit residential and other non-industrial uses in potential industrial areas. Planned or organized industrial districts have the advantage of guiding the industrial growth toward more orderly, aesthetic, and efficient development. Such growth desirably should be encouraged in areas recently annexed or "subject to annexation", and in places where urban facilities and services can be provided efficiently and economically. New industrial areas contiguous to the city, with utilities already provided or readily available, would place the city in a favorable position when competing with others for industrial prospects.

The type of industrial growth that should be encouraged, insofar as possible, is that which engages in the fabrication of goods from raw materials or partially processed materials, and are classified as "basic industries". Industries that would utilize the special skills that are available in the Lansing labor market are advantageous as long as they would complement rather than compete with existing industries. Also industries that would aid in offsetting the seasonal variations of employment of existing industries would be

¹ The estimated total amount of individual wages, salaries, profits and property income, less federal state, and local taxes, divided by the estimated number of family spending groups, as defined by a national sales magazine publishing this data.

advantageous. Since the proportion of older people in the community is increasing, as pointed out under the subject of Population, industries which would employ older people evidently would be a welcome addition to the Lansing economy. New industries that might tend to attract "cheap" labor or marginal economic groups obviously should not be encouraged, but industries that would promote a greater diversification of manufacturing seemingly would be an asset to the existing economy.

Industrial Employment

On the basis of past trends and future prospects, it is estimated that by 1980 the number of manufacturing workers in the Lansing area will be approximately 48,000. In 1955 the Lansing urbanized area had approximately 30,000 manufacturing employees. This represents an annual average increase of some 700 to 800 workers for the next 20 to 25 years. Future industrial employment and new or enlarged manufacturing establishments go hand in hand. The number of anticipated manufacturing workers represents, then, a basis for the establishment of the land requirements for future industrial development, to be discussed under the subject of industrial land.

Business Growth

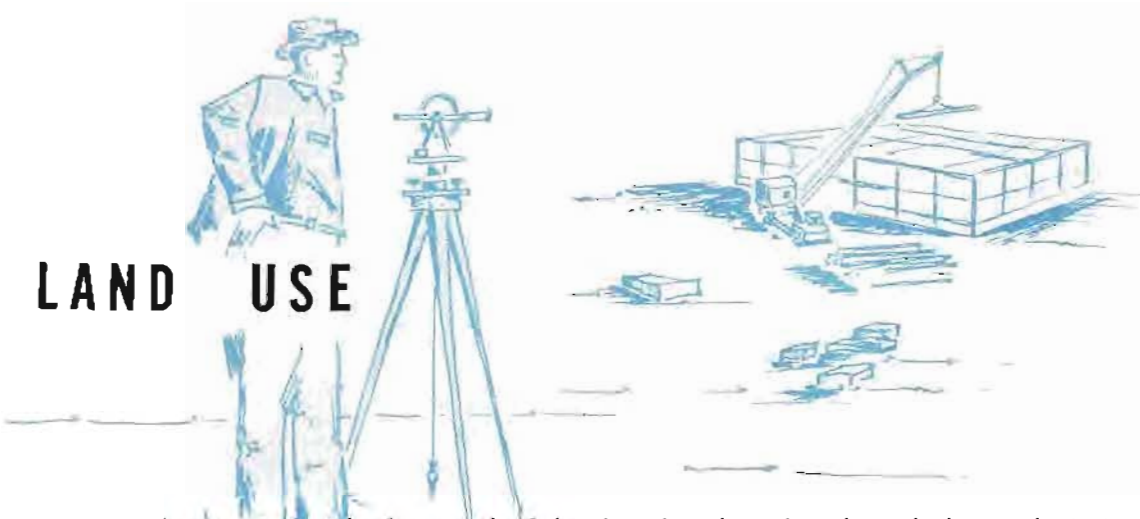
Lansing now receives a large share of the retail trade and service in the metropolitan area. However, it would seem that the city should make every effort to capture an increasingly greater share and attempt to extend its present trade area and increase per capita buying locally. To this end the Central Business District should be made conveniently accessible from all parts of the trade area; provision should be made for safe and convenient pedestrian circulation and the district itself made as attractive and modern as possible. New retail trade should be encouraged in the expanding community through the development of well located shopping centers with modern, adequate facilities. Improvement of existing commercial developments along Lansing's major streets are desirable, these including the possible elimination of street parking at selected locations and the encouragement of adequate off-street parking, also by improving the appearance through the control of advertising signs and street appurtenances and the modernization of building facades where possible. Wholesale trade in the Lansing area offers an excellent opportunity for expansion and the subsequent strengthening of Lansing's economic base.

The use of premises for residential purposes should be discouraged in areas either being used or planned for business. This may be done by appropriate density regulations, by other zoning measures, possibly by establishing assessed property valuations reflecting the business potential rather than residential use of property, and by public education and acceptance.

Uses such as used car lots and service stations which create "dead" frontage, especially in high value districts should be discouraged in such districts, as the open areas tend to break up the continuity of commercial establishments and militate against the highest economic development of the properties concerned.

A sound and intelligently administered Master Plan is an asset of considerable value in promoting an expanding economy. Continued improvement of public facilities and services will make Lansing an increasingly attractive and otherwise desirable place and will aid in attracting additional industry and business to the community to support the growing population. The physical improvements that would stimulate business and industrial growth, directly or indirectly, are discussed in other parts of the report on the Master Plan and are based in part on various statistics dealing with the economy of the Lansing area.

LAND USE



The way that an individual parcel of land is developed and used obviously is important to the individual property owner and to other residents of a community. Indiscriminate or inappropriate uses of land militate against a city's well-being and against its orderly and attractive appearance. Conversely, the well-balanced, orderly use of land, with different types of uses appropriately located, is conducive to efficient and economical provision of public facilities and services, minimizing of traffic congestion, protection and enhancement of property values, more attractive appearance, and pleasant living conditions generally.

In order to determine how the community uses its land, land use surveys and studies are necessary. Detailed data about existing physical conditions throughout the community must be obtained and analyzed to acquire thorough knowledge of the prevailing situation. The use of all parcels of land; the use, character, size and occupancy of all buildings and structures and the open spaces about them; and the location and extent of all public facilities are the kind of information indispensable in the preparation of an adequate master plan. Equally essential are analyses based on such data of the distribution throughout the community of different types of land uses, building practices and trends, housing conditions, public and private open spaces, vacant parcels and sections, areas served by different kinds of utilities to mention the more important ones.

Land Use Survey and Map

The land use survey of Lansing and environs consisted of a from lot-to-lot field check throughout the city during the summer of 1954, and of a survey of the developed areas outside the city in 1955. The use of each parcel of land and building was recorded in the field on large scale maps. The data collected in the survey was transferred to a base map of the city and urbanized area. This map, entitled "Existing Land Use" shows in detail by means of colors and symbols all land uses observed at the time of the survey. The accompanying Plate 6 is a generalization of this land use map. In addition to mapping, the field information was recorded by blocks and lots, and placed on permanent file cards.

The land use data is of basic importance in the preparation of the Master Plan and serves the following major purposes:

1. To acquire information about the size and use of each property; the use and occupancy of each building;

2. To obtain a detailed picture of physical conditions and activities in each neighborhood or section;
3. To gain a broad, overall view of the entire city and surrounding area in terms of predominant uses and activities in their true locations and relationships;
4. To acquire an understanding of relationships between the various types of land uses and activities;
5. To ascertain the amount of land presently used, and to estimate the amount that will be required in the future, for various types of activities or purposes; the areas and locations in the community best suited for various types of uses, and the appropriate size and boundaries of the different zoning districts;
6. To establish the appropriate location and size of needed public facilities and services; and to form the basis for the interrelated information and studies essential to the development of the Land Use Plan.

Inventory of Land Use

The corporate area of Lansing in 1954 comprised approximately 15.4 square miles. About 90 per cent of the overall area was developed, and over half of the vacant area was already subdivided into residential lots. The areas and proportions of land in different categories of use are given in Table 22, appended hereto, and proportions of the total area of the city and of its total developed area in the various types of uses are graphically shown in Plate 7, "How Lansing Uses Its Land".

Residential

Residences occupy almost one-third of the total area of the city and better than 37 per cent of the developed area. The importance of residential areas in the Master Plan is illustrated by the fact that the greatest need for land is for residential purposes. In the aggregate, residential uses occupy approximately 3100 acres, or nearly five square miles of land within the city. Of this total about 84 per cent is developed with single-family homes, nearly 11 per cent with two-family homes, and almost 6 per cent with residences having over three families. Lansing is a city with a comparatively large percentage of singly-family homes. Home ownership is relatively high with owner-occupied dwelling units representing over 64 per cent of the total single-family homes, as compared with 55 per cent for the United States as a whole and less than 63 per cent in the average Michigan City.

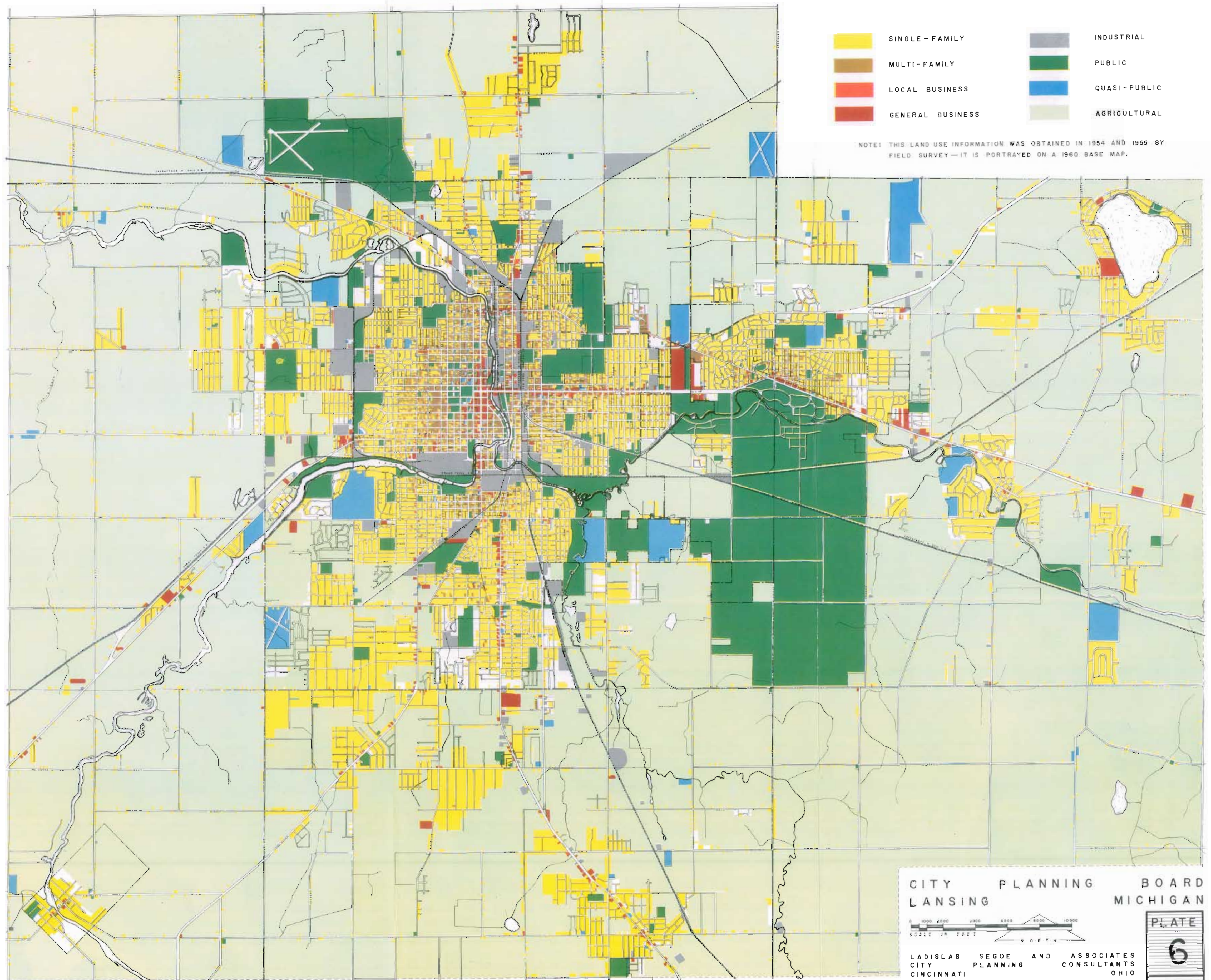
Industrial

Industrial land, railroad property, and utilities account for 13.7 per cent of the total area of the city or 15.7 per cent of the developed area. Although this total is small, percentage-wise, it is significant economically. A break-down of the industrial classification reveals that heavy industry, light industry, and utilities (including railroads) each comprise about one-third of the industrial complex.

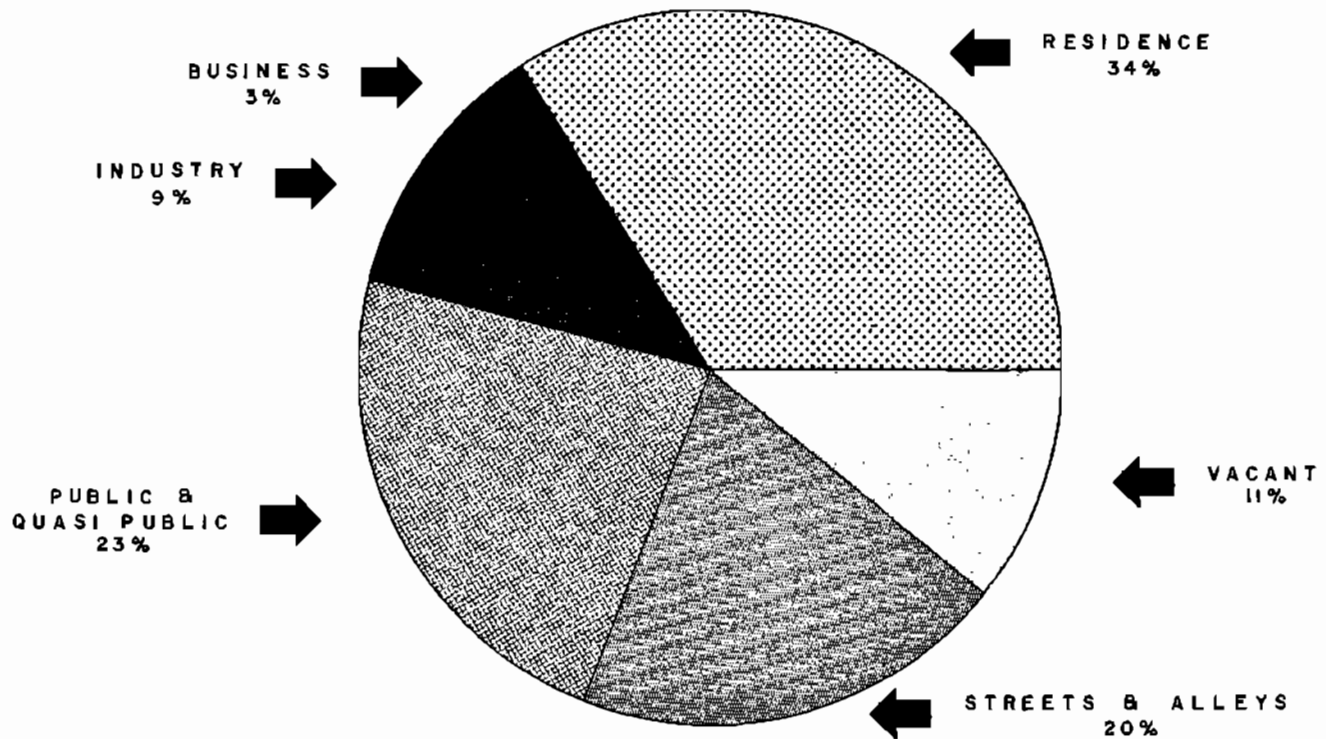
Commercial

Commercial land occupies a very small percentage of the area of a city. However, with the advent, in recent years, of the newer shopping center developments and the growing importance of parking areas accessory to commercial uses, it may be expected that the relative percentage of commercial land will follow on upward course. Commercial uses in Lansing in 1954 accounted for 3.2 per cent of the total area of the city and 3.6 per cent of its developed area. The total commercial land is made up of about one-half "retail business" which includes uses such as department stores, grocery stores, barber shops, etc., and one-half "intensive business" such as garages, service stations, theatres, bowling alleys, etc.

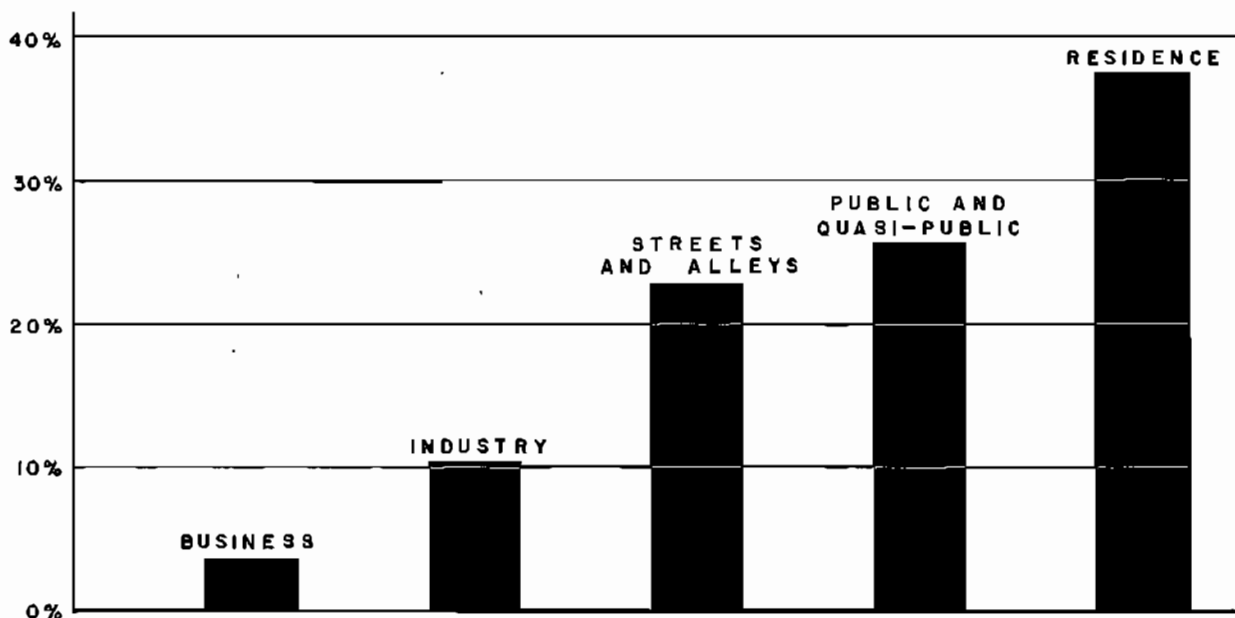
EXISTING GENERALIZED LAND USE - 1955



HOW LANSING USES ITS LAND



PROPORTIONS OF TOTAL LAND



PROPORTIONS OF DEVELOPED LAND

SOURCE: CITY PLANNING DEPARTMENT - 1954

CITY PLANNING BOARD
LANSING MICHIGAN

LADISLAS SEGOE AND ASSOCIATES
CITY PLANNING CONSULTANTS
CINCINNATI OHIO

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Public and Quasi-Public

Uses such as schools, parks and playgrounds, cemeteries, churches and various types of institutions comprise better than one-sixth of the total acreage of the city and more than one-fifth of its developed area. Parks, playgrounds and other recreation areas make up approximately 64 per cent of the total public and quasi-public uses, whereas schools account for approximately 17 per cent and other public and quasi-public buildings aggregate more than 19 per cent.

Streets and Alleys

A large percentage of a city's area is occupied by streets and alleys. Generally, streets and alleys comprise about one-third of the total developed area of a city; however, in the case of Lansing, the area is less than 23 per cent of the total developed area, indicating either a well-planned and efficient street pattern, or a street system with inadequate right-of-ways resulting in problems of accommodating steadily increasing traffic volumes.

Vacant Land

Lansing had very little vacant land within its corporate limits, as of 1954. Only 10.8 per cent of the total area was vacant; of this nearly three-fifths was subdivided and conditioned for development and the remainder was suitable for development. Since 1954, additional vacant land has been annexed but part of this has since been developed, so that the amount of vacant land in the city, prior to extensive annexations in 1958, still was approximately 10 per cent.

Obviously, until recently, there was but a small amount of land remaining for further growth by comparison with most cities which average about 20 per cent of their area in vacant land. Buildable land is one of a city's most important resources; thus annexation of additional territory such as occurred in 1958, will aid to correct this deficiency and provide land for future development under adequate and desirable controls. Table 22 shows for 1954 the approximate acreage in each of the various land uses within the city and the percentage that each was of the total area and of the total developed area. This table contains acreage-population ratios for each of the land uses.

Land Use Compared To Zoned Area

An examination of the way in which land is used in each of the various zoning classifications gives an indication of the appropriateness of the location and extent for each zoned district and consequently of the efficiency of the use of the land. Zoning districts having a high percentage of land use not permitted in that zoning classification may therefore be improperly located and in need of correction through the recommendations of the Master Plan and the redistricting of the new Zoning Ordinance. Districts having a small percentage of the primary use intended, indicate that the district may be too large, improperly located, or perhaps not required. Examples of this are the "C" Two Family, "D-M" Multiple Dwelling, and "D" Apartment Districts with only about 16 per cent of their area used for the intended primary use.

A growing community needs vacant developable land upon which to expand. The economic potential of an area is directly associated to this vacant land factor. It is important that vacant land for future development be distributed within all of the basic zoning classifications. Table 23 shows the limited amount of vacant land that is available in most of the zoning classifications. Vacant industrial and commercial land is extremely limited with only about nine per cent of the area in the industrially zoned district being vacant and about seven per cent of the area zoned for commercial use available. The clearance of land no longer desirable for its present use is often used as a method to make available land for the development of uses better suited to that location and site.

The tabulations in Table 23 point up that there is an intermixing of industrial and residential uses in both industrially and residentially zoned areas. This is a condition harmful to both interests and desirably should be eliminated.

Inventory of Regional Land Use

As indicated previously, land outside the corporate limits of Lansing as well as within was surveyed to determine how it was being used. Overall, the survey encompassed an area of 88 square miles embracing the territory subject to urban development during the next 20 years or so. Of the total area surveyed in 1956 approximately 15 square miles was within the city proper as already indicated, while 73 square miles (46,840 acres) was outside the city. Of the latter, only 35 per cent (about 16,500 acres) was developed in 1956 other than for agricultural uses. The City of East Lansing and Michigan State University are included in the regional land use survey and tables.

In the outlying area, the density of residential development and the intensity of other land uses are much lower than within Lansing. This can be explained by large home sites and such non-residential uses as drive-in theaters and bulk storage lots. In general, lower land costs make this type of development possible. The regional land use totals are given in Table 24.

Residential

Land used residentially aggregates approximately 41 per cent of the developed area outside the city. When combined with the land used residentially inside the city (33% of the total), residential land occupies 40.2 per cent of the total developed area of Lansing and environs. Outside the city there are approximately 13.5 acres of residential land per 100 persons. This compares with three acres per 100 persons in the city and again can be attributed to the large lot sizes, generally more spacious development, and numerous small farms. As the out-lying area develops, and appropriate zoning, building and subdivision regulations are adopted, the density figures for the two areas will be closer together. Appropriate restrictions should, of course, prove promotive of good residential development.

Industrial

Industrial land, railroad property and utilities occupy 828 acres or five per cent of the developed area outside the city. This is about 1.6 acres per 100 persons as compared with 1.3 acres per 100 persons in the city. While the percentage of industrial land outside the city is substantially less than within the city, the out-lying area has the potential of developing additional industrial land at a much faster rate than the city proper. In time, the percentage of industrial land should equal or exceed that within the present city.

Commercial

Commercial land comprises only 1.6 per cent of the total developed area outside the city. This is about one-half the percentage inside the city. It is interesting to note that within the city there are 0.3 acres of commercial land per 100 persons, while outside the figure is 0.5, attributable to modern shopping centers with large parking areas, drive-in-theaters which occupy approximately 20 acres each, and to large storage yards for bulk materials. Such uses, requiring large tracts of land, tend to locate around the periphery of the urban area because of the economics of land acquisition and, of course, because of the shortage of undeveloped land in large tracts within the city. As more concentrated development of the fringe area occurs, these more extensive open-air uses will tend to locate or relocate farther and farther out.

Public and Quasi-Public Uses

The developed area outside the city has an unusually high percentage of public and quasi-public land. Included are Michigan State University, Capital City Airport, private golf courses and airports, and park properties which make up the nearly 6250 acres of public and quasi-public holdings. In the aggregate this land amounts to about 37.8 per cent of the "developed" area outside the city. Michigan State University alone, in 1956, controlled approximately 4,100 acres. Since 1956 the University has acquired an additional 200 acres, bringing the total to 4,300 acres.

The large holding of Michigan State University explains the much higher percentage of public and semi-public uses in the urbanized area as a whole as against Lansing alone. Because of large lot sizes, large acreages in separate ownerships and the general open type of development, the percentage of land used for street purposes is much lower than within the city, and, as a result, the percentage of streets for the entire survey area is only about 19 per cent of the total developed area, well below the usual amount.

Comparisons With The Average City

The proportions of Lansing's and the "Average City's" developed area in various uses are shown, by major land use categories, in the table below.

Table 21

PERCENTAGE OF DEVELOPED AREA OCCUPIED BY MAJOR LAND USES

Lansing and Average City¹

<u>Major Land Use</u>	<u>Lansing</u>	<u>Average City</u>
Residential	37.5	37.2
Industrial & Railroads	15.7	9.6
Commercial	3.6	2.6
Parks & Open Spaces	12.0	6.5
Public & Quasi-Public	8.4	10.8
Streets	22.8	33.3
Developed Area	<u>100.0%</u>	<u>100.0%</u>

SOURCE: Lansing Planning Department Field Survey
"Land Use In American Cities", Harvard
University Press, 1955

¹ Average of 17 cities in the 50,000 to 100,000 population class as reported in Land Use in American Cities, Harvard University Press, 1955.

As may be seen, the proportion of land occupied by residences in Lansing is approximately the same as in other communities. Industrial property and railroads are well above the average, being better than 50 per cent higher, reflecting Lansing's highly industrialized character. The substantially higher proportion in commercial uses is due, in part, to the large trade area which supports more extensive business than would the city alone. In addition, the highway service developments in the city add substantially to the commercial acreage. Parks and other public open spaces account for a much larger proportion of land than in the average city, indicating Lansing's position in providing extensively for recreation. The proportion of public and quasi-public lands also is low, surprisingly because of the area occupied by the State Capitol group. Lansing's major land deficiency is in that used for streets and alleys. Although the present street system is functioning fairly adequately, the future may hold problems which can be answered only through additional streets and wider right-of-ways.

Trends In Land Use

Significant changes in the use of land have occurred since 1937 when an earlier inventory was made. These changes are shown in Table 25.

Between 1937 and 1954 the population of the city increased 24 per cent, while the total area grew by about 23 per cent and the developed area 17 per cent. Most of the vacant land that existed in 1937 now is occupied, and, until recently, sufficient new area had not been annexed to maintain the proportion of vacant land at the 24.8 per cent that existed in 1937. The greatest increase in development, percentage wise, was for commercial uses - nearly 128 per cent, or at 7.5 times the rate of increase of developed land as a whole. Public and quasi-public uses showed the next greatest increase during that period. The progress made since 1937 is particularly notable in respect to additional park and playground areas.

The amounts of land used in Lansing per population for the various major land uses in 1937 and 1954 are shown in Table 25. In general, the amount of land used per unit of population has been decreasing in Lansing as the city increased and developed more compactly. There are notable exceptions to this trend, however. The acreage in parks and open space has increased by 92 per cent since 1937, and the acreage in apartment uses better than three-fold.

The land use trends discussed here are significant in estimating the city's future land requirements. For example, one of the trends noted above indicates a greater demand for multiple dwellings. The central business district may expand, but probably not to any great extent, while substantial additional land will be needed for new outlying shopping centers. The need for parking areas will continue to be important in all future commercial development. Industry may be expected to continue to expand, requiring substantial acreages in large sites near transportation facilities. Additional land for parks, playgrounds, schools and other public or quasi-public uses will be needed as the population continues to grow. The general location, amount, and relationship between the different land uses will be discussed under the subjects of each major land use.

Factors Influencing Land Use

The arrangement of land uses in the city is influenced by various physical, cultural, and social factors or conditions. The way in which the community is developed is determined largely by physio-graphic conditions, early developments, the layout of plats, location of railroads and highways, and other factors which influence the urban land use pattern.

An analysis of the natural characteristics of the area is important to the future development of the city. This analysis should facilitate the future construction of roads, utilities, buildings, etc., by locating the land uses and facilities to serve in their best environment and relation to each other. Natural properties of the land can help determine such land uses as: parks, on rough terrain, particularly along rivers; homes, on rolling, well-drained terrain; industry, on high, flat land with transportation facilities; public buildings, at points of special prominence; and commercial developments, adjoining major streets and highways. Lansing has many areas of natural beauty that afford ideal opportunity for development of park and recreation facilities. There are areas adjacent to the existing metropolitan area that are not suitable for development because of soil conditions, and some of these logically could be used for recreational purposes. Most of the land in and around Lansing has relatively good topography for residential development but such development is largely limited at the present time to areas that can be serviced by existing sewerage facilities. The Grand and Red Cedar Rivers tend to separate Lansing into three major physical areas, which are connected by a series of bridges, and these rivers partially determine the service areas of many of the city's facilities. Plate 8, "Regional Physiography" shows graphically the local geographic features.

Public Utilities

The Lansing area lies within the Grand River Drainage Basin. The area lends itself to good drainage, but a serious problem exists relative to flood control. A study and report made by the U.S. Army Corps of Engineers recommends that the Red Cedar River be widened, deepened and straightened, that the Grand River be cleared out and enlarged, and that a diversionary channel be built at the location of Carrier Creek. Considerable land lies in flood plains, as may be seen on Plate 9, with part of this presently developed and part vacant. This indicates the need for special measures in the future to control the anticipated development of this land.

The general direction of drainage is to the northwest, with trunk line sewers following the low land adjacent to the river to a central disposal plant in the north end of Lansing. Most of the sewage flow is by gravity, with nine pumping stations located mainly in outlying areas to lift the sewage into the gravity system. Most of Lansing's sewerage system has been constructed on the "combined" basis, that is, with sanitary wastes and storm water run-off carried in the same sewers. The existing sewer system for Lansing is shown on Plate 10. While the capacity of the system generally is adequate to accommodate sanitary sewage under conditions of dry-weather flow, in several sections of the city it is not adequate to handle satisfactorily the surface run-off. In order that all areas of the city may remain desirable or develop properly, the construction of relief sewers is indicated in built-up areas as funds are available. In areas of new development, adequate provision for both sanitary and storm drainage should be required at the time of platting.

The difficulties often encountered with sewer facilities are not prevalent normally with respect to water distribution systems. No great difficulty is anticipated in Lansing in extending the water system to accommodate expected future growth.

The extension of gas and electricity, in general, as well as telephone service will present no particular problems, provided there are sufficient customers to justify such extensions. Reasonably compact, orderly developments which are contiguous to the existing urbanized area can be more easily and economically served than scattered, spotty settlements which require excessively long extensions of existing utility lines.

Subdivision Control and Zoning

The arrangement of land uses can be largely established by the design of new subdivisions. A well arranged development creates the best possible arrangement of streets and building sites, and promotes the most economical provision of utilities. New subdivision plats should be carefully examined with respect to

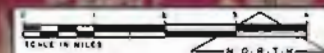
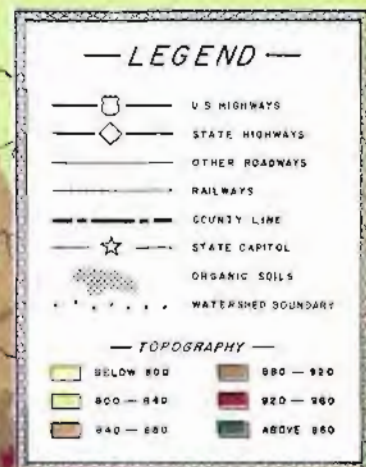
internal design and relationship to the overall pattern for the area if the most efficient and economical development is to occur.

Zoning is an essential and effective means to control the location of land uses and to guide the growth of the city. Through zoning the development and use of all private property can be directed in accordance with a carefully designed long-range plan for the most desirable arrangement of land uses. A periodic comprehensive re-examination and re-appraisal of the means of implementing the Master Plan is needed to assure that regulatory measures remain in accord with the Plan as it may be modified from time to time.

Land Use Deficiencies

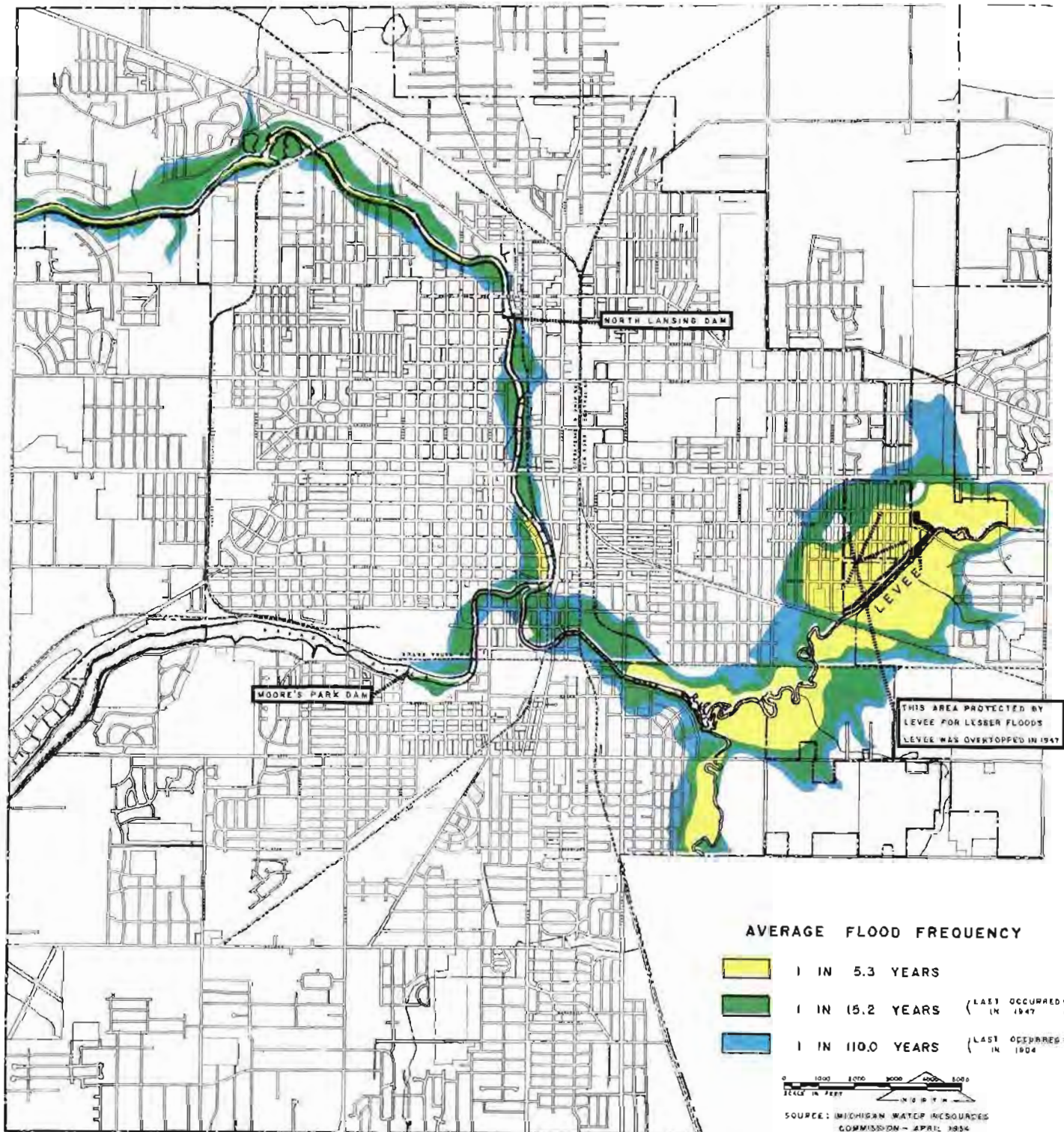
The land use pattern of Lansing has many shortcomings, most of them the consequence of lack of planning and improper zoning. In general, they consist of mixed land uses, poorly located major uses, and insufficient protection for proper uses. Needed are various improvements, some of which are new zoning and subdivision regulations, a flood control program with the restriction of building in flood plains, the reservation of land for public purposes, and a policy for the logical extension of utilities, facilities, and services to developing areas. It is the function of the Land Use Plan, described in a later section of this report, to assist in correcting deficiencies and to act as a guide to avoid or minimize mistakes in the future.

REGIONAL PHYSIOGRAPHY

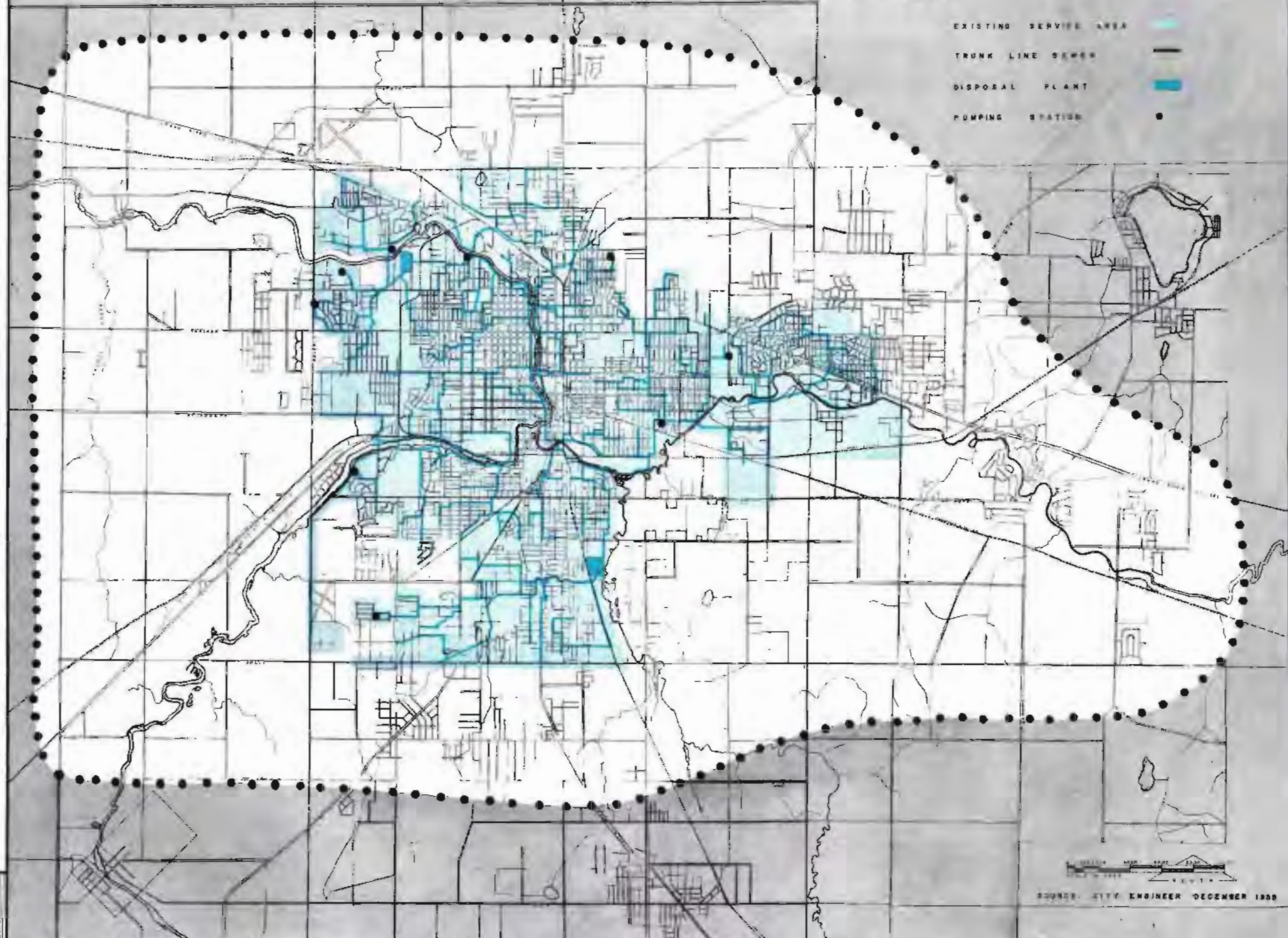


SOURCE: U.S. GEOLOGICAL SURVEY
U.S. DEPT. OF AGRICULTURE

FLOOD CONDITIONS



EXISTING SEWER SYSTEM



EXISTING SERVICE AREA
TRUNK LINE SEWER
DISPOSAL PLANT
PUMPING STATION



SOURCE: CITY ENGINEER DECEMBER 1959



HOUSING

In the average city, residential uses occupy the largest proportion of the land. In Lansing, housing occupies more than one-third of the total developed area of the city, by far the greatest part of this (nearly 84%) being single-family homes. Of the other types of housing, about 11 per cent of the residential land is developed with two-family dwellings; about four per cent with three and four-family units; and less than two per cent with multi-family dwellings. The type, distribution, condition and environment of the residential uses reflect the economic pattern of the city and the nature of the people residing in various areas.

It is important that residential areas be protected, and, where necessary, improved. While the individual home owner maintains his home and property, the creating and sustaining of good residential neighborhoods is dependent largely on conditions of factors over which the property owner has no direct control, these including sufficient schools and recreation areas of appropriate size and logical distribution, adequate streets and utilities, protection against incompatible land uses, and satisfactory standards of building construction and sanitation. The city by proper regulatory measures - ordinances and codes - and, as indicated, by the provision of adequate public facilities and services is responsible to a major extent in providing and maintaining desirable residential areas.

Housing conditions in Lansing are about average by comparison with other cities in Michigan and out-of-state averages, as determined by the U.S. Census of 1950. Indices such as over-crowding, the number of dwelling units with central heating, the number of homes built since 1940, and the percent of dilapidation indicate where Lansing is above or below average. On the whole, Lansing's housing is relatively good, but there are a few substandard areas where remedial action, more or less drastic in nature, will be necessary. Statistical data concerning housing conditions in Lansing and other Michigan areas are contained in Table 27.

Housing Survey of the City

Various types of housing deficiencies - as revealed by such indices as per cent of owner-occupied dwellings, dilapidation, persons per room, average monthly rent, and average value of dwellings were assembled from U.S. Census data and mapped for purposes of analysis. A generalized picture of housing conditions

in Lansing and the general location and approximate extent of sub-standard residential areas were determined from these maps. A composite map, "Housing Treatment" Plate 11, was prepared by superimposing the various deficiencies one on another so the coincidence of these conditions indicates, by a progressive darkening of areas, increasingly less desirable housing conditions.

There are relatively few areas within the city that are badly blighted. The map, above referred to, shows that the areas with the greatest occurrence of deficiencies are, generally: the area north and west of the Oldsmobile Plant, between the plant and the proposed internal connection of US-16; the area known as "Urbendale", to the south of East Kalamazoo Street adjacent to the Red Cedar River; the area between the New York Central Railroad and the Grand River from North Street to the Red Cedar River; and the area between High Street and the New York Central Railroad north of East Grand River Avenue.

It should be noted that within the above areas and other districts of relatively advanced deterioration, there may be standard residences that by themselves would not be classified for rehabilitation or redevelopment. However, because of the environment of the areas where they are located and in some cases the anticipated future use of adjacent property, it may not be desirable for them to remain. Therefore, these standard residences may be subject to elimination under a redevelopment program along with the remainder of the areas in question.

Corrective action is required in these areas where a serious deficiency exists. For more precise delineation, a special field survey was made of the areas of greater deficiencies as revealed by the Census data. The specific findings of this survey are available in the Planning Department Office.

Housing Conditions Outside of City

A generalized field survey was made to investigate housing conditions in selected areas around the city not broken down by the 1950 Census. Housing conditions in several areas were found to be badly blighted, notably in the area north of Lake Lansing Road, known as "Towar Gardens". The buildings here, in general, are poorly constructed, lacking in sanitary facilities, and are poorly maintained generally. Certain developments along Aurelius Road, south of Lansing, were also found to be sub-standard. There are other areas of limited size that are beginning to show signs of deterioration; some, unfortunately, are newer sections of poor original dwelling construction. Here and there are individual houses or small groups of homes needing minor repairs and rehabilitation.

Housing Trends

Since 1950 new residential construction within the city has been predominantly of single-family dwellings. Of some 4,060 building permits for residential construction since 1950, only 17 were for other than single-family units. The table below indicates the type of residential construction that has been undertaken since 1950. Most of the new construction has been of high quality, and has been in well-planned areas adequately equipped with physical facilities. In general, deterioration should prove unlikely in most of the new areas now being developed. However, future blight can be prevented only with sufficient enforcement of protective codes and ordinances and with the proper maintenance of the housing structures.

HOUSING TREATMENT

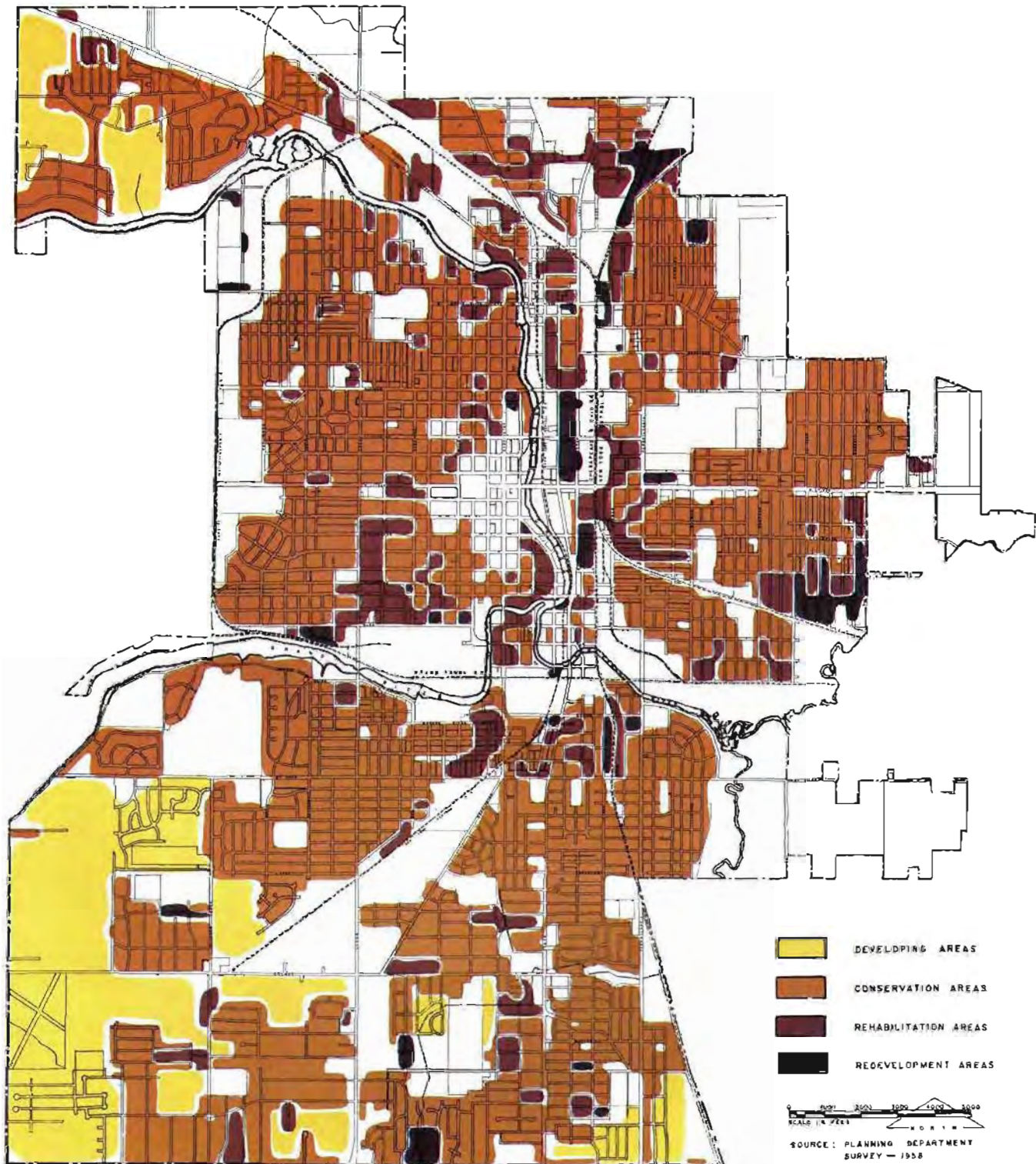


Table 26

RESIDENTIAL BUILDING PERMITS

City of Lansing 1950-1958

	1950	1951	1952	1953	1954	1955	1956	1957	1958
<u>NEW CONSTRUCTION</u>									
Single-family	744	464	473	500	419	382	273	379	409
Two-family	3	1	1	1	2	0	1	0	1
Multi-family	2	2	0	1	0	1	0	1	0
<u>CONVERSIONS & ADDITIONS</u>									
One to two-family	22	24	4	9	6	9	6	8	5
One to multi-family	1	6	0	3	0	1	0	1	0
Multi-family enlarged	5	5	2	4	2	2	2	1	1

SOURCE: Lansing Building Department

Recommendations for Improvement of Housing

The problem of slums and blighted areas in Lansing is significantly less prevalent than in most cities. However, there are some areas where future clearance and redevelopment will be necessary to bring about desired standards. Various other residential areas are declining in desirability and will need remedial measures to prevent the occurrence of serious problems. In addition, areas that are presently desirable will need protective measures to prevent their deterioration into blighted areas. There also is a need for improved control of future growth by adequate regulatory measures in order to prevent or at least minimize sub-standard developments.

An overall guide outlining in a general way the treatment suggested for various areas is shown on Plate 11, "Housing Treatment". The residential areas are indicated in the following classifications:

Developing Areas - In these areas the principal residential growth of the future is expected. Adequate public facilities, such as paved streets, water and sewers, recreation areas, and schools should be provided. To insure a satisfactory arrangement of land uses and protect against sub-standard dwellings, subdivision control, zoning and building laws should be in effect and consistently enforced.

Conservation Areas - These are developed residential areas where the character of the neighborhood and housing conditions are satisfactory. Such areas should be protected by conservation measures to prevent their deterioration into substandard districts. Strict application of zoning and building codes plus adequate maintenance of existing public facilities is essential. Housing and other facilities in certain sections desirably should be modernized and well-maintained. This often can be promoted through the organization of neighborhood improvement associations which can encourage the landscaping of grounds, planting of gardens, repair or painting of homes, etc.

Rehabilitation Areas - These are areas that are tending toward deterioration where some of the dwellings are sub-standard, although most may be satisfactory. Needed in such areas is the elimination of those structures beyond repair, rehabilitation to adequate standards of those dwellings that can be saved, and conservation measures to protect satisfactory homes. Objectionable non-conforming uses should be eliminated to help regenerate the areas. It is extremely important in rehabilitation areas that zoning, building and sanitary laws be strictly enforced, including the clearance of structures where necessary.

Redevelopment Areas - These are the areas where conditions are so bad that the only solution is complete clearance and redevelopment. Such redevelopment should conform with the recommendations of the Land Use Plan and should include the re-arrangement of streets and other facilities to secure the best possible new development. Many of the redevelopment areas are poorly located for residence purposes. In many cases the land could more economically and otherwise better be used for other than residential purposes.

Urban Renewal

Redevelopment generally is difficult to accomplish through private enterprise alone. Public assistance is required ordinarily because of the difficulty of assembling land into one ownership. The cost of assembling the many small units and scattered separate ownerships by private enterprise is usually prohibitive.

Federal legislation was enacted in the form of the Federal Housing Acts of 1949 and 1954 to help improve living conditions by assisting cities in eliminating slums and redeveloping or rehabilitating blighted areas in accordance with sound city planning. For those cities undertaking long-range programs to prevent and eliminate sub-standard housing, the federal government, through its housing and Home Finance Agency, will provide:

1. Technical assistance
2. Loans for surveys and plans
3. Capital grants-in the amount of two-thirds of the net cost of redevelopment and rehabilitation projects, one-third of the cost to be born by the city in the form of cash or public improvements
4. Mortgage insurance for low-cost housing for displaced families or for rehabilitation of existing dwellings.

To be eligible for certain forms of federal assistance, a community must have a "workable program" meeting the requirements of the law and acceptable to the Housing and Home Finance Agency. The "workable program" consists of seven major parts to which the city must commit itself and eventually attain. The parts of the "workable program" and their objectives are as follows:

1. Codes and Ordinances - - - "to assure adequate minimum standards of health, sanitation, and safety through a comprehensive system of codes and ordinances . . . "
2. Comprehensive Community Plan - - - . . . "Formulation . . . of a comprehensive general plan for the community . . . "
3. Neighborhood Analyses - - - . . . "the identification . . . of blight and logical patterns as a basis for planning . . . healthy neighborhoods."

4. Administrative Organization - - - . . . "a firmly established administrative responsibility and capacity for enforcement of codes and ordinances, and for carrying out renewal programs and projects".
5. Financing - - - . . . "development of means for meeting the financial obligation involved in carrying out urban renewal . . . "
6. Housing for Displaced Families - - - . . . "to facilitate the rehousing . . . of families displaced . . . "
7. Citizen Participation - - - . . . "community-wide participation . . . to provide understanding and support . . . necessary to insure success.¹"

As of December 31, 1958, there were 628 urban renewal projects underway in the United States, including 24 in Michigan.² The statutes through Act 344 of Michigan Public Acts of 1945, as amended, permit any city in the state to undertake an urban renewal program, and the city is authorized to finance such projects from tax revenues, general obligation bonds, revenue bonds or by special assessment districts.

Federal officials from the Housing and Home Finance Agency have already been consulted in regard to the feasibility of initiating an urban renewal program in Lansing. In this connection, inspections have been made of selected areas with the prospect of redevelopment to improve housing conditions, or to replace housing by non-residential developments. It is recommended that further steps be taken toward setting up a full-scale "workable program" toward accomplishing the indicated ends.

The needed improvement in housing conditions can come about only by concerted community action. It requires action on the part of residents, property owners, and city officials. Each working independently can accomplish little, but by working together substantial housing improvements are possible.

1. Quotations from *How Localities can Develop a Workable Program for Urban Renewal*; Revised March 1955, Housing and Home Finance Agency, Washington 25, D.C.
2. Housing and Home Finance Agency, *Urban Renewal Administration*, Washington 25, D.C.

PART II

MASTER PLAN ELEMENTS

INDUSTRIAL

RESIDENTIAL

COMMERCIAL

MAJOR STREETS

PARKING

TRANSPORTATION

SCHOOLS

PARKS

PUBLIC BUILDINGS



INDUSTRIAL AREAS

In the preparation of the Master Plan attention was first directed to potential areas for industrial development, because of the importance of industry to the community and due to the relatively exacting requirements of land for industrial purposes. Lansing's economic future depends to a very large extent on the preservation of its existing industries and the further development of its industrial potential. Sufficient and suitable land must be provided for the expansion of industry and for future industrial growth.

Existing Industry

In 1954 there were more than 200 manufacturing establishments in the Lansing Metropolitan Area, and about 150 of these were in the immediate urbanized area of the city. These 150 industries occupied nearly 1000 acres of land, or approximately five per cent of the total developed land within the urbanized area. An additional 500 acres of land were used for industrial purposes adjacent to the urbanized area, bringing the total land used industrially in the general Lansing area to approximately 1,500 acres. Most of the industrial sites are less than five acres in size, and only 25 exceed 10 acres. The distribution of industry in the community may be seen on Plate 6, "Existing Generalized Land Use".

Industrial firms in the Lansing urbanized area employed approximately 30,000 workers in 1955. Plate 12, "Major Traffic Generators" shows the areas where the larger concentrations of industrial workers are employed. Looking ahead, it is estimated that by 1980 there will be approximately 48,000 industrial workers in the area - this based on employment as reported by the 1954 Census of Manufactures, the 1950 Census of Population, and projections made on the liberal assumption that the area will have almost as high a ratio of industrial workers to total population in 1980 as it has presently.

It is estimated that approximately 5,000 acres of industrial land may be needed for the Lansing area by 1980. This is approximately 3,500 acres more than is used presently for industry. While the increase in workers during the next 20 years is estimated to be about 60 per cent, the additional land required amounts to an increase of well over 200 per cent. The trend toward larger, more extensive sites, plus the need for an adequate "reserve", explains this difference. In 1955 the Lansing area had approximately 30 industrial employees for each acre of land used industrially. In the future, as older plants are modernized or replaced by new plants and as sites in the older industrial areas are enlarged to provide for parking, landscaping and other facilities, it is estimated that the 30 per acre ratio will be reduced at least 20 per cent to about 25 or fewer employees per acre. In areas of new industrial development the trend is toward sites

with an employee-land ratio much lower than anticipated for Lansing's older industrial areas. New Plants located in exclusive industrial developments in the out-lying parts of the urbanized area, may be expected to have an employee-land ratio of approximately 10 persons per acre. The larger sites will provide for building set-back, parking areas, lawn and landscaping, recreation areas, room for future expansion, and other aesthetic amenities valuable to the community. The 5,000 acres of industrial land previously indicated would amount to almost ten per cent of the total developed area in the foreseeable future. This would exceed the present 5.3 per cent of the developed urbanized area in 1956, but is less than the 10.4 per cent within the developed area of Lansing in 1954 and the 9.8 per cent in the city in 1937. In 1980 there may well be about two acres of industrial land per 100 persons - twice as high as the approximately one acre presently used by industry in Lansing and adjacent areas.

The largest part of the anticipated industrial growth necessarily will occur outside the present corporate limits of Lansing because of the acute shortage of industrial land within the city. However, additional industrial sites may be made available in the city in the event of clearance of substandard residential areas economically or otherwise more suited for industrial use. These centrally-located sites would be highly desirable for certain industrial uses because of the facilities and services that could readily be provided.

Industrial Clearance Areas

Most of the substandard residential areas considered suitable for industrial development are being infiltrated by industry and commerce, and some of the residential structures which occupy most of the land have become dilapidated partially because of the encroachment and blighting influence of non-residential uses near them. As the property values in these areas depreciate, the likelihood of their being rehabilitated for residential occupancy is lessened. If the blight is to be prevented from spreading indefinitely, it is important that a firm line be established between contiguous industrial and residential areas. Plate 11, "Housing Treatment", shows the areas which may qualify for clearance, part of these for redevelopment for industrial purposes. The Federal Housing Acts of 1949 and 1954 provide a means for obtaining federal assistance in clearing substandard areas.

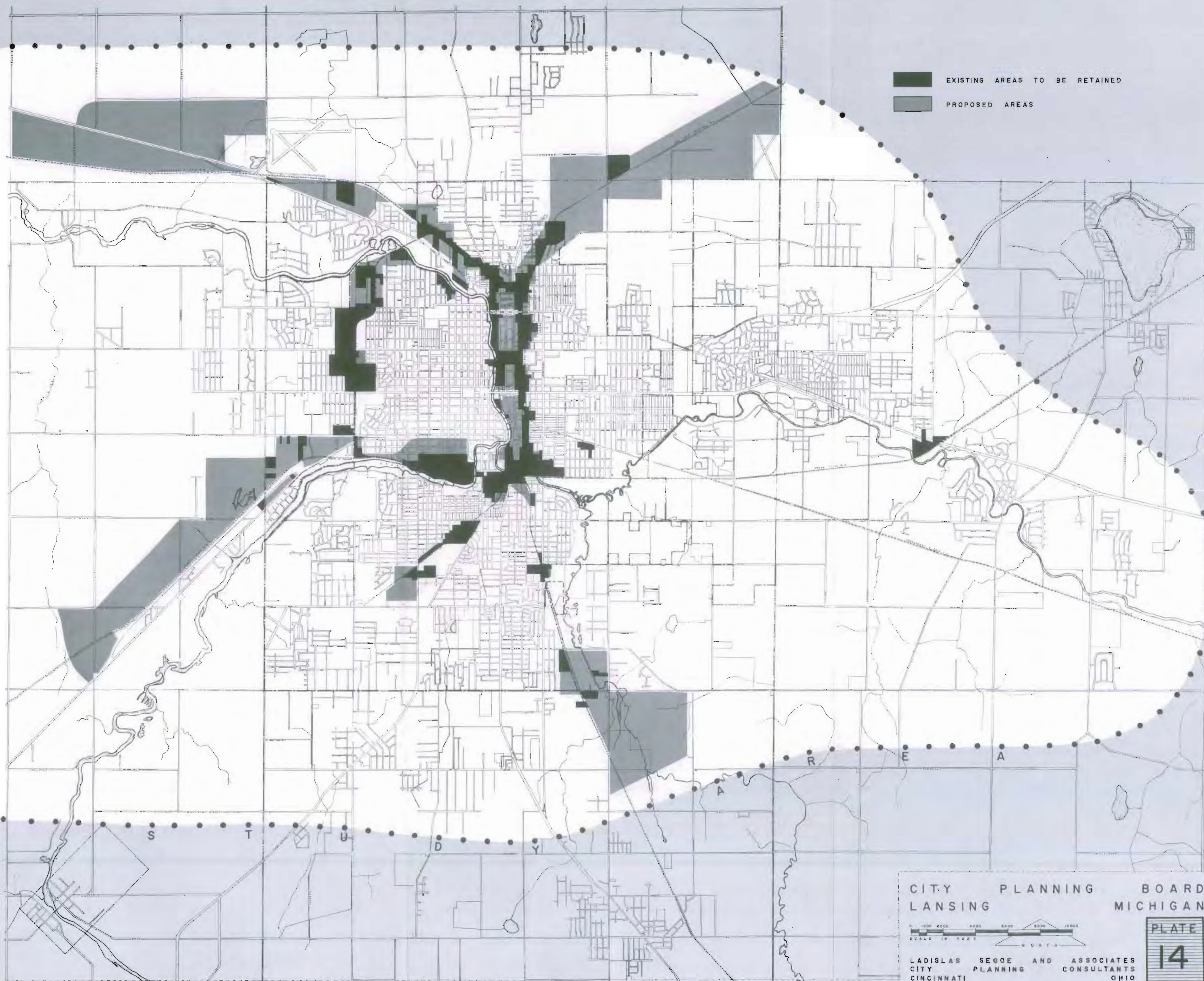
Future Prospects

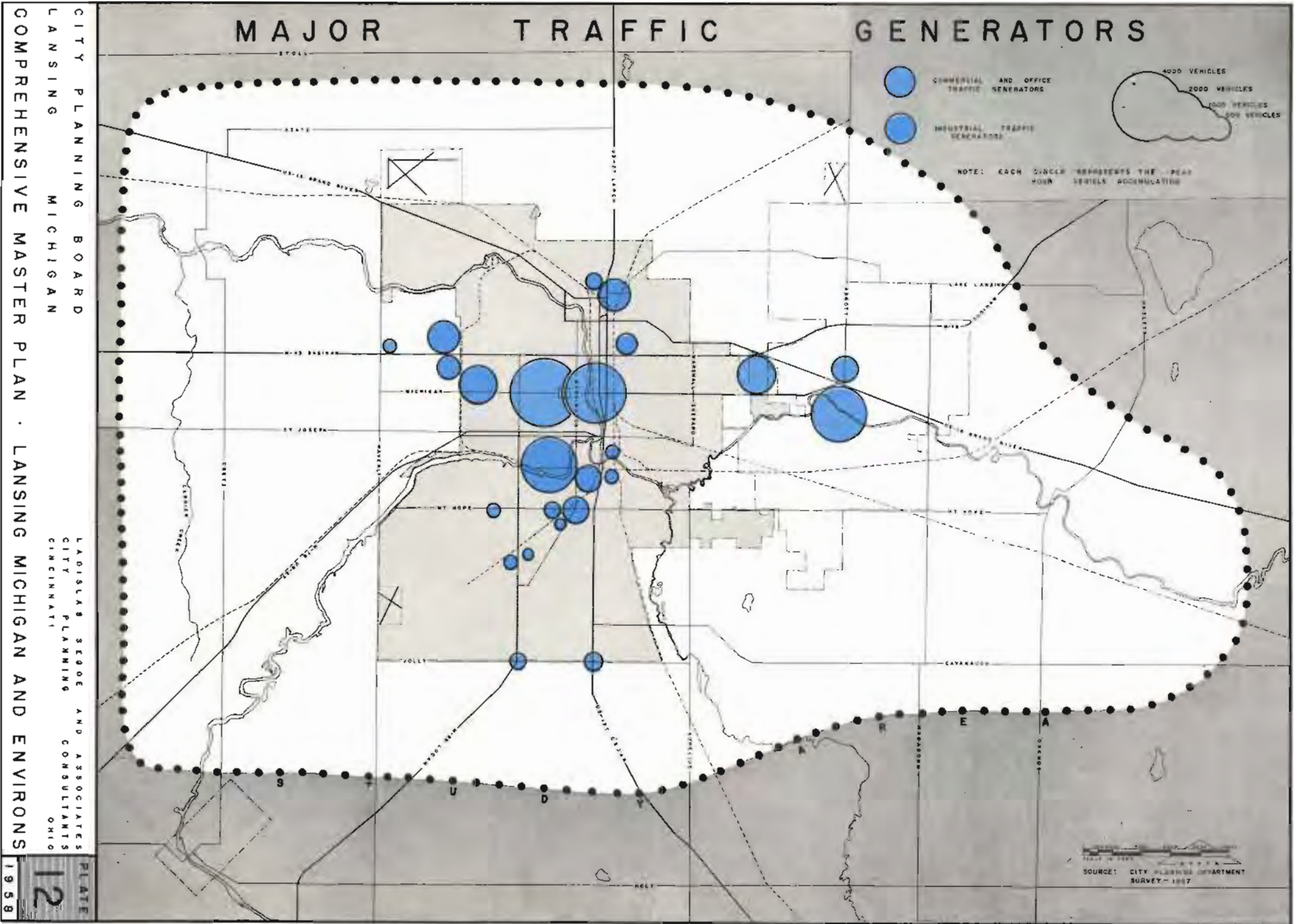
Precise determination of future demands for industrial land is impossible, depending as it does on so many variable factors. However, as previously indicated, it appears necessary to provide for approximately 3,500 additional acres of industrial land for the future development of the community, this providing ample allowance for unforeseen requirements. Industrial property beyond the projected 1980 needs will probably be needed and additional sites might well be held in reserve for future industrial purposes.

A special survey was made to find the locations best suited to accommodate the future industrial demands of the community. The following characteristics were considered in analysing potential sites:

- (a) Transportation - accessibility by rail, highway and air facilities;
- (b) Topography - levelness, freedom from flooding and adverse soil conditions;
- (c) Utilities and Services - ease and economy of serving with utilities and services;
- (d) Effect on Surrounding Property - absence of nuisance aspect or prospect of otherwise damaging adjacent property;
- (e) Location in Overall Plan - suitability with respect to relative need for land for other uses;
- (f) Accessibility to Workers - appropriately located as to be readily accessible to workers from residential areas;

INDUSTRIAL FACILITIES





(g) Size of Site - large enough to provide sufficient acreage for modern facilities and space for future expansion;

(h) Industrial Park - adaptability to development as planned industrial park or district. (see Plate 13)

Based on the above factors, the areas seemingly best suited for industrial development were determined¹. The majority of the areas selected were located along existing railroads, there being several reasons for this; first, most industries desire a location along a railroad for shipping even if they are served primarily by trucks as this gives them the benefit of competitive transportation prices; second, sites along railroads normally are not desirable for residential use, and industry is the least affected by the objectionable aspects of the railroad; third, since most railroads radiate from the center of the urban complex, they provide convenient corridors for industry and transportation.

In the light of the foregoing, the primary industrial areas and the location of future industrial districts are shown on Plate 14, "Industrial Facilities".

In passing, it is important that potential industrial sites within the city be preserved for future use, and that all means at hand be employed toward keeping the sites outside the city in such open uses as will preserve them for future industrial uses. If and when the land is zoned for industry, it should be protected from pre-emption by non-industrial uses.

Planned Industrial Parks

The planned industrial park or district is based on a relatively new concept of industrial development and use. Such districts or parks are becoming increasingly popular and effective in attracting industry and guiding industrial growth. They are primarily designed for small manufacturing plants, wholesale uses and warehouses, although, in some, larger sites are available for larger plants. If properly planned, developed and managed they are exceptionally profitable assets to the community.

The industrial park offers the advantage of concentrating industries in locations where they can efficiently be provided with various utilities and services. It eliminates the objection of scattered industrial development and in the overall community pattern promotes rational integration of industrial areas. Ancillary commercial uses such as restaurants, service stations, banks and offices often are provided in or adjacent to an industrial park.

The location of the industrial park normally is close to major highway and rail facilities. In some cases the park can be developed in conjunction with an air terminal.

A typical industrial park is shown on Plate 13.

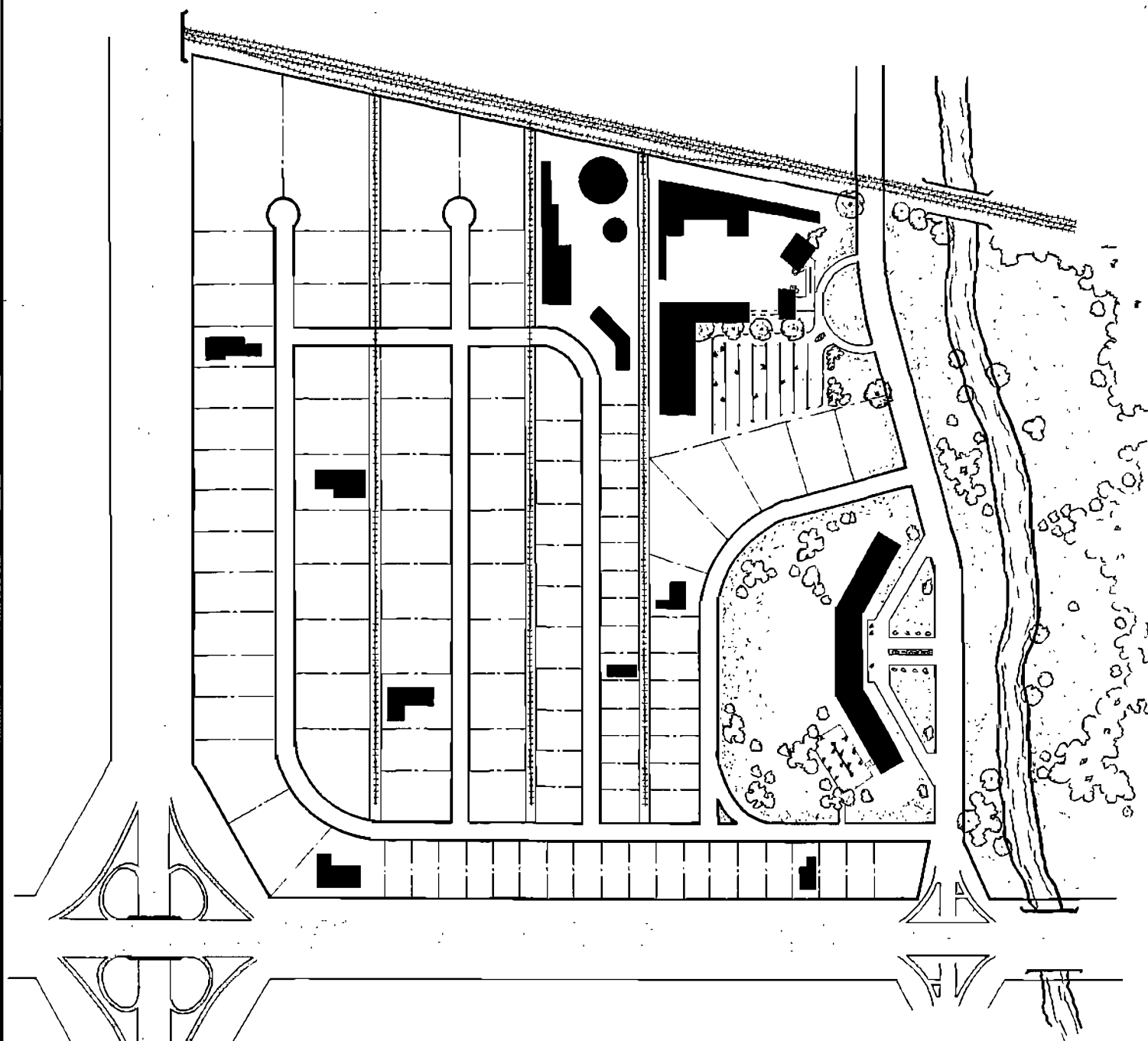
Recommendations

In the future, industry should be located in accordance with the Land Use Plan, described in another part of the report. Those industries which are advantageous to the community and will best complement and supplement the existing industries should be sought. Industries not willing to provide modern, attractive plants or which produce excessive smoke, odor, noise or dirt, should be discouraged from locating in the area. The following recommendations should be borne in mind by those closely concerned with an industrial expansion program for Lansing:

¹ Data on the individual sites considered in the survey of industrial land are available in the Planning Department Office.

- (a) Zoning should be so set up and used to assure that land, appropriately located and otherwise suitable, will be preserved and kept available to meet the future needs of industry;
- (b) Potential industrial areas thus should be protected against the encroachment of non-industrial uses;
- (c) Substandard residential areas should be cleared for industrial expansion, if located within potential industrial areas;
- (d) Planned industrial parks should be encouraged;
- (e) Sites for new industrial development should be large enough to include ample space for off-street parking and loading and reasonable room for expansion;
- (f) Improperly located industrial uses should be relocated.

PLANNED INDUSTRIAL DISTRICT



- ★ PLANNED LAYOUT
- ★ RAIL ACCESS
- ★ EXPRESSWAY ACCESS
- ★ CURB, GUTTER, & PAVING
- ★ RECREATION
- ★ EXCLUSIVE ZONING
- ★ UTILITY SERVICES
- ★ VARIABLE LOT SIZES
- ★ OFF-STREET PARKING
- ★ SITE MAINTENANCE

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COMPREHENSIVE MASTER PLAN · LANSING · MICHIGAN AND ENVIRONS

PLATE
13
1958



RESIDENTIAL AREAS

"Cities are primarily for people," and residential areas occupy greater quantities of land than do other uses. Because of this, obviously it is important that the future pattern of residential land use be carefully determined. The location of residential areas, the density of population, and the size and relationship of one residential area to another have a very significant bearing on other elements of the overall plan.

To establish the appropriate pattern of future residential development, a primary consideration is that of the anticipated distribution of the future population; or, to put it another way, the overall area required for residential development. Another consideration is the density of population within the various parts of the overall area. Based on these and other considerations, a "community structure plan", may be devised, organizing the overall urban and urbanizing area into communities, sub-communities and neighborhoods.

Residential Distribution

Future residential development should be directed to the locations best related to existing developments and to where necessary facilities and services exist or can most readily and efficiently be provided. Growth desirably should be encouraged in locations contiguous to existing developments, so that utilities and other facilities can be easily and economically extended. Residential development should be permitted only where it can readily be serviced with such facilities as sewer and water.

Future Housing Requirements. It is estimated that approximately 30,000 to 35,000 new dwelling units will be needed in the Lansing area by 1980, based on the estimated growth of population. Most of the new dwelling units would provide for the anticipated population increase of 90,000 to 100,000 persons while others would be required as replacements for dwellings likely to be eliminated in residential clearance areas and for units eliminated by the expansion of business, industry and public facilities.

Growth in the City. At the end of 1958 there was sufficient land within the city limits of Lansing for some 14,000 additional dwelling units. If all of the "residential" land in the city were to be developed at reasonable densities the total population within the city would approximate 160,000. However, some of the potential residential land never will be developed and some of the present residential areas - such as those surrounded or encroached upon by industrial uses - desirably should be converted to other uses.

Accordingly, it is reasonable to conclude that the future total population within the 1958 corporate limits will not exceed 140,000 to 150,000.

Growth Outside the City. More than 60 per cent of the anticipated residential growth in the foreseeable future is expected to take place outside the city. To develop a rational pattern for residential expansion, studies were made to determine the areas best suited for the anticipated growth. Factors and conditions, such as economy of utility extensions, topography, existing roads, nearness to employment centers, among others, were taken into account in determining areas suitable for residential expansion, bearing in mind that urban development desirably should be in such progression that each new section may be contiguous to an area already developed. Obviously, in this connection, it would be all too costly if not impossible to provide improvements and services to numerous small, widely scattered settlements.

The "Land Use Plan," described later, is a frame of reference for establishing policies regarding the extensions of utilities and other facilities to assist in guiding urban expansion along desirable lines. For example, Plate 10, "Existing Sewer System," shows the present location of sewers; and from this and the future "Land Use Plan", it is possible to visualize, in a general way, necessary sewer extensions. The general area to the west and southwest of Lansing appears to have the greatest potential for future residential growth, whereas the area north and east of East Lansing, stretching east along US-16 to about Cornell Road, is also expected to have growth, but not as extensive as to the west and southwest of Lansing. The areas with the least potential for residential growth are to the southeast, because of the University holdings and potential industrial areas, and to the north, because of industrial development, the airport and poor drainage conditions.

The direction of recent residential growth, of course, is an indication of the apparent desirability of various sectors for residential expansion. The land subdivision activity that has taken place since 1945 in the Lansing area can be noted on Plate 15, "New Subdivisions Since 1945", along with statistics regarding recent subdivisions of land in Table 28. In the period from 1945 through 1958, during which 340 subdivisions were recorded in the Lansing area, only 72 (one-fifth of the total) were inside the city.

The future "urban service area" will be determined largely on the basis of land suitable and available for residential, industrial and commercial use. The future Lansing community is expected to aggregate some 87 square miles and extend from Carrier Creek on the west to Cornell Road on the east, and from below Miller Road on the south to State Road on the north. Within this "urban service area" those parts in which residential use desirably should be directed are shown on Plate 18, "Residential Facilities".

Residential Density

The population within the residential areas is distributed at varying densities expressed as a ratio between the numbers of persons and the amount of land they occupy. Only land actually occupied for dwelling purposes - not vacant land or land used for streets and non-residential purposes - is accounted for here in computing "net" residential densities. In 1954, a land use survey was made which indicated that the city had an average density of about 32 persons per net residential acre. The overall density for the entire urban area, because of the more open development in the outlying parts, was about one-half that of the city, or approximately 15 persons per net residential acre. Much of the anticipated future residential growth is expected to occur at reasonably low densities - on lots of from 7,000 to 10,000 square feet or so in area, with from four to six homes per net residential acre, or 12 to 20 persons per acre. Some of the future residential growth will probably develop at still lower densities, on lots of one-third acre or larger. Most of the low density growth can take place only in the areas outside of the city where large tracts of vacant acreage are available. Within the city it may be expected that the densities will tend to become higher as the remaining parcels of land are subdivided and the large older single-family homes are converted to multiple-family use. Rental units for multiple-family occupancy may be constructed in greater numbers than previously, to house elderly couples, students, unmarried working people, and young

1945



couples wanting a central location - thus seemingly creating a market for apartments near the central business district and the Capitol. Other apartments may be justified in the proximity of industrial districts and selected locations elsewhere.

The overall residential density by 1980, considering both existing and future single-family and multiple-dwelling areas, is expected to be approximately four dwelling units per net acre of residential land - with an estimated 25 to 35 persons per net residential acre within the present city and between 10 and 14 for the entire urban area. At these densities, approximately 18,000 to 24,000 acres of residential land will be needed, an increase of some 8,000 to 14,000 acres, or about two times the amount of residential land at present. This also allows for a surplus of land since it cannot be expected that all of the future residential land will be developed to its full potential. The additional acreage should readily accommodate approximately 30,000 to 35,000 new dwelling units between 1958 and 1980.

Community Structure

A plan of community structure attempts to provision an organized system of more or less self-contained residential sections bounded or separated from one another by various physical barriers such as rivers, industrial or commercial areas, railways, or existing and future trafficways.

The community structure plan for Lansing constitutes the general foundation for the more particularized studies of the various parts of the community.

In developing the Master Plan the overall urban and urbanizing area was first divided into "communities" which could be identified readily as recognized physical entities. The "community" is primarily residential in character, but has within it a full complement of facilities for shopping, social, civic and religious activities and for education and recreation. It can be identified as follows:

"A typical community might be described as an area containing a population of 50,000 to 70,000, occupying an area of from 10,000 to 14,000 acres. Normally the community contains at least one high school with its accompanying recreational facilities, one or more large parks, and one major shopping center. The community is further divided into two or more sub-communities".

The "sub-community" has facilities similar to those of the "community", but on a more limited scale. It may be defined as:

"A sub-community contains a population of 20,000 to 25,000 occupying an area of between 2,500 and 3,500 acres, generally comprising the service area for one junior high school, and containing a special recreation facility, such as an athletic field, and an important shopping center. The sub-community is further divided into two or more neighborhood units".

A "neighborhood" comprises the minimum area that ordinarily will support the average requirements for every-day living, such as elementary schools, recreation facilities, shopping areas, and churches. It is of such a size that most of the movements within the area, especially those of children, can be done comfortably and safely on foot. It is provided with adequate transportation facilities to allow for convenient connections to other parts of the city, but is so designed as to discourage the movement of through traffic within the area. Plate 16, "Planned Neighborhood Unit", is an example of a well-planned neighborhood unit. The neighborhood can be identified more particularly as:

"A neighborhood contains a population of 4,000 to 6,000 occupying between 500 and 800 acres. Normally, it has a maximum radius of approximately one-half mile which allows for convenient pedestrian movement. It contains an elementary school with playground facilities, additional park and playgrounds where necessary, and either has a neighborhood shopping center or is convenient to other commercial facilities".

The planning and development of raw land can be patterned closely after the "ideal" community set up in the above standards, but to a lesser degree can these standards be built into the presently developed areas. The new areas should be primarily residential, supplemented only by closely related non-residential land uses and required public service facilities. Within the built-up area of the city such a pattern as indicated cannot be completely achieved. In some sections of the city thoroughfares divide a given area into parts too small for the formation of satisfactory neighborhoods. In such cases, the smaller units, "sub-neighborhoods", are combined with adjacent neighborhoods for the provision of some of the necessary service facilities. Plate 17, "Community Structure", shows the proposed pattern of future Communities, Sub Communities and Neighborhoods for Lansing in 1980.

Major Recommendations

The areas proposed for future residential expansion and their anticipated densities are shown on Plate 18, "Residential Facilities". It is recommended that most of the territory indicated will be provided with all or most of the urban type of facilities and services (water, sewerage, sidewalks, etc.). As may be seen in the plate showing residential expansion, the areas are for the most part consolidations and extensions of existing urban fringe developments in locations where residential subdivision is now occurring. The outer boundaries of these residential districts represent in general the limits of the "urban service area", within which urban growth in the foreseeable future should be directed and desirably confined through appropriate subdivision and zoning regulations. The location and extent of the "urban service area" has an important bearing not only on policies relating to zoning and subdivision regulations, but on the extension of thoroughfares, sewer and other utilities, on the location of schools, parks, playgrounds, fire stations, libraries, and other public facilities, as well as shopping centers and industrial areas. The "urban service area" practically delineates the boundaries of the future metropolitan complex.

PLANNED NEIGHBORHOOD UNIT






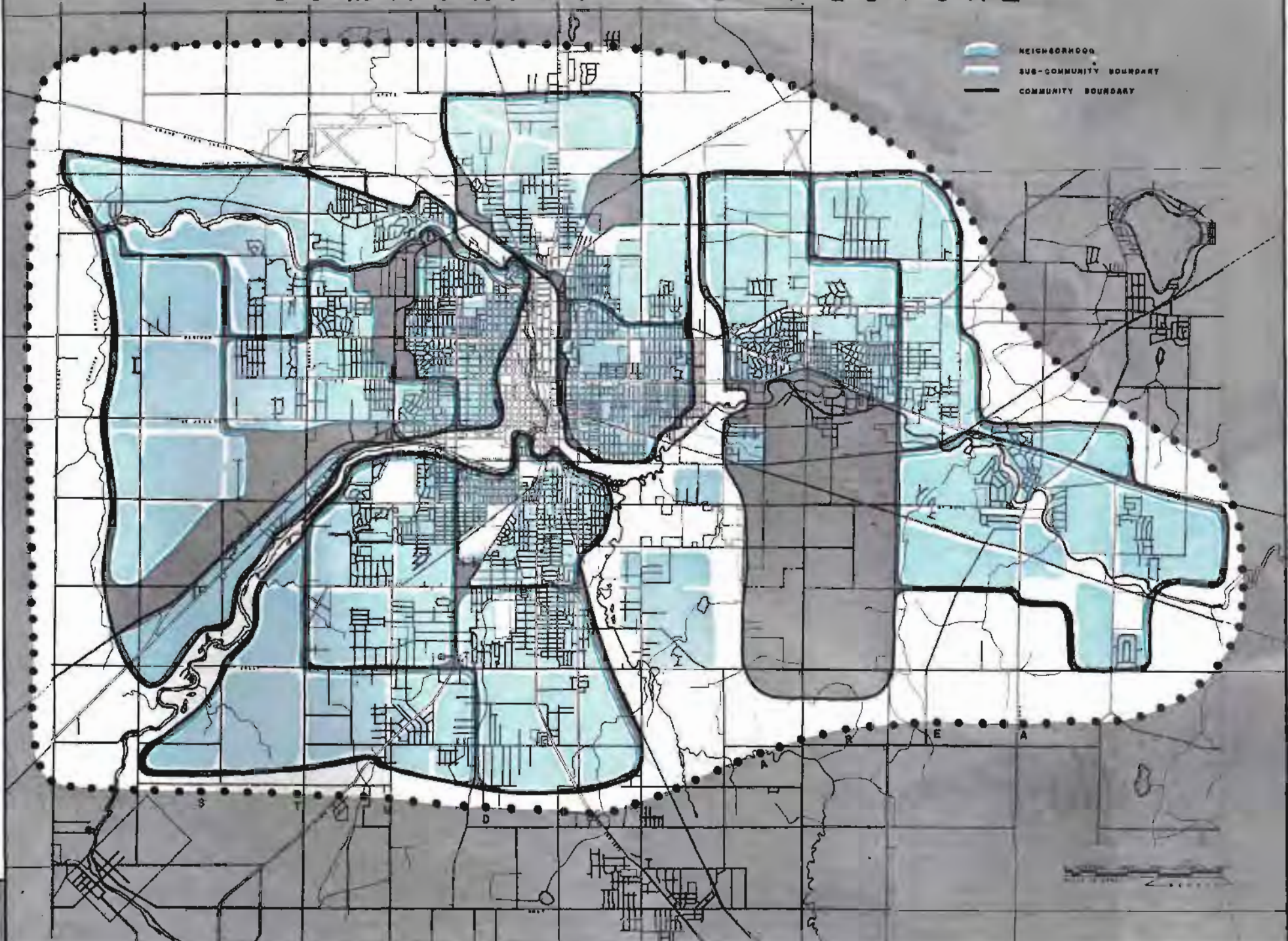
NEIGHBORHOOD DESIGN



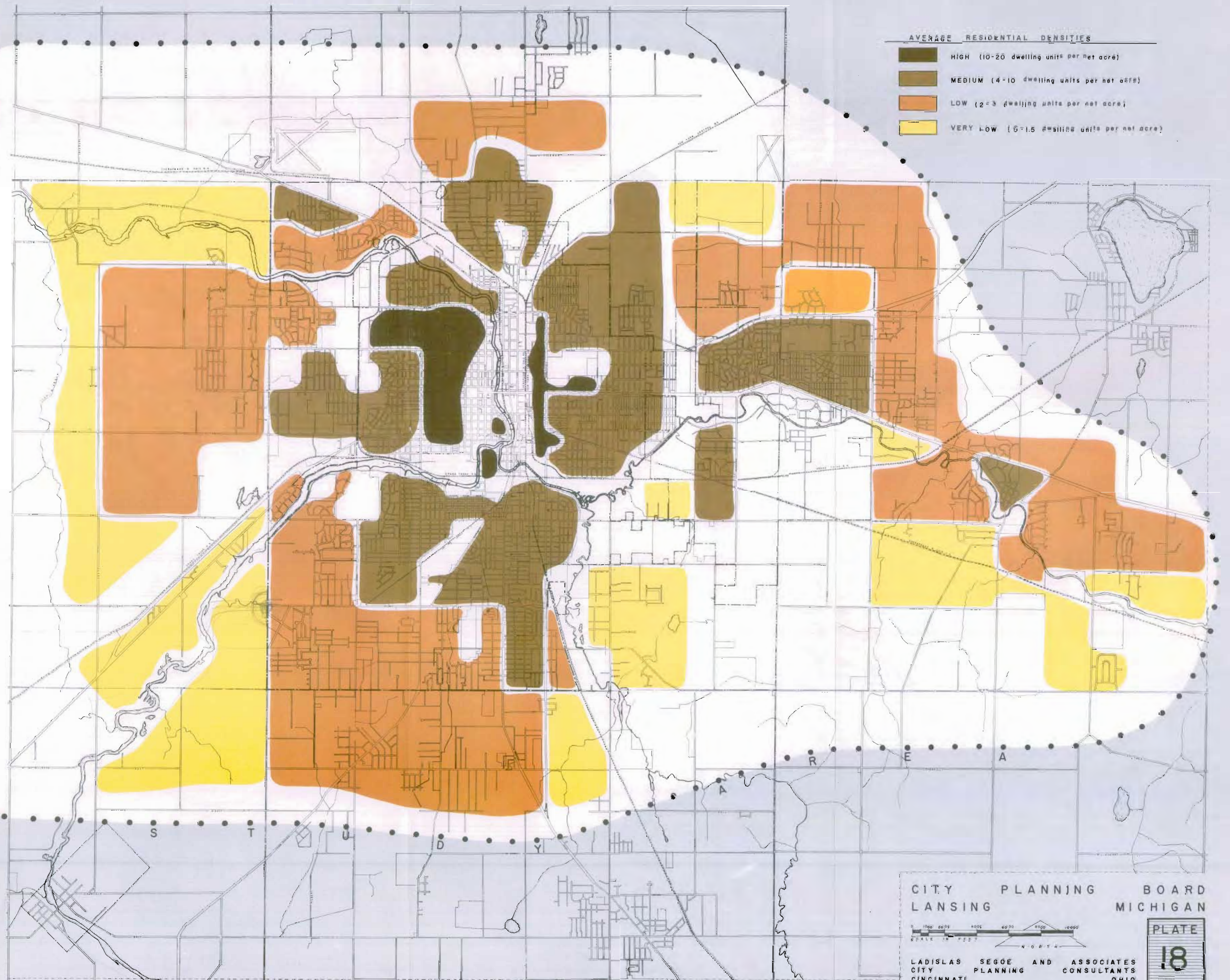
NEIGHBORHOOD SHOPPING CENTER

COMMUNITY STRUCTURE

-  NEIGHBORHOOD
-  SUB-COMMUNITY BOUNDARY
-  COMMUNITY BOUNDARY



RESIDENTIAL FACILITIES





COMMERCIAL AREAS

Commercial areas serve a community by providing goods and services, tax revenue for local government, places of employment and as a meeting place for friends and business associates. Commercial areas generate large volumes of traffic, affect property values, impede or in some cases encourage the development of adjacent properties, and affect the community's overall structure. Lansing's shopping and service facilities are located primarily in the Central Business District, in outlying shopping centers, and in specialty or general business areas along major streets.

The commercial areas of Lansing comprise only 300 acres or about 3.6 per cent of the total developed area. Outside the city, but within the urbanized area, about 250 additional acres of commercial land raise the total to approximately 550 acres, which is about 2.3 per cent of the overall developed area. Although the land in commercial use is small percentage-wise, its effect on the economy of the community is of prime significance. Plate 6 shows graphically the distribution of commercial land within the Lansing area.

In general, Lansing's commercial areas suffer from five major problems: obsolescence; mixed land uses; "ribbon" and "four-corner" development; through-traffic disturbance; and a general lack of adequate parking facilities. To solve these problems and attempt to avoid their recurrence in the future, existing shopping areas should be refashioned and new ones built to modern standards. New or refashioned shopping districts, as has been demonstrated in recent years, should have stores grouped together, with an ample supply of off-street parking and controlled access from all major streets. Desirably, commercial uses should not develop, as many have in the past, with stores strung out along major streets or located on all four corners of an intersection. Such arrangements cause inconvenience and hazards for shoppers, fail to provide adequate parking, and result in poor business for merchants and poor investments for property owners. It is now considered preferable to group commercial uses in an integrated center with sufficient depth of property to provide for parking, and otherwise so designed to allow for safe and expeditious movements of traffic. A typical "planned shopping center" is shown on Plate 16.

Types of Commercial Development

Commercial areas, existing and proposed, normally can be grouped into various classifications based upon their size and the type of stores and service establishments they contain. Shopping districts vary in size from the regional business center, with 35 to 60 or more stores, to the convenience shopping center with

three to five stores. Each center, depending on its size and drawing power, serves a larger or smaller sales service area as well as functioning as the local shopping area for its immediate vicinity. Any shopping center's predetermined size may be larger or smaller than centers of other classifications if its potential market area is sufficient. It is therefore possible for even a "convenience center" to surpass a "neighborhood center" in size, although the size and type of individual enterprises will be of the convenience service type.

Regional Business Centers. This is a "one-stop" shopping center, including major department stores, offering a wide variety of goods and services. In addition to shopping facilities, the center normally contains business and professional offices, and may include, in addition, such establishments as theaters, bowling alleys and restaurants (see Table 29, "Shopping Center Standards"). In size, the center will range from 40 to 60 acres or more and will serve a population of from 100,000 to 250,000 persons.

Lansing has two regional business centers - the Central Business District and Frandor shopping center. The largest, the Central Business District, functions as the major shopping area for the region and has become the center of concentrated commercial activity. The general area designated as the Central Business District, along with the "fringe" area around, comprises about 150 acres. Within this general area, about 45 acres comprise the "core" which contains primary stores, specialty shops and the principal service stores, also the principal offices, financial institutions, places of entertainment and the more strategically-located parking lots. The Central Business District is the "keystone" in Lansing's tax structure; although it occupies less than two per cent of the developed area of the city, it accounts for nearly 20 per cent of the taxable value. The district provides approximately 24 per cent of the employment in the city and has an annual retail business of approximately \$50 million.

The Central Business District is the center of diversified activities and one of the largest traffic generators in the city. Approximately 90,000 to 100,000 persons come to the Central Business District during the average day, for such purposes as working, shopping, business, eating, or entertainment. A traffic survey made in the spring of 1957 revealed that approximately 86,000 cars enter and 86,000 cars leave the Central Business District during a 24-hour period, approximately 6,300 of these during the day's peak hour. The maximum accumulation in the district reaches approximately 12,500 cars. Approximately 30 to 40 per cent of the vehicles that enter the Central Business District have no destination therein, but are merely passing through to reach destinations beyond. Proposed remedies to alleviate this situation are set forth in the section of this Master Plan devoted to "Major Thoroughfares".

Vehicular traffic is but one of the problems facing the Central Business District. Inadequate parking, obsolescence, vacant buildings, declining property values, a mixture of incompatible uses, and conflict between pedestrian and vehicular circulation are problems of primary concern. In various respects, the Central Business District has lagged behind other retail areas in providing facilities for shopping. Modernization of buildings has not kept pace with demands for attractiveness and convenience.

If the Central Business District is to succeed in its role as the commercial center of the Lansing region it must find a new and dramatic approach to revitalize its area. A preliminary study of the area was made to determine certain basic trends and the consequences if these trends were allowed to continue. The following are some of the implications and general conclusions based on this investigation:

- (a) The entire Central Business District may tend to expand but at a slower rate than the population growth of its trade area, whereas the "core" area may tend toward greater concentration;
- (b) There probably will be an increasing proportion of professional and business office uses within the Central Business District;
- (c) There will, as suggested, be more intensive development of the land in the Central Business

District with a condensation of primary uses and a gradual relocation of inappropriate secondary uses;

- (d) Corrective action is indicated with respect to improved accessibility and vehicular circulation; more adequate parking areas; improved transit facilities; better pedestrian circulation by minimizing conflicts between vehicular and pedestrian movements; and architectural renovation and the creation of a shopping center atmosphere.

It is not within the scope of this report to find a complete solution to the problems of the Central Business District, through even more drastic refashioning than implied by the foregoing, but to relate the district's function to the commercial activities of the entire metropolitan area and suggest the general limits of the district. A detailed study of the Central Business District, within the broad framework of the Master Plan, is presently being made. This is a special study dealing with the complex problems of the Central Business District within its own area of influence, as well as its relationship to the whole community and region. Detailed recommendations for the future of the district will be forthcoming at the conclusion of this special study. A preliminary generalized plan for the Central Business District is shown on Plate 19.

Frandon shopping center is the other regional center for the Lansing area. Frandon comprises approximately 55 acres of land, has about 60 establishments occupying about 400,000 square feet of building area, and provides parking for about 4,000 cars. With the strengthening of the Central Business District, and the existence of Frandon, it is not likely that the Lansing trade area could support a third regional shopping center.

Community Shopping Centers. Modern centers of this type are designed as integrated architectural units with a fairly wide variety of establishments. The main store is normally a small (junior) department store about which are grouped apparel stores, supermarkets, a restaurant, branch banks, and other service establishments such as barber shops, beauty shops, shoe repair, and radio and television repair shops, all gaining immediate access by way of landscaped pedestrian malls around which parking areas are provided. Patrons may drive to such centers, make all normal purchases, do their banking, have dinner, and in so doing, need to park but once.

The community center normally requires a service trade area within a distance of about 1 1/2 to 2 miles and a population of about 40,000 to 80,000 persons. It normally occupies fifteen to twenty-five acres for its stores, parking, and service areas. The Lansing area presently has only one community-type shopping center, this being the business district of East Lansing with its service area of East Lansing, Okemos, and Michigan State University. It is anticipated that three additional community centers will be justified, and the Land Use Plan designates logical locations as South Logan at Holmes Road, North Waverly at West Saginaw, and North East Street at Coleman Road.

Sub-Community Shopping Centers. These centers serve essentially the same purpose as the community center, but are somewhat smaller in size, number of stores and area served. The sub-community center, however, is larger and provides a greater quantity and variety of goods than found in the neighborhood center, described later; however, its primary function is supplying the every-day needs of the customers. Quite often the sub-community center is an integral part of a large string commercial development along a major street or highway. In the Lansing area, there are five existing commercial areas that can be identified as the sub-community type. These are quite well distributed throughout the city, being located to the south on South Cedar Street and South Washington Avenue, to the west on West Saginaw Street, to the north on Grand River Avenue, and to the east on East Michigan Avenue. Five additional sub-community centers may be expected to develop either anew or by expansion of smaller commercial centers. The location of the various existing centers and the "approximate" location of proposed centers may be seen on Plate 20, "Commercial Facilities".

Neighborhood Shopping Centers. Neighborhood centers serve mainly the day-to-day needs of people living in the immediate vicinity. They are smaller in size than the community or sub-community center because they serve a smaller portion of the population. The neighborhood center ordinarily will vary in size from two to four acres and contain from five to ten stores. The center's size is partially determined by its location and proximity to other commercial developments. The primary store is usually a food store of approximately 8,000 to 12,000 square feet of gross sales floor area. It is estimated that approximately 25 neighborhood shopping centers will be needed in the Lansing area by 1980 to serve adequately the population. Commercial areas, such as the Colonial Village shopping center on West Mount Hope or the new Southtown Center on South Cedar Street are examples of neighborhood shopping centers.

Convenience Shopping Centers. In areas of limited size or low population density it is normally economically unfeasible for neighborhood shopping centers to develop. In such cases, convenience shopping centers partially satisfy the day-to-day needs of a limited number of people. A group of three to five stores on approximately one acre of land can serve about 2,000 persons. Many existing isolated commercial establishments may be considered as convenience centers, and as such are part of the overall commercial complex of the city.

General Business Areas. These areas generally are developed by types of business that serve the entire community but do not require a high-value central location. Use such as automotive sales and service, building supply, "fix-it" shops, household appliance repair, trailer rental, plumbing and heating shops are representative of types found in this district. Warehousing and wholesaling uses also may be included in such areas. When general business areas are located along major highways or other trafficways, uses such as gas stations, drive-in restaurants, auto wash stations, and other highway service establishments are appropriately located in such areas. These latter uses normally are not appropriate in the Central Business District since they generate large volumes of auto and truck traffic, require wide driveways, tend to endanger pedestrians, and generally are undesirable neighbors to retail stores and service establishments patronized mainly by pedestrians.

The three principal general business districts shown on the Land Use Plan are along South Cedar Street, North East Street, and East Michigan Avenue. Other smaller districts are designated at various other locations. General business districts should not be extended indiscriminately along all major streets and highways, but located and confined to restricted areas.

Particularized commercial standards which have been developed as a guide to the location, classification, and development of commercial areas through-out the urban and urbanizing area of Lansing are contained in Table 29, "Recommended Shopping Center Standards".

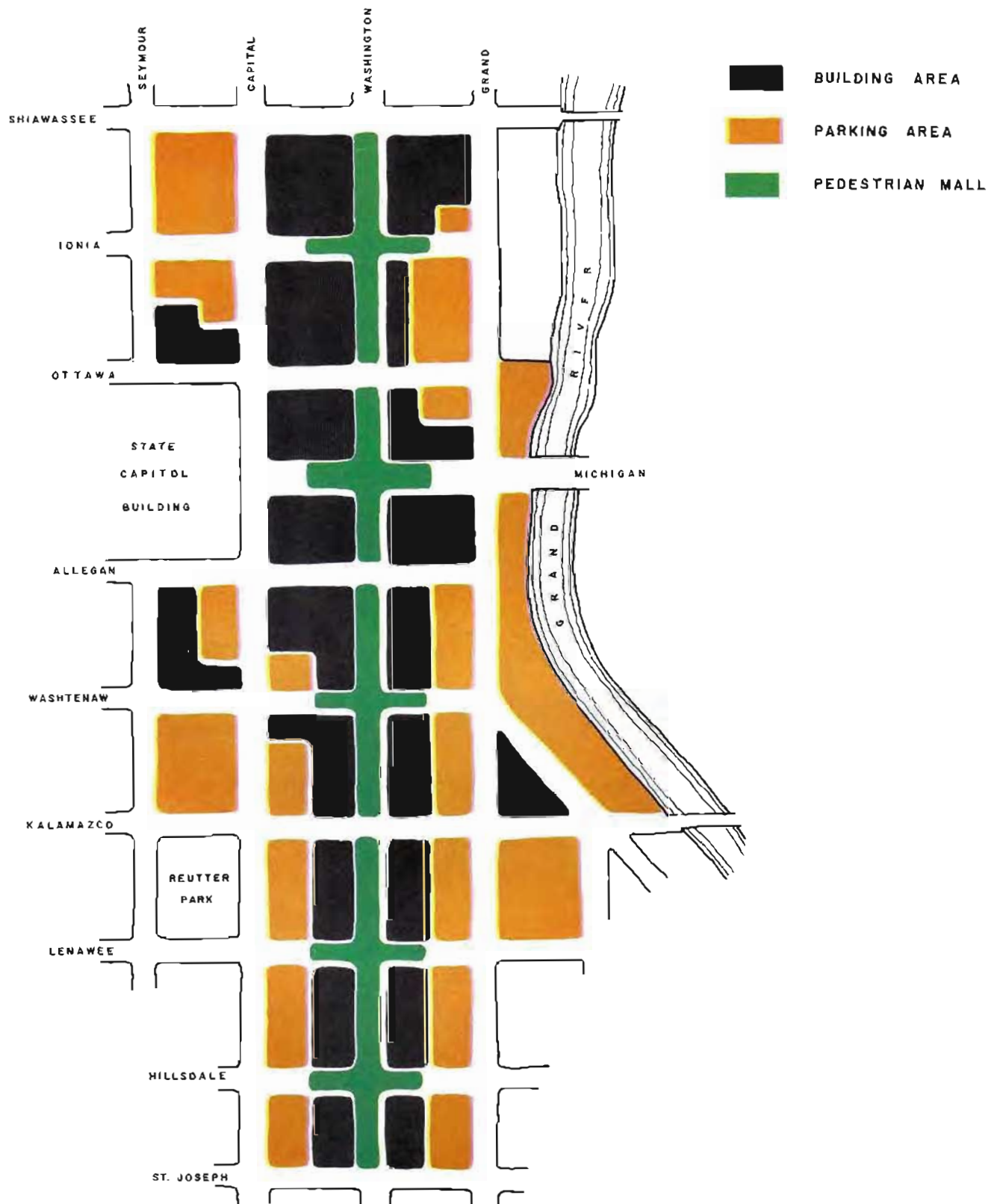
Planning Principles

The following are the basic principles used in planning the location and development of commercial areas:

- (a) Commercial areas where possible should be physically separated from residential areas, but should be convenient to them and accessible from major thoroughfares;
- (b) Adequate facilities should be provided for off-street parking and off-street loading either by private or public interests;
- (c) Pedestrians should be offered a means of circulation with a minimum of vehicular interference;
- (d) Commercial areas should comprise integrated groups of stores rather than string developments along major streets;

CENTRAL BUSINESS DISTRICT

A GENERALIZED FUTURE SCHEME



- (e) Various types of commercial centers, as previously described, should be established so that each may provide goods and services of adequate range, and be compatible with and complementary to one another;
- (f) Commercial areas should be located to serve various neighborhoods and other units in accordance with the standards set forth in Table 29.

Commercial Land Requirements

The aggregate amount of land presently developed for commercial uses serves as a guide in estimating future commercial land requirements. As pointed out in the section on "Land Use", the area used commercially accounts for 3.6 per cent of the total developed area of the city. This amounts to slightly over one-third of an acre for each 100 persons. The foregoing figures and relationships, along with population and economic prospects, are an important guide in estimating probable future commercial land requirements.

The future community, with an anticipated population of 250,000 persons as brought out in the section on "Population", is expected to require between 1,000 and 1,200 acres of commercial land by 1980, this representing an increase of approximately 95 per cent over the presently used 550 acres. This will increase the commercial land - population ratio to slightly above the existing one-third acre of commercial land per 100 persons. The ratio would be much higher if it were not for an expected consolidation and more efficient use of commercial land in the future.

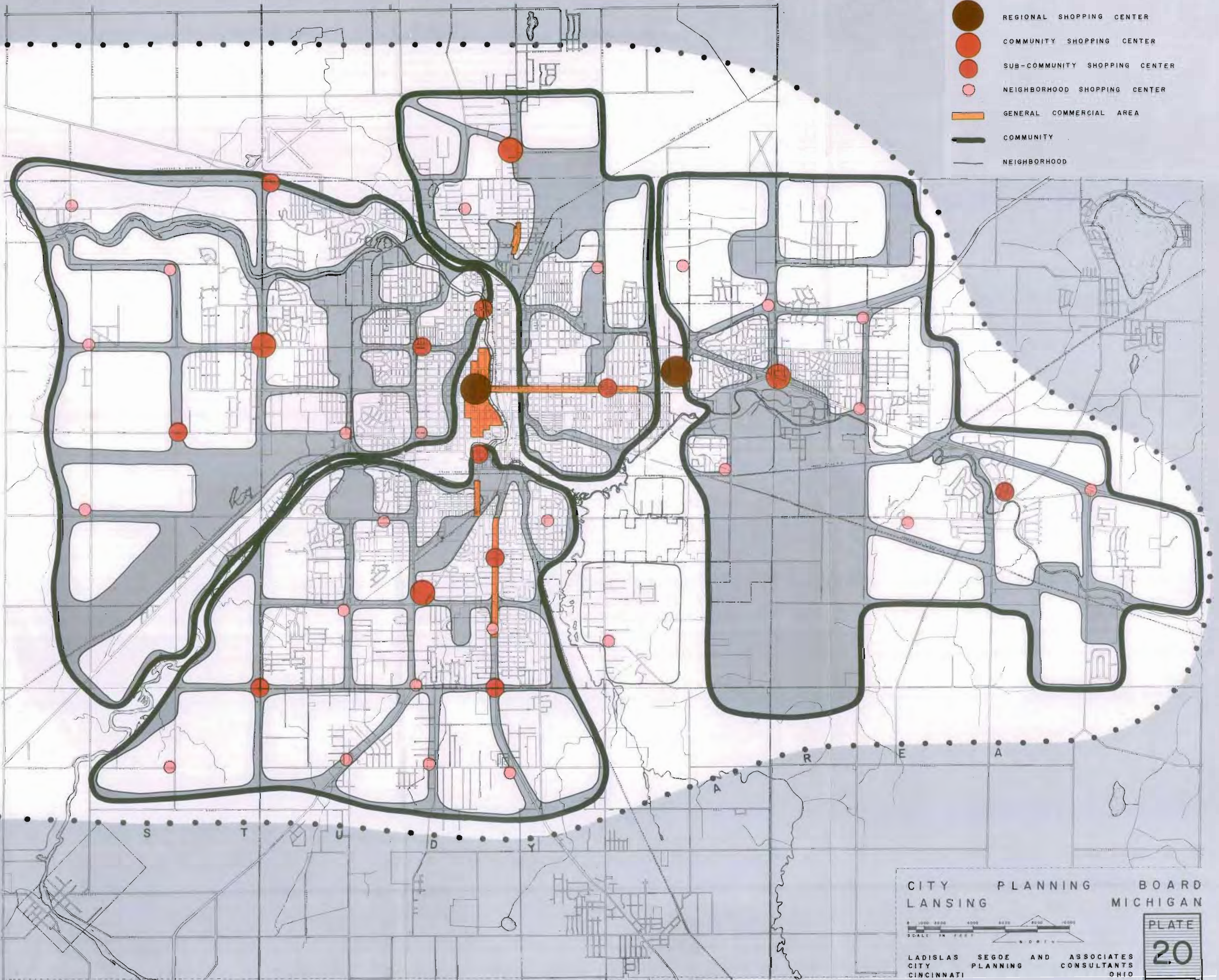
Major Recommendations

The general location of both existing commercial areas, which are expected to remain in the future, and proposed commercial developments are shown on Plate 20, "Commercial Facilities". This plate represents, at the desired standards, the estimated number of future commercial centers in their most logical location. It also anticipates the eventual elimination of poorly located and improperly developed areas. The future community, while developing at approximately one-third to one-half of an acre of commercial land for each 100 persons, is expected to have a lesser proportion of commercial land. This is so because of the anticipated extent of urban development, with larger lot sizes, more extensive industrial development, wider street and highway right-of-ways, and additional park land. Future commercial activities, while requiring proportionately more land than is used today to provide similar service, for reasons given, are not expected to develop proportionately to the extent of other uses. Consequently, the overall percentage of commercial land in the community may be expected to drop from 3.6 per cent to approximately 2.0 per cent.

Commercial centers may and often should be located at greater distances from each other than they have been in the past but limited by the consideration that some facility should be within a reasonable walking distance of every home. Land resources must be conserved and premature commercial exploitation along major thoroughfares should be discouraged. Adequate space for commercial development should be provided in accord with the Master Plan, and a more rational commercial pattern thus should emerge for the Lansing area.

COMMERCIAL FACILITIES

-  REGIONAL SHOPPING CENTER
-  COMMUNITY SHOPPING CENTER
-  SUB-COMMUNITY SHOPPING CENTER
-  NEIGHBORHOOD SHOPPING CENTER
-  GENERAL COMMERCIAL AREA
-  COMMUNITY
-  NEIGHBORHOOD



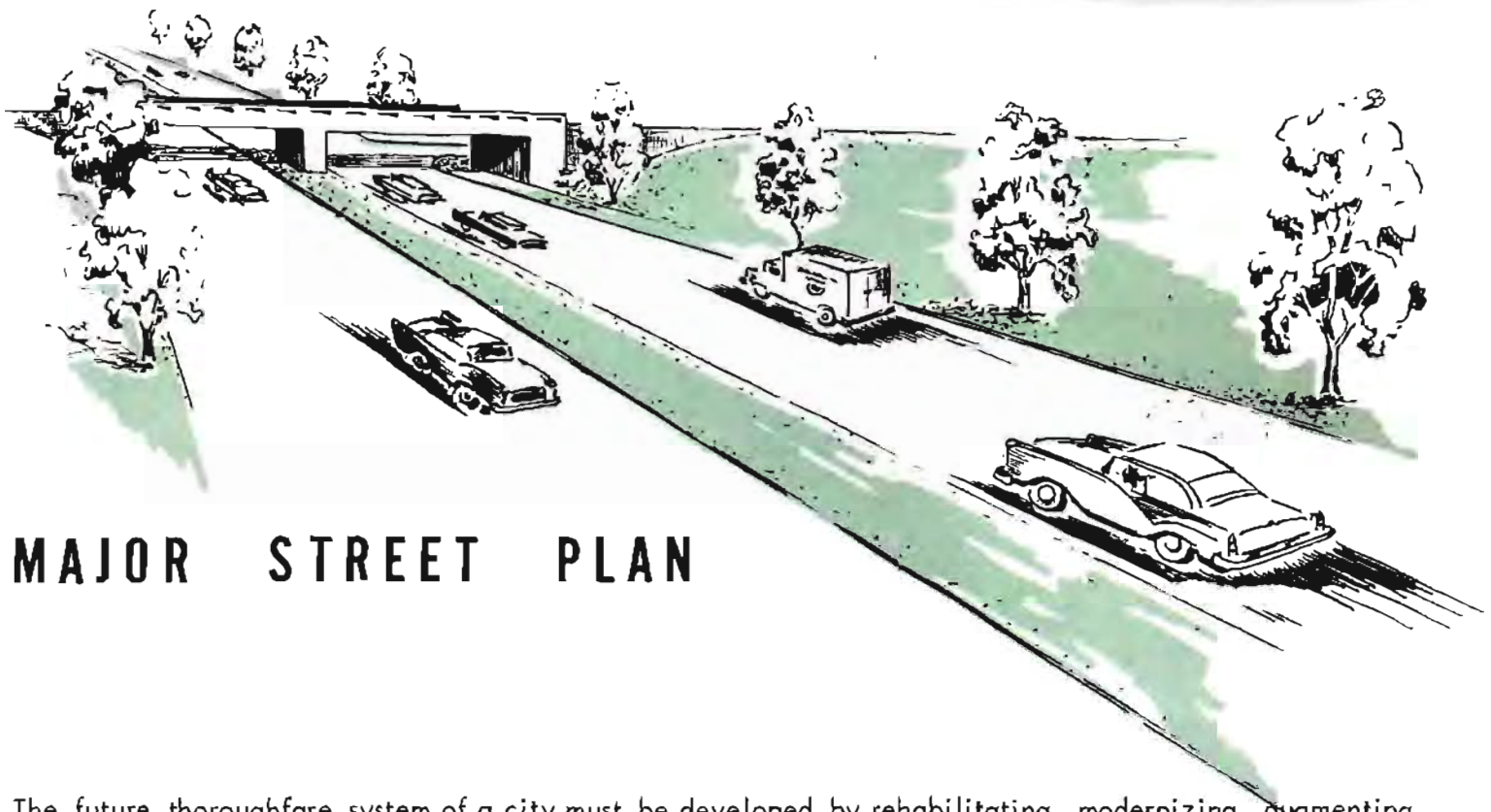
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OHIO

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1958



MAJOR STREET PLAN

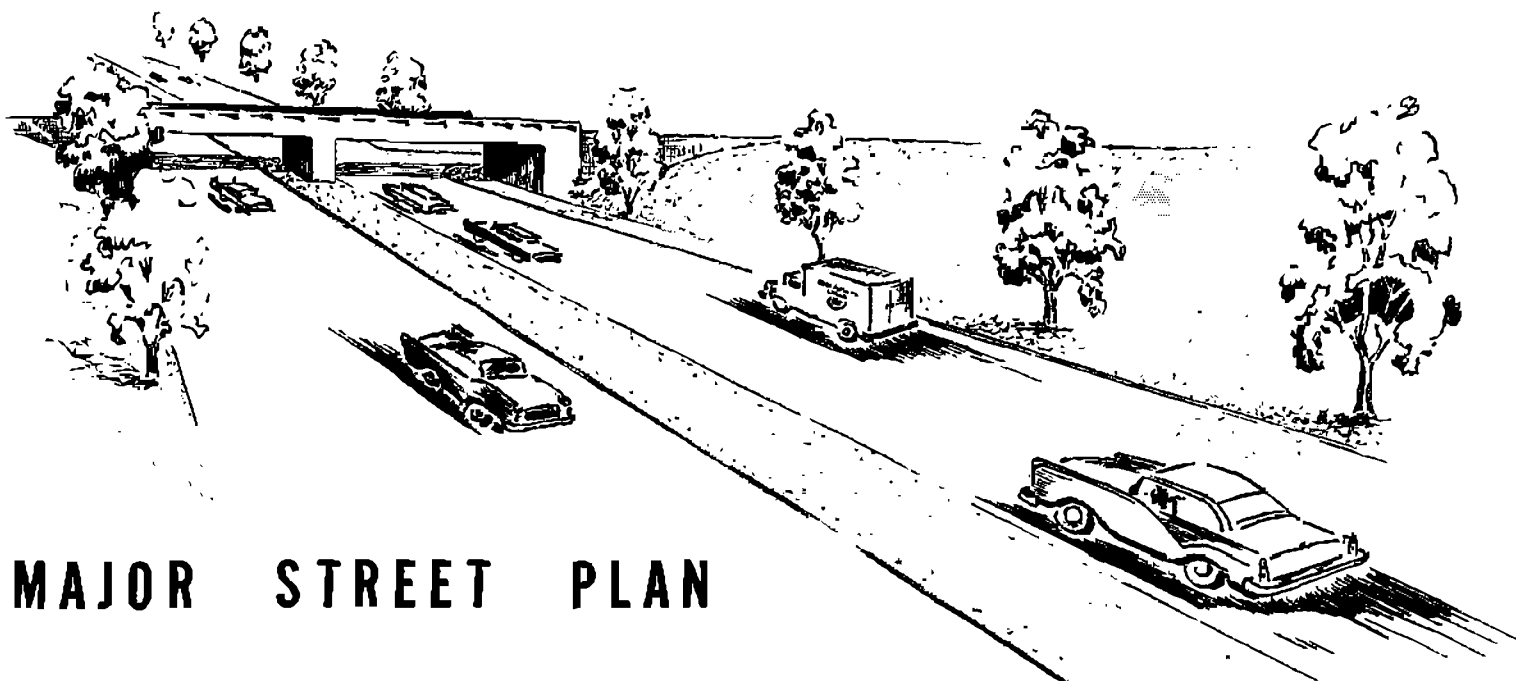
The future thoroughfare system of a city must be developed by rehabilitating, modernizing, augmenting and otherwise improving the existing system of traffic arteries. This involves remedying in the built-up areas present defects and inadequacies, and providing in the as yet undeveloped areas for the orderly, coordinated and adequate extension of the system. Obviously, the planned capacity of thoroughfares should be in scale with both the present and prospective requirements of traffic.

One of the objectives in preparing the Major Street Plan of Lansing was to relieve the Central Business District of as much extraneous traffic as practicable. Provision of adequate thoroughfares to and from major industrial and commercial areas and the portals of the city was another main objective, and a third was to provide routes for through traffic not having destinations in Lansing.

Existing Street Pattern

The basic street pattern of Lansing is of the gridiron type with some curvilinear streets in the more recently developed areas. Most of the streets in the older plats of the city had right-of-way widths of 82.5 feet, then, with the development of land having increased property values, the widths dropped to 66 feet and subsequently to 60 and 50 feet. In some cases there are right-of-ways with a width of only 33 and 40 feet. However, most of the recent subdivisions provide 60-foot right-of-ways on residential streets. In the townships, streets of 66 feet in width have been established along section and quarter-section lines. As land is platted adjacent to existing or anticipated major thoroughfares right-of-ways of up to 120 feet are acquired.

Many of the streets in Lansing have right-of-ways too narrow to meet the standards now considered the minimum for principal traffic arteries. Streets such as West Saginaw, South Washington, Mt. Hope, and Waverly have inadequate right-of-way widths ranging from 60 to 80 feet instead of 100 to 120 feet, or even more, by today's standards. Other streets such as West Michigan, South Pennsylvania, and Holmes Road have reasonably adequate right-of-way widths but need pavement widening to properly accommodate present, much less anticipated future traffic volumes.



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The Central Business District, being a major focus of local traffic, has a critical traffic problem. Due to the lack of circumferential and cross-town thoroughfares connecting outlying sections, traffic between the east and west or north and south often is forced or tends to pass through the Central Business District. In a survey made in August, 1957, it was found that almost 40 per cent of the cars entering the Central Business District have no destination there.

Full information concerning the characteristics of the present street system - its pattern, the right-of-way width of each street and existing traffic volumes where available are on file in the Planning Department Office. This information was obtained from field surveys and records from the offices of the City Engineer and Traffic Engineer.

Traffic Conditions

Traffic Surveys

In 1946, the Michigan State Highway Department conducted a traffic survey of the origin and destination of traffic in the Lansing metropolitan area. The results are contained in the report entitled "The Lansing-East Lansing Metropolitan Traffic Study" which served as an important guide in making the present study. In addition, more recent traffic volume counts have been made and analysed and such counts, along with special tallies and interviews made during March and August, 1957, were used in making determinations for the Major Street Plan.

It was found that some of the local traffic arteries are carrying near capacity loads at many hours during the day. Most of the major arteries are functioning beyond practical capacity during peak periods in the morning and evening, with the heaviest traffic occurring between 7:30 and 8:00 a.m. and between 5:00 and 5:30 p.m. Major arterials leading to and through the Lansing Central Business District, such as Michigan Avenue, Shiawassee Street, Washington Avenue and Kalamazoo Street, have volumes practically equal in both directions, and indication of cross-town movement of traffic through the Central Business District.

Traffic volumes since World War II have been increasing steadily on a majority of the thoroughfares, with yearly increases averaging approximately 7 per cent. On certain streets, annual increases were significantly greater and on others less: East Michigan Avenue, 11 per cent; South Cedar Street, 8 per cent; and Mount Hope Avenue, 4 per cent. East Michigan Avenue is the most heavily traveled street in the city, carrying more than 25,000 vehicles per day. Other streets, such as South Cedar and East Kalamazoo Street, and North Pennsylvania Avenue are important thoroughfares with volumes of approximately 18,000 to 20,000 vehicles per day.

In planning for thoroughfares and highways a continuation of the upward trend in traffic volumes is expected, as indicated in the later remarks on motor vehicle registration. As estimated in the section on Population, the Lansing area by 1980 may be expected to contain approximately 250,000 persons - an increase of about 60 per cent over the present population. Because of the anticipated growth and the possibility that an earlier trend to smaller families may reassert itself, the increase of families may be as high as 70 per cent. With the increase in families and the growing number of families having two cars, automobile ownership may rise from the 1.1 cars per family to an estimated 1.4 cars per family by 1980, causing the number of autos registered to increase approximately 75 per cent. Motor vehicle usage, however, likely will increase much faster than car ownership, due to two-car families, additional leisure hours, less use of transit systems, and greater use of vehicles for business and industry. Considering that traffic levels are based primarily on car usage, an average increase in traffic volumes of approximately 100 per cent is anticipated and planned for in the next 20 to 25 years.

Motor Vehicle Registration

To assist in estimating prospective traffic some years hence, investigations were made of motor vehicle registration trends since 1920 in Ingham County and the State of Michigan. During this period the fluctuations in registrations in the immediate area have been consistent with that of the state as a whole. Registrations, as may be noted in Table 30, showed a large increase in 1925, a leveling off followed by a drop during the depression and war years and then a major increase following the war. The largest post-war increase, 64.7 per cent, was from 1945 to 1950, bringing the 1950 auto registration to over 65,000. The large increase from 1945 to 1950 was due primarily to the availability of new autos and the lifting of driving restrictions following the war. The period 1950 to 1955 saw an increase of 28.6 per cent with almost 84,000 autos registered in 1955.

It is expected that the increase in registrations will continue, but at a gradually decreasing rate. Taking into account trends in population, motor vehicle ratios, and the prospective population in Ingham County in 1980, there is expected to be approximately 147,000 motor vehicles in the county 25 years hence, as projected in Table 30. This represents an increase of approximately 75 per cent over the present registration.

Street Capacities

In order to determine the ability of existing thoroughfares in Lansing to accommodate present and anticipated traffic volumes, an analysis was made of the capacity of various streets under existing conditions. The additional capacity required for each major street to carry the estimated future volumes then was computed, and, in so doing, factors affecting capacity - including right-of-way width, pavement width, street parking conditions, traffic control devices, grade and alignment, and the characteristics of abutting land uses were taken into account.

The most congested traffic conditions, with peak-hour traffic loads that exceed design capacities, are found on certain sections of the following streets: Michigan Avenue, East Grand River Avenue, Logan Street, Saginaw Street, Kalamazoo Street, Cedar Street, and Shiawassee Street. These are only some of the streets where inconvenience, annoyance and unreasonable delay are encountered. The capacity of most thoroughfares could be increased substantially, almost doubled in some instances, by eliminating parking either at peak hours or all day, and by making other operational adjustments. Corrections alone will not solve all future traffic problems and it will be necessary to augment the present thoroughfare system by developing new thoroughfares, widening, and by other physical improvements.

In setting up the Major Street Plan, different types of routes were selected and classified as follows:

Freeways. The freeway is a high-capacity facility designed for safe, fast and uninterrupted vehicular traffic flow-developed with dual roadways with completely controlled access, grade separations at cross-streets, grade separated interchanges at major streets, and no abutting land uses serviced from the right-of-way. Its primary function is to carry traffic quickly and conveniently between major centers.

Primory Thoroughfares. The primary thoroughfare is a major traffic facility which, by virtue of its location, continuity and width, is capable of handling heavy volumes of traffic. Certain primary thoroughfares may serve as feeders and collectors for expressways and connect various sections of the city and neighborhood communities. It is normally divided with a median strip which, when wide enough, provides a holding "slot" for left-turning vehicles. The "Plan" does not distinguish between divided and undivided thoroughfares since the advisability and method of providing the median strip should be determined independently, with detailed investigation at the time of acquisition of property and development of each facility. The primary thoroughfare may in certain instances, consist of a designated "one way pair".

Secondary Thoroughfares. The secondary thoroughfare is a facility of traffic importance but with less capacity than the primary thoroughfare. It functions generally as a feeder for local traffic to primary thoroughfares and as a connection between adjacent neighborhoods.

Parkways. The parkway serves as a trafficway along linear park strips. It is normally located along natural features of scenic beauty, but may serve major traffic generators. Often at peak hours, when in strategic locations, the parkway operates as a primary or secondary thoroughfare.

The Major Street Plan recommends the developing of a complete network with a balance of the different types of routes, supplemented by streets of the "neighborhood collector" type designed to carry neighborhood traffic to and from primary thoroughfares, secondary thoroughfares, and neighborhood shopping centers, schools or parks.

Recommendations

If business and industry are not to be handicapped by traffic congestion and costly delays and if the future growth and development of the community is not to be retarded, an adequate system of major streets must be developed. The Major Street Plan serves as a guide to accomplishing this in harmony with the community's desirable future development. To provide adequate thoroughfares in the older sections of the city, some streets may need to be widened and interconnected, additional river crossings provided, and operational adjustments made in the movement of traffic. In the undeveloped or partially settled areas around the city, properly spaced thoroughfares of generous width will have to be provided to accommodate future traffic volumes.

The "Major Street Plan," Plate 22, shows the thoroughfare improvements which should be carried out over the next 15 to 20 years. The "Plan" shows, by means of distinctive symbols and figures, the recommended location, right-of-way and pavement widths of each thoroughfare, also the nature of each recommended improvement - whether widening, connection, extension, or new facility. The improvements should be accomplished in gradual steps - some in the very near future, others later as the traffic demand increases and the need becomes more apparent.

Freeways

US-16 By-Pass. Grand River Avenue, present US-16, is part of the State trunkline route between Detroit, Lansing, Grand Rapids, and Muskegon. It has been designated by the Federal Bureau of Public Roads as part of the "National System of Interstate and Defense Highways" provided for in the Federal-Aid Highway Act 1956. Thus, US-16 is part of the gigantic chain that will link together almost all of the nation's cities over 50,000 in population. To meet federal standards, US-16 is to be relocated to new right-of-way, 200 to 300 feet wide. The highway must be designed as a limited-access facility with grade-separated interchanges at specified locations and grade separations restricted to a limited number of crossings. Such a highway will have a significant effect on the service areas of such community facilities as schools, recreational areas and fire and police service, since cross-traffic movements will be limited to the selected crossings. The new expressway will pour large numbers of vehicles onto those streets at which interchanges are built, thus greatly increasing the traffic on these streets. A route for the US-16 By-Pass has been selected where it will best serve the function of providing a by-pass for extraneous highway traffic, and is designated on the "Major Street Plan" to the south and west of Lansing. It is planned, by the Michigan State Highway Department, that interchanges will be provided at the following points: Van Atta Road; Okemos Road; Pinetree Road; South Cedar Street (US-127) and South Pennsylvania Avenue; South Logan Street (M-99); Lansing-Charlotte Road (US-27 and M-78); West St. Joseph Street; West Saginaw Street (M-43); and North Grand River Avenue (present US-16).

US-16 Internal Connection. This is a proposed limited-access route to accommodate vehicles on US-16 with destinations in the central part of the city. As shown on the "Plan," it would run north from the southern by-pass of US-16 to East Main Street extended and then west following the general line of Main Street into the heart of Lansing, then continuing to the west where it again intersects US-16. Such a location is directly adjacent to Lansing's two main traffic generators - the Central Business District and the Oldsmobile plant. This facility is considered to be one of the most important features of the Major Street Plan, and Lansing apparently stands to gain more from its construction than from any other part of the proposed interstate system.

North-South By-Pass. Another important proposal of the Major Street Plan is a North-South By-Pass. As can be seen on the "Plan," this would connect US-127 south of Holt with US-27 north of Lansing. It is proposed to be located on entirely new right-of-way and along a portion of the proposed internal connection of US-16. This route would relieve Cedar and Larch Streets, now being used by considerably by-passable traffic. This facility also would function, along with the US-16 internal connection, to bring traffic from outlying districts into the center of Lansing.

North By-Pass. To complete the expressway picture for Lansing a North By-Pass is needed to provide a route for traffic between Flint and Grand Rapids, and between Flint, Battle Creek and Chicago. This route also would afford direct access to proposed industrial areas in the north and the Capital City Airport. This route plus the North-South Route and the US-16 By-Pass would form a circumferential system of expressways around the greater part of the future urbanized area, operating to serve by-pass traffic, and to connect major points of origin and destination of local traffic.

North-South Primary Thoroughfares

The continuity of numerous north-south thoroughfares is disrupted by rivers or other features and their capacity is limited by narrow right-of-ways and narrow pavements. To improve present conditions the following major proposals are made.

1. Waverly Road should be widened and extended north of present US-16 to the Airport and to the proposed extension of Sheridan Road.
2. An industrial highway should be built to service the industrial concentrations adjacent to the belt-line railroad. This should be a partially controlled access route with grade separations and interchanges where feasible. In providing another badly needed north-south route on the west side of Lansing, this highway would connect with the proposed Logan Street extension at the crossing of Grand River, and with the US-16 Internal Connection at the south.
3. Logan Street requires widening and should be extended across the Grand River to connect with West Grand River Avenue (present US-16). This extension, including a new bridge, would aid materially in correcting traffic problems in the vicinity of the Grand River Avenue bridge, and help establish the proposed industrial route previously mentioned.
4. The one-way pair of Grand and Capitol Avenues need improvements to increase their capacities. This may be accomplished by pavement widenings, removal of parking, and the extension of Grand Avenue north as indicated on the "Plan." It is recommended that Capitol Avenue be extended south over the Grand River, on a new bridge, to connect with South Washington Avenue.
5. The one-way pair of Cedar and Larch Streets should be further improved, as is presently being done, with a grade separation at the C. & O. tracks at the north and direct connection with Pennsylvania Avenue at the south. Proposed connections between South Cedar and South Pennsylvania would serve to take through traffic off both South Cedar Street and North Pennsylvania Avenue.

6. Another bridge over the Grand River in the Southwest section is badly needed. The logical location for the facility would be at Pleasant Grove Road to provide an extension north across the river to connect with Clare Street. This facility would be located midway between Waverly Road and Logan Street and would assist in solving the traffic problems of both Waverly and Logan.
7. If economically and physically possible, Aurelius Road should be extended north to connect with Wood Street, via either Marshall Avenue and Shepard Street or Fairview Avenue and Clemens Avenue.

East-West Primary Thoroughfares

To complete the primary system of thoroughfares and supplement the expressway system, numerous improvements, including widenings, extensions and new routes are required for the primary east-west streets. The following are the major proposals:

1. Jolly Road should be widened along its existing route and then, as the demand justifies, be extended east from Aurelius Road to Cavanaugh Road.
2. Holmes Road is expected to experience a substantial increase in traffic when adjacent areas are developed and a community-type shopping center is built at the intersection of South Logan Street. This route is expected to function as a major connection between Waverly Road and the North-South By-Pass. To accomplish its function, Holmes Road will need to be extended east to intersect the proposed expressway and will have to be widened along portions of the route. It is also recommended that this route be extended east from the By-Pass to Okemos Road.
3. Mount Hope Avenue will need to be widened to provide adequately for anticipated future traffic volumes.
4. East Michigan Avenue is expected to continue to be one of the most heavily traveled routes in the city. Improvements need to be made with respect to operational arrangements for the movement of traffic.
5. West Saginaw Street is expected to show a substantial increase in traffic due to the development of new residential areas adjacent to the street, increased traffic from the outlying sections around Grand Ledge and the development of shopping centers and industry along the route. The street will require widening to accommodate anticipated future traffic volumes. Its present capacity is limited in certain locations by parking and left-turning movements, as well as the narrow pavement. With the correction of these conditions, West Saginaw Street should have sufficient capacity to provide for existing and future traffic. Traffic flow on West Saginaw would be re-evaluated after improvements to North Logan, West Michigan, West Willow, and the completion of the inter-state urban connection.
6. East Saginaw Street is expected to have less of an increase in traffic than West Saginaw Street. This can be attributed to the provision of additional East-West routes (such as the internal connection of US-16), the increased capacity of the existing streets, and the reaching of a saturation point in the development of adjacent properties. Traffic forecasts indicate, however, that additional capacity will be required on East Saginaw Street in the near future. It appears that the best method of adding the required additional capacity is by increasing the traffic movement potential of the existing street through pavement widening and operational changes. An alternate method of adding capacity, for which a preference has been indicated by the City and State Highway Department, allows for the use of Sheridan Street along with Saginaw Street as a pair of one-way streets. This will necessitate the extension of Sheridan Street west over the Grand River, to intersect with Capitol Avenue and Grand Avenue for access to the Central Business District. It should be pointed out that one-way

operation should be established only if other means of providing additional capacity appear unsatisfactory, since the introduction of heavy traffic on a parallel street can have a detrimental effect upon the neighborhood through which it passes. Plans are now being made by the Highway Department for putting the Saginaw-Sheridan program into effect. With this in mind, the Saginaw-Sheridan proposal is placed on the Major Street Plan.

7. Sheridan Road, on the Ingham-Clinton County line, is the only facility in the northern section of the urbanized area that can provide a continuous east-west route through that area. This would link together Grand River Avenue and the Airport at the west with US-127 and the proposed industrial area in the east. Sheridan Road will need to be extended on new right-of-way and widened along its existing route.

Central Business District

There is an excessive amount of extraneous traffic movement through the Central Business District. This produces unnecessary congestion in the central area and an attempt should be made to provide alternate routes. The traffic problems found in this section of the city cannot be solved alone by rerouting excess traffic around the area, but must be a combination of several improvements. Off-street parking, restrictions on loading and unloading, prohibition of turning movements, and signalling systems geared to special needs are some of the improvements called for. A special study of the Central Business District is being made and among its recommendations will be those directed toward solving the traffic problem.

General Recommendations

Other proposals, adjustments, and modifications to the existing system of thoroughfares may be seen on Plate 22, "Major Street Plan." Standards for right-of-way and pavement widths are discussed later under "Recommended Street Cross-Sections."

In designing the proposed thoroughfare system, every effort has been made to obviate the need of widening streets, especially along built-up sections. Where this is unavoidable the proposed width has been kept to a minimum. In sections where widenings would be costly, particularly along business streets, it is best to establish building set-back lines in advance of actual widening, in order that new buildings, replacements, and remodelings would be kept back of such lines as the older structures are gradually replaced. Detailed plans and precise plats should be prepared for each route and adopted, thus establishing official locations of new street right-of-ways.

While the majority of the thoroughfare improvements can be carried out gradually as the need arises, certain of these, such as the "industrial highway" and portions of the "by-pass system" should be completed as soon as possible, in order to help relieve critical traffic situations on existing streets. In general, the logical method of carrying out the "Plan" is to set-up a program of priorities for construction based on the order of urgency of each project in respect to traffic relief, its effect on the desirable development of the city, and available or potential finances. A new "traffic origin and destination" study would be useful in setting up these priorities as well as in making general determinations of traffic movements, needs, and projections.

Recommended Street Cross-Sections

Proposed right-of-way widths and recommended pavement widths for each of the different types of thoroughfares are shown in Plate 21, "Recommended Street Cross-Sections."

The appropriate cross-section for a given street is determined by the following criteria and considerations: (1) amount of traffic anticipated, which establishes the number of traffic lanes required; (2) standard

widths for traffic lanes, for moving traffic and for parking; (3) present and desirable future use of abutting properties; and (4) provisions for sidewalk space, including strips between sidewalks and curbs to be used as grass plots and for street trees, to accommodate pedestrian traffic and produce a well-balanced street of attractive appearance.

Pavement widths should be multiples of standard traffic lane widths, and in setting up the cross-sections the following were used: (1) expressways - 12 feet; (2) primary thoroughfares - 10 to 12 feet, and parking lanes where necessary - 8 to 10 feet; (3) secondary thoroughfares or parkways - 10 to 12 feet, parking lanes - 8 to 9 feet; (4) residential streets - 9 to 12 feet, parking lanes - 8 feet. In addition to the space needed for pavement, a generous distance between the curb and property line is highly desirable.

A minimum pavement width of 30 feet should be provided for minor residential streets. This allows two moving lanes of traffic and parking on one side. Neighborhood collector streets require a width of 36 feet to take care of the additional traffic; and still wider pavements than this are needed on the more important traffic streets.

Sidewalks in residential sections should be five feet in width. Where it is necessary for a sidewalk to be placed next to the curb, a width of six feet is desirable. Sidewalks in business districts should be at least 10 feet in width. Planting strips between the curb and sidewalk should not be less than four feet to properly allow for street tree planting and boulevard lights.

Median strips should be a minimum of four feet in width and when sufficiently wide they may be indented near intersections to provide an additional lane for left-turning vehicles, thereby freeing other lanes for through traffic. Median strips separate traffic moving in opposite directions, thus decreasing the possibility of accidents, reducing headlight glare, making crossings by pedestrians easier and safer, providing a location for boulevard lights, and when properly landscaped enhancing the attractiveness of the street.

As additional areas are platted and new right-of-ways recorded, the width of these new facilities should be in accord with the recommended standards. New pavements when constructed should be designed as recommended under the same standards. Initial construction on new primary thoroughfares in outlying areas not yet fully developed may consist of two-24-foot roadways separated by a 46-foot median strip. Future pavement widening, if and when necessary, can be accomplished by narrowing the center mall, with less effect on abutting properties, drainage structures, street lights and plantings than if done at the outside of the original roadways.

Summary

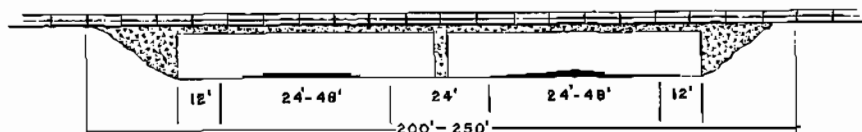
The proposed street system has been designed to offer a solution to Lansing's diverse traffic problems. It has been planned as a coordinated component of the Master Plan. It is planned to enable most motorists to travel quickly and conveniently to the more important destinations and provide reasonably adequate facilities for the remainder.

The Major Street Plan is a long-range guide which must be adjusted to new developments and changing concepts. New industrial areas, major shopping centers, and future travel habits all will affect the "Plan." The design of the motor vehicle or even the mode or type of future transportation will undoubtedly cause changes that will affect the pattern of future traffic.

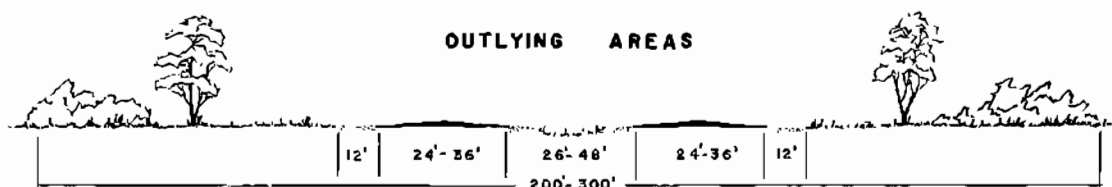
RECOMMENDED STREET CROSS SECTIONS

LIMITED ACCESS THOROUGHFARES

DEVELOPED AREAS

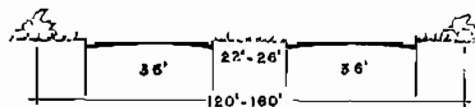


OUTLYING AREAS

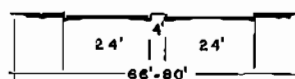


PRIMARY THOROUGHFARES

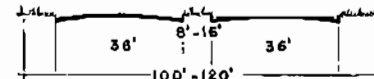
UNDEVELOPED AREAS



RESTRICTED AREAS

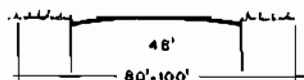


DEVELOPED AREAS

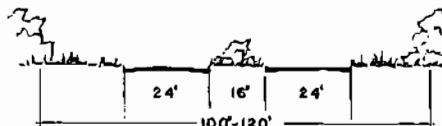


SECONDARY THOROUGHFARES

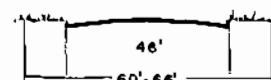
UNDEVELOPED AREAS



PARKWAYS

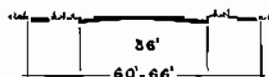


DEVELOPED AREAS

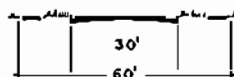


RESIDENTIAL STREETS

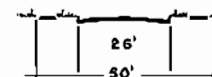
COLLECTOR STREETS



MINOR STREETS



CUL-DE-SACS



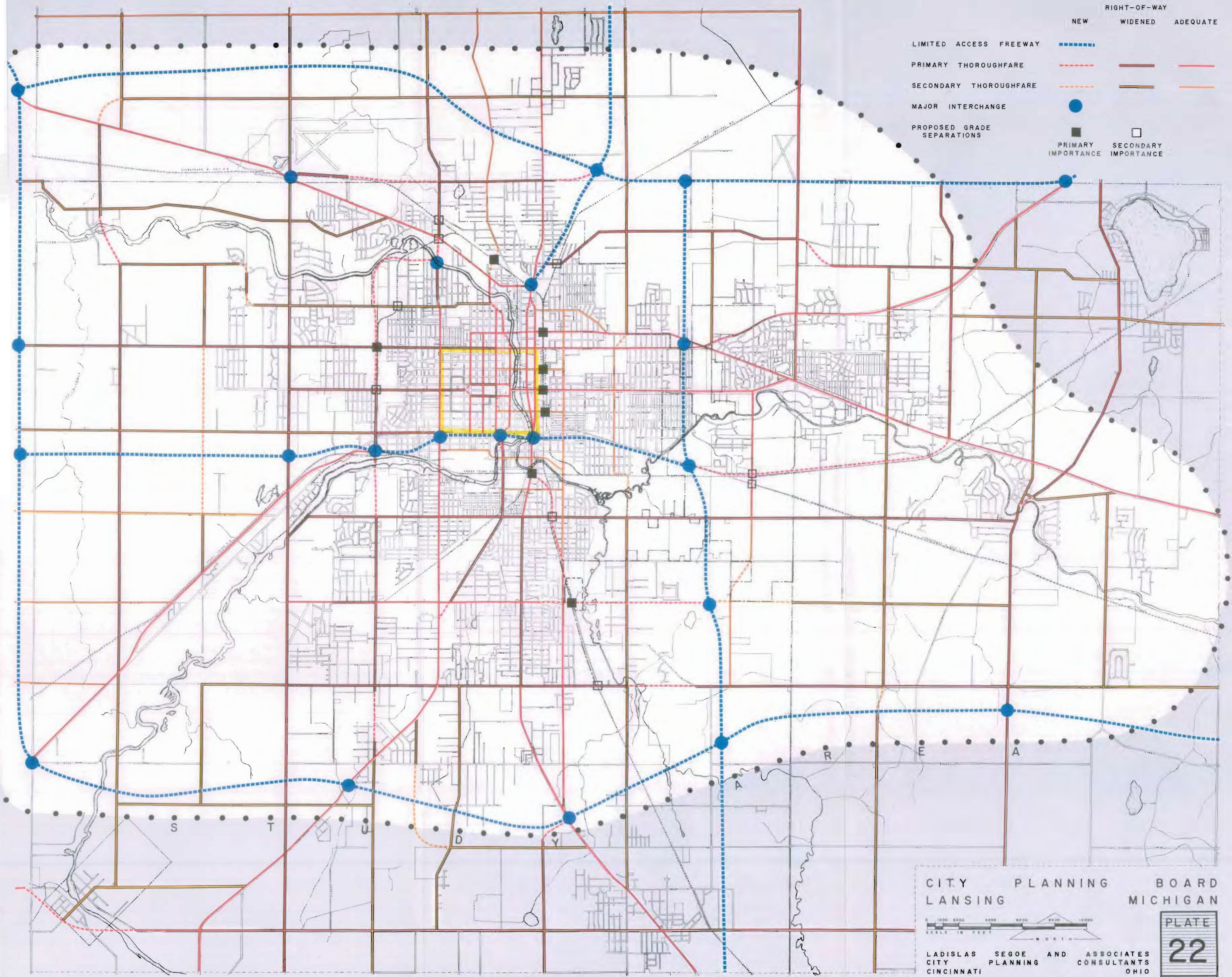
CITY PLANNING BOARD
LANSING MICHIGAN

LADISLAS SEGOE AND ASSOCIATES
CITY PLANNING CONSULTANTS
CINCINNATI OHIO

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21
1958

MAJOR STREET PLAN





PARKING

Parking constitutes a problem in almost every city, and Lansing is not the exception. The difficulty, of course, arises from the concentration of vehicles within a small area of heavy traffic attraction – locations usually associated with industrial and commercial development. It is in the central business district, characteristically the area of most intensive land use, where the parking problem is the most serious.

Central Business District

Most of the city's retail trade establishments, financial institutions, professional offices, and places of entertainment are located in the Central Business District, and a very substantial portion of the city's tax revenue is derived from these properties and enterprises. The value of these downtown properties and the prosperity of these enterprises depend on the ability of the Central Business District to attract people, not only from within the city but from an expanding area outside.

Several of the thoroughfare proposals, advanced under the subject of "Major Street Plan," are intended primarily to afford better access to the Central Business District and minimize traffic congestion in the district. The resultant accessibility and greater freedom of traffic movement will not be fully effective, however, unless additional adequate and properly located parking facilities are provided.

Present Conditions

The parking problem in downtown Lansing has been of increasing concern during recent years, and as a result municipal authorities and property owners have made serious efforts to cope with the situation. Parking meters have been installed on streets of high parking demand to increase vehicle turnover and aid the short-time parker, while parking lots, both public and commercial, have been provided for the longer-term and all-day parker. Several business concerns have established off-street areas for their customers and employees. With continued increases in automobile registration and use, however, and for the Central Business District to more successfully compete with other business districts where a more generous supply of parking spaces has been provided, it is readily apparent that still more spaces must be made available in the Central Business District.

Parking Surveys. In order to appraise the parking situation in downtown Lansing various parking surveys have been made. In 1954, Ramp Buildings Corporation of New York made a study and report entitled

"Parking Survey and Program." Two years later, in 1956, the Lansing Board of Realtors sponsored another study and report by Wilbur Smith and Associates of New Haven, Connecticut, entitled "A Parking Program for Lansing, Michigan." To supplement these two studies the Planning Department, in cooperation with the Traffic Engineer, conducted a cordon traffic count during the week of March 11th, 1957, around the Central Business District and the adjoining Capitol Development Area. These three studies form the basis for the general proposals concerning parking under the Master Plan. In connection with a special study of the Central Business District now underway, it is expected that such general proposals will be held in mind in particularizing features of development and redevelopment in the downtown area.

The cordon traffic count conducted in March, 1957, revealed a total of some 86,000 vehicles entering the survey area during an average 24-hour day. During the survey the streets with the heaviest traffic were East Michigan Avenue, with over 18,000 per day, East Kalamazoo with more than 15,000 and South Washington with some 13,000. Two of the streets with the least traffic were River Street with about 2,200 and West Shiawassee with less than 7,300.

The survey showed also that at 2:00 P.M. the greatest number of parking spaces were in use. Approximately 80 per cent of the off-street spaces were occupied at this time and about 65 to 75 per cent of the curb spaces. Most of the vacant spaces were located on the fringes of the metered district. There were in 1958 approximately 5,200 parking spaces within the Central Business District - an increase within the same area of about seven per cent over 1956 and 25 per cent over 1954. In 1958, about 1,450 were street spaces, or 28 per cent of the total supply, as against approximately 1,500 (31%) in 1956, and 1,250 (30%) in 1954.

The turnover of cars at curb spaces is, of course, much greater than off-street. Curb spaces had a turnover of 6.7 parkers per space per day in 1956 and 8.8 in 1954. The highest turnover occurs at the one-hour meters, with from 8.5 to 9.5 parkers. About two-thirds of the motorists parking in the one-hour metered spaces is about 5.3 parkers per day, with the majority staying less than 30 minutes. It is significant that 63 per cent of all curb parkers remain less than 30 minutes, with 84 to 87 per cent parking less than one hour, and approximately 96 per cent of all the curb parkers remaining less than two hours.

The 1956 and 1954 surveys showed that the off-street parking spaces had a much lower turnover rate, as would be expected. An average of 1.6 parkers in 1956 and 1.4 in 1954 utilized each off-street space during the day. The average durations of parkers utilizing off-street facilities was found to be 3.3 hours, with shoppers averaging 1.9 hours, those with business appointments 2.9 hours, and workers averaging 4.9 hours. These durations compare with those found in other cities of similar size.

Parkers utilizing commercial off-street facilities walk an average of 650 feet to their primary destination, the surveys revealed. About 22 per cent walk less than 200 feet, but about one-third travel in excess of 800 feet.

Both the 1956 and 1954 studies showed a deficiency in total parking spaces; also, both anticipated increased parking demands in the future and predicted that additional off-street parking spaces would be needed.

Studies of parking practices in a large number of cities have demonstrated that the kind of parker (by purpose of trip) is indicated by the length of time parked. Those parking for less than one-half hour generally can be classified as "errand" parkers, making one or two small purchases, paying a bill, making a bank deposit, etc. Those parking for one-half to three hours usually are the "client" parkers, people doing business, shopping, visiting a doctor or dentist, etc. The longer-time or "all-day" parker (3 hours or more) generally works in the business district, although obviously some "client" parkers also are in this group.

Adequate parking spaces in or near the downtown district should be available for all three types of parkers.

If not provided, and where appropriate parking is lacking or not enforced, such parking spaces as are available will not be utilized effectively. The medium and long-time parker will preempt spaces which are needed and should be available for the short-time parker compelling the latter to cruise around (thereby adding to congestion) or to walk a longer distance after finally locating a parking space. An over-supply of short-time parking spaces, on the other hand, invites violations and is an inconvenience to those needing to park for longer periods - creating additional enforcement problems and causing irritation to the motorists.

It is only logical to permit the short-time parkers to use available street spaces (unless such parking interferes with moving traffic), and to provide convenient additional parking spaces off-street (as close as practicable to the center of the business district) for them as well as for the "client" parkers. The third group, the long-term or "all-day" parkers, should have off-street spaces available at the periphery of the downtown district.

Parking Demand and Future Requirements

Increases in traffic volumes may be expected conservatively to range between 45 and 50 per cent in the downtown area during the next 15 to 20 years, and the parking demand may be expected to increase approximately 60 per cent within that period. Actually the demand for parking spaces in the Central Business District might be closer to 70 per cent greater than today's demand should there be adequate and attractive access to the district and sufficient conveniently located parking spaces available at reasonable rates.

The normal week-day peak parking demand at present is about 4,000 spaces, suggesting that requirements by 1980 - based on an increase of approximately 60 per cent - would reach 6,000 to 7,000 spaces. Practical capacity is about 85 per cent of total parking spaces, since 100 per cent of the parking spaces can not be occupied 100 per cent of the time. Thus, at least 7,500 total spaces will be required to provide 6,000 to 7,000 usable parking spaces to accommodate the 1980 parking demand. Concurrent with the rising demand, the number of spaces available on the streets may be expected to decrease, should it prove necessary to eliminate curb parking on such streets as Capitol, Grand, Michigan, and perhaps Washington. The elimination of curb parking would, of course, increase the capacity of the streets for moving traffic and thereby provide for better access and circulation through the Central Business District.

Parking Plan

The first step in the improvement of parking conditions should be directed toward making the most effective use possible of existing street parking spaces. This will involve the gradual tightening of parking time restrictions within the entire downtown area to discourage the use of needed short-time spaces by the longer-term or all-day parker.

In preparing a plan and program of off-street parking, the following considerations and principles should be observed; (1) the location of parking facilities should be so related to commercial and public uses as to be convenient for the people they are intended to serve; (2) the facilities should be so located with respect to proposed traffic streets as to afford ease of access and facilitate the free flow of traffic; (3) they should be so located as to provide an adequate distribution of spaces within and adjacent to the Central Business District, and yet not become obstacles to the logical expansion of the district.

Based on the foregoing, the logical answer to existing and future off-street parking problems is to encourage and develop as much parking as is economically feasible in the east one-half of the blocks between Washington and Grand Avenues, and in the west one-half of the blocks between Washington and Capitol Avenues. Where this is not feasible or fails to satisfy the demand, additional parking facilities will be needed in the Central Business District on the east side of Grand Avenue to the Grand River, and on the west side of Capitol Avenue, these primarily for "all-day" parkers and overflow "client" and "errand"

parkers. Parking areas between Grand Avenue and the River might be functionally and aesthetically combined with a water front park.

While the final objective of the future parking program is to provide a series of strategically located parking ramps or decks, the immediate need is in the acquisition of parking sites encircling the Central Business District. This will provide immediate accessibility to the greatest number of business establishments at the earliest possible time. Later as additional parking needs are created at designated locations, parking structures should be constructed on previously acquired surface parking lots to satisfy this parking desire.

Outlying Parking

There are parking problems in areas other than the Central Business District. General business districts, local shopping areas, isolated stores, and even some planned shopping centers are being affected by parking shortages. New shopping centers are being developed around the periphery of the city with large expanses of parking areas, and it is partly because of these conveniently accessible parking areas that shoppers are being drawn away from business establishments in areas lacking adequate facilities.

Industrial areas, although creating traffic and parking problems, can normally provide for part or all of their parking on their own premises.

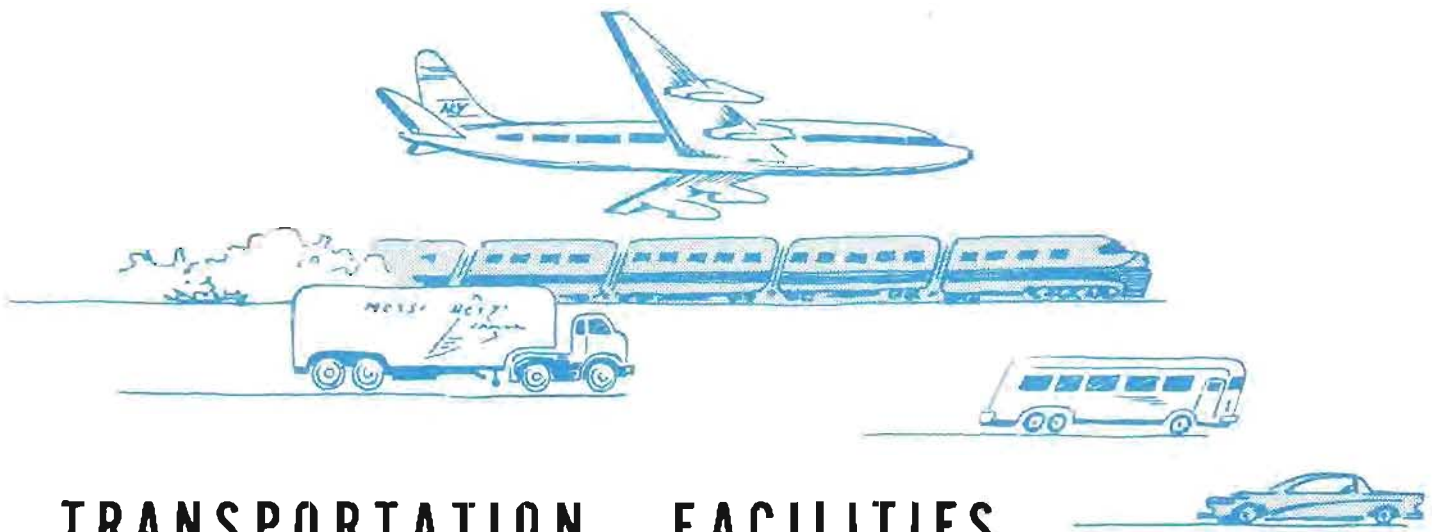
Parking Survey. In 1954, a special study of existing parking facilities outside the Central Business District was made by the Planning Department, at the request of the Municipal Parking Authority Commission. The results of this study are reported in the publication entitled "Parking In Outlying Areas" which is available in the office of the Planning Department. The parking requirements of all outlying areas of the city were studied and those areas with deficiencies singled out from the rest for more detailed study. These selected areas were examined with respect to existing available spaces and usage, and to spaces justified under applicable floor-area-standards.

New Shopping Centers. New shopping centers, if properly guided, can be developed to a standard that will prohibit the occurrence of parking problems similar to those of commercial areas built in past years. Properly designed parking areas with adequate space must be provided for at the time the center is developed. Ratios of parking area to commercial floor area required range from 4:1 depending on the type, size and area served by the shopping center. This means that the minimum parking requirement will be at least one useable parking space for each 300 square feet of commercial floor area.

Summary

Additional parking facilities will be needed in both the Central Business and outlying areas, and these facilities should be properly co-ordinated with existing and future commercial industrial and thoroughfare development. To insure that necessary parking facilities are provided, adequate parking requirements for all land uses, therefore, should be included in the zoning ordinance.

Existing parking facilities, if not already adequately improved, should be required to be hard surfaced, landscaped, properly marked, and lighted. Parking should not be considered a temporary use of the land until sufficient demand warrants construction of new buildings.



TRANSPORTATION FACILITIES

Most of today's travel is done by private auto; however, other transportation facilities play important roles in the development and operation of a city. The location, routes, and operation of local and inter-city bus, rail, and air facilities contribute significantly to the growth, design, and structure of the community. Therefore each must be considered under a planning program.

INTRA-CITY TRANSPORTATION

Increased travel by automobile is making it progressively more difficult and almost prohibitively expensive to provide additional street capacity and parking spaces. Therefore, it would seem only reasonable that every possible measure be taken to make the use of mass transportation facilities more attractive and efficient. Public transit is a mode of travel providing a means of checking the steady increases in local automobile travel, and consequently the number of parking spaces required, since a person traveling by bus occupies only a fraction of the roadway space required when in a private auto, and, upon arrival at his destination, requires no parking space.

Each weekday motor buses transport almost 9,000 persons within Lansing and vicinity. Private cars transporting the same number would require at least 2,700 parking spaces and numerous additional thoroughfare lanes to move them smoothly during peak periods. To provide these additional street and terminal facilities obviously would require the expenditure of large sums of public money.

If it is to be effective in competing with the automobile, and thus contribute significantly to reducing traffic congestion, bus service should be as direct, convenient and otherwise attractive as possible. In earlier days, to promote patronage, extensions of transit lines into new territory were made in the early stages of development; but now, with virtually every family owning an automobile, this is practically impossible, because few if any of the existing lines are earning enough to provide the necessary subsidy. To make such extensions, other lines must be operated in the most efficient and economical manner to be

profitable enough to support these extensions. This can be done only when obstacles to efficient operation are removed or avoided. In other words, this can be done if and when the transit lines are carefully coordinated with the thoroughfare system, population distribution, the locations of major industries and shopping centers, and the various other physical features of the city; also when public authorities lend every reasonable assistance toward promoting profitable operation.

Local Bus System

At the beginning of 1959 Lansing was served by two local bus lines, the "Inter-City Coach Line Company, Inc.," which served Lansing and East Lansing, and the "Lansing Suburban Lines, Inc.," which served the surrounding areas. In April of 1959 the "Lansing Suburban Lines" took over full operation of the bus routes within the city from the "Inter-City Line."

The "Inter-City Line" was one of the successors of the original "Lansing City Railway Company" which provided the first transit service for Lansing. The "Lansing City Railway Company" provided horse-drawn service between 1886 and 1905, and electric railway service from 1905 to 1932, when it contracted for the removal of its rails following the beginning of public transit operation by bus. In 1941, the "Inter-City Line" took over the operation of the transit system.

As pointed out under the report on Major Streets, much of the Lansing street system is inadequate to accommodate present-day traffic. Most of it was laid out during the 19th century and was not designed to serve the needs of today's traffic. Because of the resulting congestion, the average rush-hour speed of buses seldom exceeds eight miles per hour, thus reducing the attractiveness and effectiveness of this mode of travel.

Passengers

The average week-day vehicle-miles driven in 1957, by the "Inter-City Line" was about 2,500 miles, and the overall average of passengers carried per vehicle-mile was approximately 2.8. At present operating costs, it reportedly would be impossible for the system to operate at a profit with less than 2.7 passengers per vehicle mile. Under conditions where customers are less than 2.7 passengers per vehicle-mile an excessive fare would be necessary. In 1943, local buses carried over 13 million passengers, this being the peak year of operation during World War II, when private auto use was restricted. Since 1943, the number of passengers has dropped steadily, until, in 1957, only 2.4 million passengers were carried. Passengers per vehicle-mile have dropped from a peak of 7.7 in 1944 to 2.8 in 1957.

"Inter-City Coach Line" reportedly has been operating generally at a loss since 1947, with respect to net profits after taxes. The only years since 1947 which showed a net profit were those when either a fare increase was initiated, equipment sold, or a reduction made in service. Fares have been raised mainly because of declines in the number of passengers, and this in turn has resulted in still fewer riders; thus, a cycle of less service, higher fares, and fewer riders has been created. Unfortunately this is a situation that is found in most communities.

Figures representing passengers, mileage and revenue are given in Tables 31 and 32.

Routes

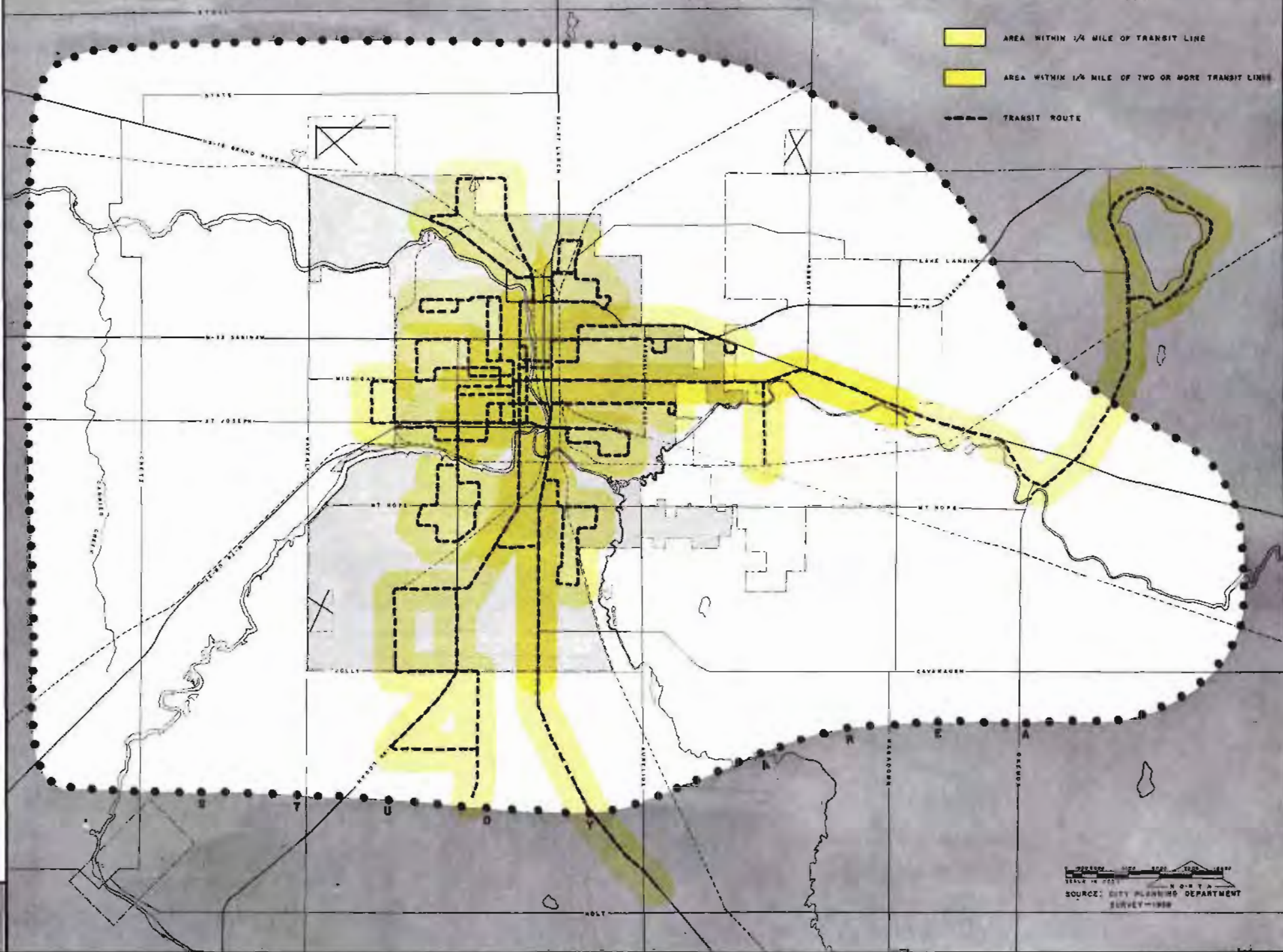
The transit system after the changes in April of 1959 consisted of 13 motor bus routes of the "Lansing City and Suburban Lines, Inc." These routes generally radiate outward from Lansing's Central Business District. Plate 23, "Existing Transit System," shows the routing of these transit lines together with the areas served by each. The service areas are one-quarter of a mile wide on either side of each transit line and represent the areas within about a five-minute walk of the respective lines. Referring to this map, the areas now

EXISTING

TRANSIT

SYSTEM

- AREA WITHIN 1/4 MILE OF TRANSIT LINE
- AREA WITHIN 1/4 MILE OF TWO OR MORE TRANSIT LINES
- TRANSIT ROUTE



0 500 1000 1500
FEET
SOURCE: CITY PLANNING DEPARTMENT
SURVEY-1968

CITY PLANNING BOARD

LAURENCE SEGOE AND ASSOCIATES
CITY PLANNING AND CONSULTANTS

PLATE

being served "adequately" by transit lines may be noted. The unserved territory, in the aggregate, amounts to approximately 26 per cent of the area of Lansing and 75 per cent of the area outside the city.

Wherever there is an overlap of service areas on the map, there is a duplication of service; i.e., anyone within such overlapping areas has a choice of two or more transit lines within the convenient distance of a five-minute walk. While the density of population and the unavoidable convergence of radial lines justify some multiplication of service, especially in the central area, this should be kept to a minimum in the periphery of the community. Unwarranted duplication of service occasions not only increased operating costs to the transit company, but also may lead to long headways (i.e., average time interval between successive buses), and, thus, inconvenience to riders.

On the different lines, the 1957 peak-hour headway varied between 18 and 40 minutes. Normally, any headway over 20 minutes is considered excessive and, hence, unsatisfactory. The efficiency and convenience of the bus system can be determined partially by the average speed at which the buses operate. The Inter-City Coach Line operated over the entire system at an average of between 10 and 11 miles per hour. The most efficient route was one with an average speed of just over 14 miles per hour, while the slowest was only about eight miles per hour. The average rush-hour speed naturally was much lower than the average over the entire day and probably seldom exceeded six to eight miles per hour.

Recommendations

The future of the Lansing Transit System is open to question at the present time. Its multiplicity of problems are the same as those facing almost every transit system in the country. Whether the answer is better operation, or whether it must be concluded that the system cannot, under present and emerging conditions, be self-sustaining, is yet to be determined. Such a situation as exists can only raise the further question as to whether the transit system should receive some form of subsidization or be operated by the municipality as a public service. The important point is that this essential mode of transportation must be maintained.

To compete effectively with the automobile, and thus minimize traffic congestion on the streets, the transit system not only needs to provide service at less cost than by automobile, but should provide faster, more convenient and otherwise attractive service.

The following principles are presented as a general guide in the planning of the future transit system:

- (1) In residential districts, all families desirably should be within one-fourth (or, at most, one-half) mile of a transit line;
- (2) Radial lines should be as short and direct as possible and should be located along major thoroughfares;
- (3) Lines should be routed from one residential area, through the central business district, to another residential area, thus reducing turning movements in the Central Business District, the need for transfers, and providing better accommodations for cross town riders.
- (4) Each line desirably should intersect every other line, so as to make transfers convenient;
- (5) Buses ordinarily should make outgoing and incoming trips over the same streets rather than to traverse a large area by means of a loop;
- (6) Duplication of service should be avoided, except near the central section of the city where it may be warranted by intensive business developments and higher density of population;
- (7) Headways, in general, should not exceed 20 minutes;

- (8) The transit system should be thoroughly coordinated with the Master Plan and especially with the Major Street Plan.

The right "balance" between automobile driving and public transit will be difficult to accomplish. However, it must be achieved if Lansing is to make the most effective use of its present streets and the costly trafficways yet to be built. It is to be hoped that mass transportation may regain someday some of its former stature, as street improvements tend to facilitate bus movements.

INTER-CITY TRANSPORTATION

Improved inter-city transportation facilities, fully integrated with various features of local development, will play an important part in the future growth and prosperity of the Lansing area. Transportation facilities should be designed to operate efficiently and without interference to community development; and local improvements, in turn, should be so planned as to promote such operation. Among other things, terminals and stations for transportation facilities should be so located as to be conveniently accessible from major thoroughfares.

Railroads

Railroad service in Lansing dates from 1863. Three major railroads serve the area - the Chesapeake and Ohio, the Grand Trunk, and the New York Central. All three lines provide both passenger and freight service and it is anticipated that they will continue to serve Lansing, at least in the case of freight service. Passenger service may, in line with trends since World War II see further reductions.

Railroads have played an important role in the growth of Lansing as they have in the development of the nation as a whole. With the growing competition of motor transportation, waterways, pipelines, and more recently, airlines, the railroads have been forced into a period of retrenchment, especially as regards passenger service. Because of this, it seems evident that the future major expansion of railroads will be limited largely to the provision of additional local spurs and sidings as expanded industrialization occurs.

While perhaps desirable, construction of a union passenger terminal is extremely unlikely in view of declining passenger business. Also, with less-than-carload shipments falling off, general freight terminals and team tracks in high value central locations seem likely to be replaced or augmented by terminals in or near outlying classification yards. In general, it may be said, that now centrally located yards may be subject to being moved to undeveloped outlying areas.

Existing Facilities and Service

The three railroad lines have approximately 10.4 miles of trunkline trackage through Lansing and about 18.5 additional miles of spurs and sidings. The location of this trackage and the various terminal facilities may be seen on Plate 26, "Transportation Facilities."

Passenger Service Twelve passenger trains presently are operating daily through Lansing, making direct connections with the following major cities: Detroit, Grand Rapids, Saginaw, Jackson, and Chicago. The number of passenger trains operating through Lansing has been decreasing in recent decades - in 1920, there were 42 trains daily, decreasing to 18 in 1937, to 12 daily at present.

Freight Service While decreasing percentage-wise when compared with the volume of freight business being done by other forms of transportation, railroad freight service may be expected to continue with substantial and increasing volumes. Incidentally, in providing freight service in the Lansing area, switching is done by diesel type engines on a 24-hour basis.

Freight terminals are located at the New York Central - Chesapeake and Ohio tracks at Michigan Avenue; the New York Central - Chesapeake and Ohio tracks at Shiawassee Street; and the Grand Trunk tracks at South Washington Avenue. The primary classification and switching yards are located on the Chesapeake and Ohio right-of-way at Turner Street, the Grand Trunk at Lagan Street, the Grand Trunk at Potter Park, the N.Y.C. Belt Line tracks and West Saginaw Street, and the New York Central at Cavanaugh Road. There are other smaller yards at other locations in the city, many of them poorly located with respect to adjacent land uses.

Recommended Improvements

Trackage and Yards There are no serious conflicts between improvements in general as envisioned under the Master Plan and railroad facilities and operations in the city. Generally speaking, railroad operation in the city is comparatively satisfactory. Both freight and passenger facilities reportedly are of ample capacity to provide adequate service for the present and to accommodate anticipated future business. From the standpoint of the Master Plan, the problem of railroad facilities is confined largely to the elimination or reduction of interference with street traffic and delays at numerous grade crossings.

The only major change recommended in respect to trackage is the relocation of the Chesapeake and Ohio tracks from the intersection with the Grand Trunk tracks at Trowbridge Junction, east of Lansing, to its junction with the New York Central tracks between East Michigan Avenue and East Kalamazoo Street. The proposed relocation, as shown on Plate 26, would be along the right-of-way and tracks of the Grand Trunk Railroad from Trowbridge Junction to the intersection of the New York Central right-of-way and tracks to the present point of joint use. The New York Central and the Chesapeake and Ohio presently operate jointly on the east side for approximately one and one-third miles. This relocation would benefit the City of Lansing and seemingly, the Chesapeake and Ohio Railroad as well. The railroad would benefit from the elimination of four grade crossings and from the maintenance of approximately two and one-third miles of separate trackage, and, presumably, the Grand Trunk would benefit from the economy of the joint operation of tracks. The City also would benefit by the reduction of grade crossings, from the elimination of a railroad through a residential area, and by gaining right-of-way for the location of the internal connection of US-16 along the extension of Main Street.

Another recommended improvement, in general, would be the gradual relocation or augmentation of centrally-located classification and switching yards to undeveloped outlying areas. Additions to railroad facilities in the form of sidings or spur tracks in the various industrial areas recommended under the Master Plan will, of course, be essential as the areas develop.

Railroad Grade Crossings The growing importance of vehicular traffic and conflicts at numerous railroad grade crossings pose a serious problem. At only 10 railroad crossings, representing about 18 per cent of the total crossings in the city, have grade separations been constructed. The remaining 46 crossings in Lansing are at grade, 20 of these being main-line, and 26 spur crossings. A study was made of train movements and street traffic delays at selected crossings to determine relative justification of railroad grade crossing eliminations in the city.

Indications are clear that grade separations would be desirable at: (1) East Michigan Avenue and the joint trackage of the Chesapeake and Ohio - New York Central Railroads; (2) East Shiawassee at the Chesapeake and Ohio - New York Central; (3) East Kalamazoo at the Chesapeake and Ohio - New York Central; (4) North Turner at the Chesapeake and Ohio; (5) South Washington at the Grand Trunk; and (6) West Saginaw at the New York Central Belt Line Railroad.

Additional grade separations may be needed at: (1) Sheridan Street¹ at the Chesapeake and Ohio - New.

¹ Presently proposed to be extended westward to Capitol Avenue.

York Central, and (2) Holmes Road at the New York Central. Other desirable grade separations, if economically feasible, would be desirable at: (1) Jolly Road at the New York Central; (2) Mt. Hope at the New York Central; (3) Grand River Avenue at the New York Central; (4) DeWitt Road and the Chesapeake and Ohio; (5) Harrison Road and the Chesapeake and Ohio - Grand Trunk; (6) Willow Street and the NYC Belt Line Railroad; and (7) North Grand River Avenue and North Logan Street extended at the Manufacturer's Railroad. Grade separations will be provided along the proposed route for the US-16 Internal Connection, if this is to meet federal specifications and receive federal financial assistance. While the foregoing seems to be an extremely ambitious program, it should be understood that it may involve a period of 20 to 25 years or more. The scheduling of the proposed grade separations often should be done simultaneously with major thoroughfare improvements so that they can be included in the same project.

Motor Freight Lines

Trucking, a relative newcomer in the field of freight transportation, has grown to be a major element of the inter-city transportation pattern. There are more than 10 million trucks registered in the United States, and the annual dollar volume of business is in the billions. Trucking, supplementary to air, rail and water transport, has given this country a speedy, versatile means of freight transportation.

Of all the means of freight transportation, motor freight lines perhaps have the most direct impact on the city. Among other things, trucks operate over most of the major thoroughfares and often penetrate residential districts in order to get to their destinations. There are 52 inter-city freight companies operating in and out of Lansing, using 22 major terminals here; about 12 of these lines maintain their home offices in the city. Direct freight services of these companies extend as far as Chicago and St. Louis in the West, Houston and Wichita in the Southwest, and Boston and New York in the East. Overnight delivery service extends to Cincinnati, Louisville, and Chicago. Twelve of the 52 freight companies operate only in the general vicinity of Lansing.

Trucking movements to and from Lansing are, in the main, by way of US-16, US-27, M-78, and M-99. These highway portals of the city are reasonably well located in relation to the various trucking terminals; however, most of these routes within the city presently are inadequate and congested with local traffic. Truck terminals, as shown on Plate 26, "Transportation Facilities," generally are located along one or another of the above-mentioned routes.

Recommended Improvements

As recommended in the "Major Street Plan," improvements are needed along most of the routes being used by trucking lines. Additional capacity must be gained through new thoroughfares, street widenings, etc., which, in addition to expediting the movement of motor vehicles generally, will provide the trucking companies with more adequate facilities for the movement of their trucks and should encourage the location of terminals adjacent to these improved routes. It is recommended that the terminals presently "mislocated" in residential or local business areas be relocated to more appropriate sites.

A wide scattering of terminals would tend to complicate traffic problems. Often local delivery trucks must visit several terminals in various parts of the city to pick up or deliver freight. In addition, considerable volumes of freight often are transferred from one terminal to another. This increases the travel of motor trucks and adds to the traffic congestion and to the operating costs of the trucking companies. It is recommended, therefore, that as many of the various terminals as possible be concentrated into two or three general areas or that a "union" or "joint" truck terminal be constructed.

In the foregoing connection, development of a "union" or "joint" truck terminal was studied. Most of the local trucking companies, due to the highly competitive character of the trucking industry, expressed

preference for their own terminals, with pick-up and delivery service for their own customers. It doesn't appear that there is sufficient support to bring about the construction of a joint terminal through private interests. However, in the event such support may be gained, possible locations for a joint terminal were investigated, and the best location appeared to be in the general vicinity of Larch and Cedar Streets between Michigan Avenue and Saginaw Street. A site in this general area would be in a proposed light industrial zone where direct access would be provided from two major thoroughfares. Moreover, this constitutes a central location, with the possibility of assembling a large useable site, and with access to rail sidings for potential "piggy-back" service in conjunction with the railroads. The suggested location and a possible site plan to illustrate development possibilities are shown on Plate 26, "Transportation Facilities."

The implementation of an improvement plan for trucking facilities must depend primarily upon the industry itself. However, the City can assist in the following ways:

- (1) Make properly located and otherwise suitable land available through the proper zoning for industrial use;
- (2) Protect the industrial areas designated for truck terminals from the encroachment of limiting or detrimental uses;
- (3) Provide a modern thoroughfare system to allow for convenient movement of cargo carriers;
- (4) In blighted areas, assist in the acquisition of land for proposed truck terminals, through the urban renewal provision of the 1959 Housing Act.

Interurban Bus Lines

Lansing is served by Great Lakes Greyhound, Indian Trails and Shortway Bus Lines. Interurban buses provide frequent service and make connections with all major cities in the country, with direct service between Lansing and such cities as Detroit, Flint, Grand Rapids, Toledo, and Chicago. Service is provided to the west coast with only one transfer involved. The present service is deemed adequate and future service is expected to keep pace with anticipated travel demand.

The Greyhound Lines constructed a new Lansing terminal on South Washington Avenue in December, 1950, and this facility is considered adequate not only for the present but to serve future needs for some time to come. This terminal also is used by the other interurban bus lines.

Airlines

Air service has come of age, and a new era of transportation by air has begun with turbo-props and jets in continental operation. The effects of advanced air travel on Lansing and the nation as a whole will be profound, and if Lansing is to benefit from air transportation's rapid improvements it must provide facilities to promote improved service to the community. The Master Plan recognizes existing facilities, with improvements underway and in prospect - and suggests further improvements along with new facilities.

Airline Service

Commercial passenger service for Lansing is provided by Capital Airlines and North Central Airlines. Both air mail and air express are handled by each airline, but air freight by Capital only. There were 18 scheduled daily flights in operation at the beginning of 1959, with direct service to Grand Rapids, Detroit, Green Bay, Marquette, Chicago, Cleveland, Pittsburgh and New York.

Air passenger traffic in and out of Lansing showed a continuous increase from 1948 to 1958, as may be seen in Table 33. In 1956, reflecting a cut-back in schedules, Lansing showed the first (and apparently

a temporary) decline in traffic. From 1948 until 1954, annual increases ran above 20 per cent each year with the exception of 1951. The period from 1954, however, showed a declining rate of growth with only 6.2 per cent increase from 1954 to 1955, and an actual drop-off from 1955 to 1956 of 9.0 per cent. However, from 1956 to 1957 there was an increase again - of 14.3 per cent. Since Lansing has been a city of steadily rising population and generally healthy economic growth it appears that the percentage of increase in air travel should have been greater. That it has not been greater may indicate insufficient service to promote greater business, this in turn, possibly, indicating a deficiency in local facilities for the accommodation of aircraft. Part of this deficiency has been alleviated by the recent construction of a new passenger terminal.

Air Freight, Air Express and Air Mail

It is noted, that air freight as carried by "scheduled passenger aircraft", has had exceptional fluctuations in volume, with no apparent tendency to increase over a period of time. The precise factors underlying such fluctuations are not known, and since air freight is sensitive to the requirements and desires of relatively few shippers and to special conditions, this probably cannot be taken as any reliable index of air transportation trends in Lansing.

Air express, on the contrary, shows a tendency to rise, with considerable year to year fluctuations. The largest drop was from 1955 to 1956, but again the question may be raised as to whether the slump would have been as great if the service had been adequate.

There has been a steady increase in air mail poundage, indicating growing population, business activity and prosperity of the community. This trend apparently is not a reflection of whether or not the service is adequate. Figures showing the pounds of air mail, air express and air freight - along with total landings for each year since 1948 are given in Table 33.

Future Passenger Traffic

Estimates of future volumes of air traffic have been projected for the next 15 years. Because of many variables and the swift and perhaps radical changes possible in air travel, it is unrealistic to make plans for a longer period.

It has been estimated by the Bureau of Business Research, Michigan State University, in the report entitled "Lansing Air Traffic Potential Study," that the 1970 air travel demand to and from Lansing will be approximately 126,000 passengers per year or 77 per cent greater than the 71,169 passengers in 1958. Estimates based on projections of national trends from a study by Edward P. Curtiss, special assistant to the President for aviation facilities, indicates that by 1970 Lansing could expect as many as 225,000 passengers per year. This would be an increase of more than 200 per cent over 1958. These figures can be substantiated by considering that the population in the five-county area served by the Lansing airport is expected to increase by 45 per cent to about 500,000 by 1970. It is anticipated that future generations will use air transportation facilities at an increasing rate. While passenger movements will increase substantially, aircraft movements will not increase as much since transports flying in the future will have greater passenger-carrying capacity than those flying today.

Existing Facilities

A detailed study of Capital City Airport facilities, trends and future requirements was made by Bureau of Business Research at Michigan State University in 1957, as reported in the publication previously referred to. Certain of the findings and conclusions of this study have been reported above and are contained in the following.

The Capital City Airport - classed as an "express" type airport by the Federal Aviation Agency - is located four and one-half miles from downtown Lansing and the State Capitol, and is easily accessible from all parts of the metropolitan area. It is owned and operated by the State of Michigan and is under the jurisdiction of the Department of Aeronautics. The Airport comprises an area of approximately 820 acres and is the base for some 125 aircraft. There are three runways - E-W, NE-SW, and NW-SE, ranging in length from about 2,400 feet to 5,000 feet, the latter being the E-W instrument runway. As further redevelopment occurs, the present NW-SE runway will be abandoned, relocated and extended to 5,000 feet. The E-W instrument runway has expansion possibilities beyond 7,000 feet, whereas the NE-SW runway is expandable to at least 5,000 feet. All runways have clear approaches along glide angles of 40:1 or 50:1 as required by the F.A.A.

In 1947 the Michigan Department of Aeronautics inaugurated a 15-year development program for the Capital City Airport. Included in the program were a new terminal building, runway improvements, grounds development, park and recreational areas, a commercial and industrial area, and other miscellaneous improvements. Part of the grounds and runway improvements have been completed and a new terminal building was opened during 1959. In the future approximately 130 acres will be available for terminal facilities.

A non-aviation commercial and industrial area was proposed in an Airport development program for the east wing of the overall building area. It was suggested that this area be made available for the development of certain industrial enterprises, such as the manufacture of light-weight products; and for shippers of perishable produce who would utilize air transportation. An air and ground cargo warehouse area has been reserved adjacent to and paralleling the Chesapeake and Ohio Railroad, and in close proximity to Grand River Avenue. This is a convenient location for the interchange of cargo between rail, highway and air and thus should be developed as indicated. The proposed general development plan for the airport facilities may be seen on Plate 24.

Private Airfields

There are two privately-owned, light plane airports in the Lansing area. These, of course, do not have scheduled commercial flights, but offer many advantages to student, private and business pilots, such as less congestion and freedom from interference with large commercial planes. It has been estimated that general aviation activity will have approximately a 400 per cent increase by 1975.¹ Local private airfields will play a primary part in this increase.

Davis Airport, north of East Lansing, is easily accessible and in the process of being improved. It shows indications of becoming an increasingly popular facility. However, it should be pointed out that with increased activity, conflicts may occur with planes from Capital City Airport.

Aero Manor, located southwest of Lansing, is in an area of residential expansion. This airport has very limited facilities and patronage, and it is quite probable that the land now occupied will become valuable for residential purposes, making it uneconomical for the airport to remain in its present location. A replacement for Aero Manor seems to be indicated with the increasing population of the area and the general public interest in aviation. A logical replacement location would seem to be in the rural district adjacent to the future urbanized area, with direct access from the airfield by primary thoroughfares to the urban concentration. This new facility should be located so as not to be in conflict with the air traffic patterns of other airfields.

¹ National Requirements for Aviation Facilities; 1956-75, Volume IV Forecast of Aviation Activity June 1957, U.S. Superintendent of Documents, Washington 25, D.C.

Approach Protection

It probably would be impossible to acquire all the land needed for safe approach zones to Capital City Airport. However, structures or trees inside approach zones can be condemned and removed under the power of eminent domain; easements to control hazards can be acquired with or without condemnation.

Capital City Airport has a zoning ordinance which controls the height of buildings surrounding the airport for the purposes of: (1) preventing the creation of physical hazards in the airspace approaches of the airport; and (2) protecting the lives and property of the flying public and residents in the vicinity of the airport. The ordinance governs the development of land within a three-mile radius and within the approach area of the runways for a distance of approximately 10 miles. The Federal Aviation Agency recommends that residential densities within approach areas be kept to a minimum and that schools and places of public assembly not be located there. This policy has been observed and is reflected in the Master Plan.

Heliports

There are definite indications on the transportation scene that helicopters are to become increasingly important in the short-distance passenger and mail market. By 1975, it has been estimated, helicopter flights will probably represent about five per cent of the total air movements. Helicopters can operate quite efficiently from 25 to 300 miles, with the range of 50 to 150 miles being the most economical, the latter being a range that would place the cities of Detroit, Ann Arbor, Jackson, Grand Rapids, Flint and Saginaw within the most economical distance. A helicopter traveling at 100 m.p.h. can arrive at a destination 75 miles away 38 per cent faster than a regular fixed-wing plane. This is mainly because of the usual central location of heliports - eliminating much ground travel time to and from airports - and the shorter take-off and landing time of helicopters.

Lansing seemingly is ready for inter-city helicopter service. Factors indicate that a properly-located heliport and regularly operated helicopter service would be economically sound, assuming other cities within appropriate range would combine in the service. In addition to travel between communities in the state, service between different parts of the Lansing community - such as Michigan State University, the Capitol Development Area, the Central Business District, major industrial areas, and the Capital City Airport might be found advantageous.

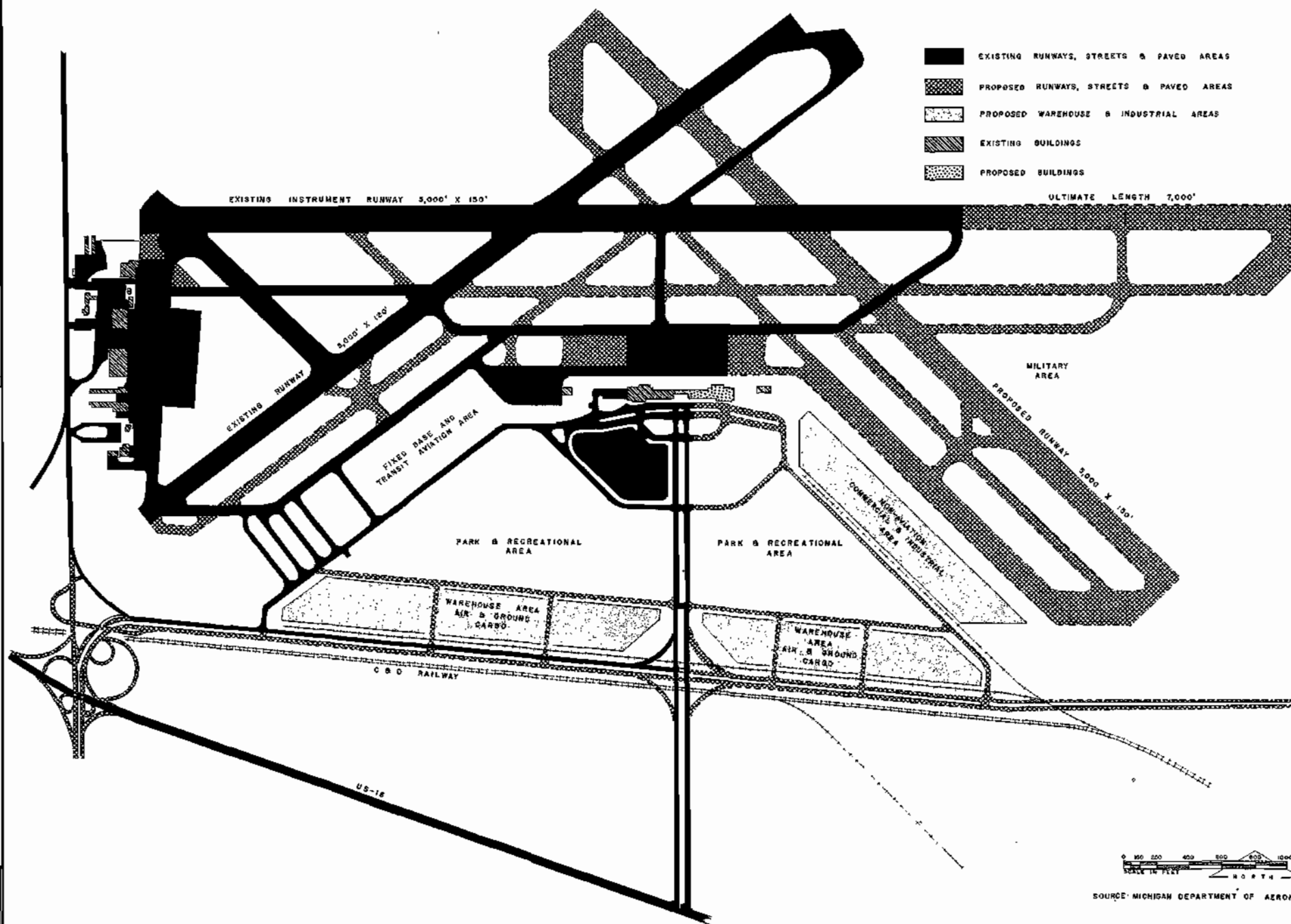
Possible Heliport Site

The following factors were considered in determining a suitable location for a Lansing Heliport:

- (1) Proximity to the Central Business District;
- (2) Accessibility to ground transportation;
- (3) Site of sufficient size to contain the operating area, loading and storage aprons, terminal building and auto parking;
- (4) Approach zones with respect to instrument flying, obstructions and the effect on surrounding property;
- (5) Cost of site development.

It is reported that passenger helicopters may be expected to develop in size until they reach about 50,000 pounds - most of these being two-roter ships. The area for parking one of these ships, if towed into position

CAPITAL CITY AIRPORT • GENERAL DEVELOPMENT PLAN



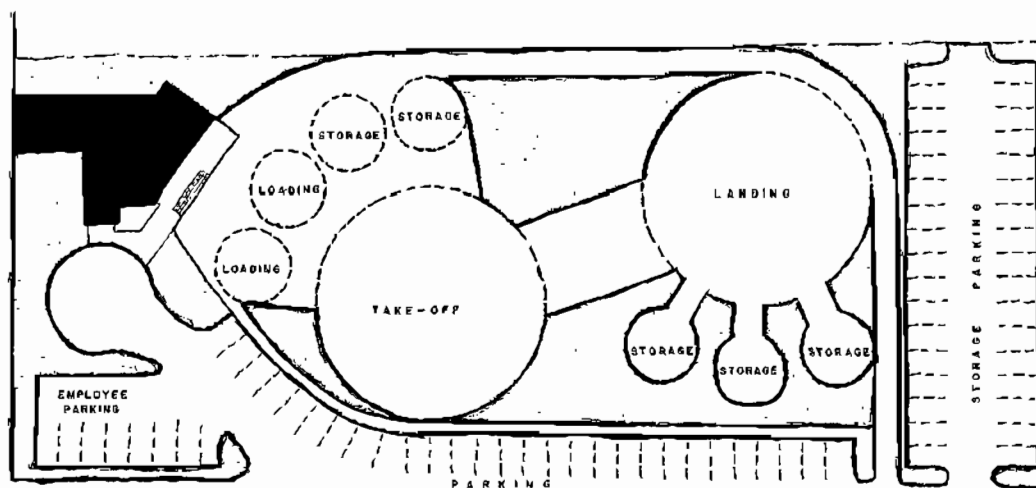
would be 85 by 135 feet. The number of automobile parking spaces to be provided would depend on the degree of acceptance of the service, overall size of the heliport, and the average length of time on the site.

A "typical" layout of a heliport is shown on Plate 25. Topography and existing structures would occasion modifications of this typical plan. A heliport needs only a short landing strip, and approaches from two directions at most. The approach slope ratio need not be as severe as at conventional airports, but the F.A.A. recommends that approach zones should have an obstruction clearance of at least 8:1 with an emergency landing area near the approach pattern. Transition areas from the actual landing area to the approach zone should have a 2:1 clearance. It is good policy to have approaches over low terrain such as rivers, railroads, parks, and highways, with the approach areas controlled by zoning if there is any possibility that obstructions might be built.

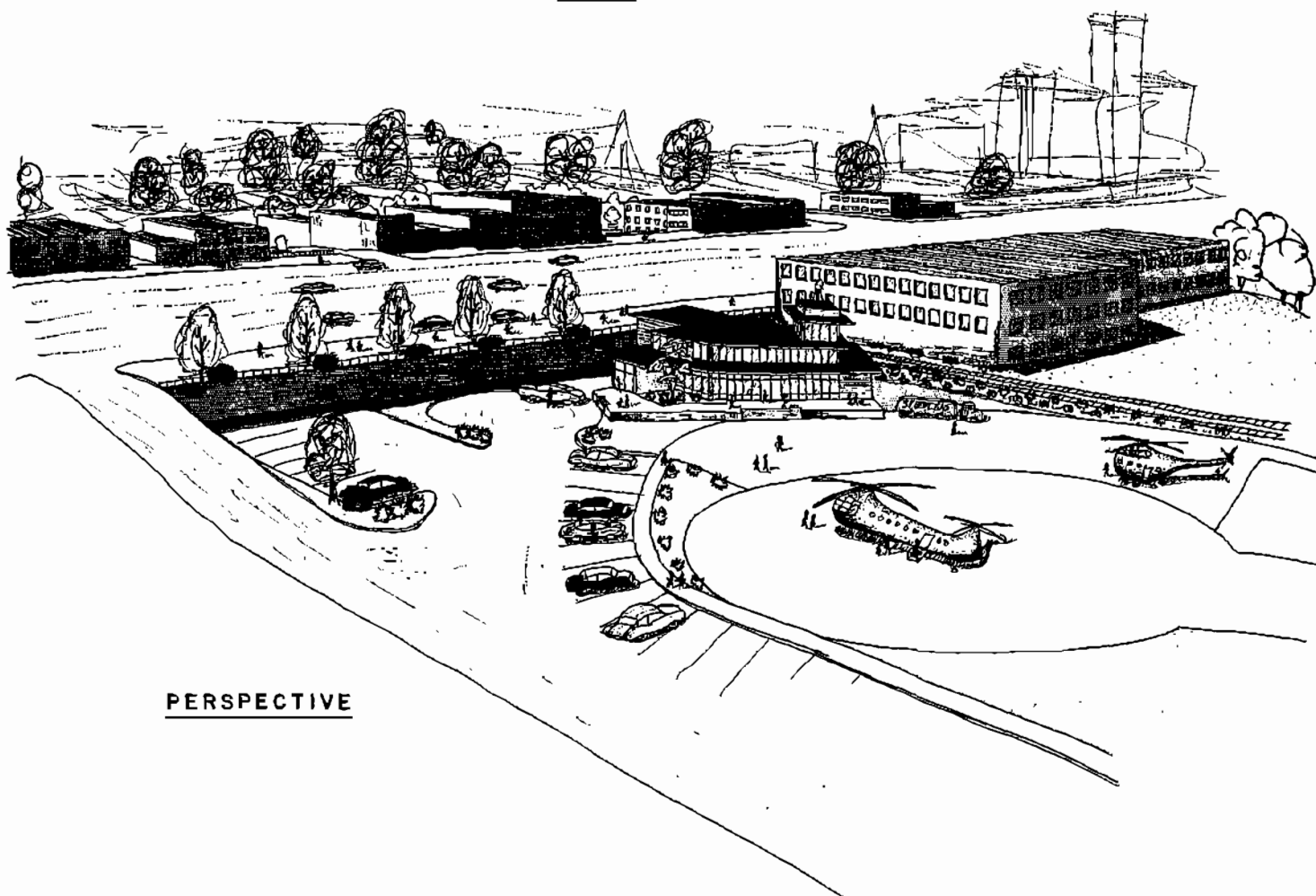
With the foregoing considerations in mind, a logical site is shown on Plate 25, along with a diagrammatic site development plan. This site can use the Grand River and railroad property, which have no obstructions, as part of its approach zone; it is readily accessible from Michigan Avenue, convenient to the Central Business District and the Capitol Development Area, and is within a proposed industrial area.

The importance of providing helicopter service for Lansing can not be over-emphasized. It would do much to supplement the local and inter-city transportation system. In addition to being a needed convenience, it would also assist in developing the full economic potential of Lansing and environs.

SUGGESTED HELIPORT



PLAN



PERSPECTIVE

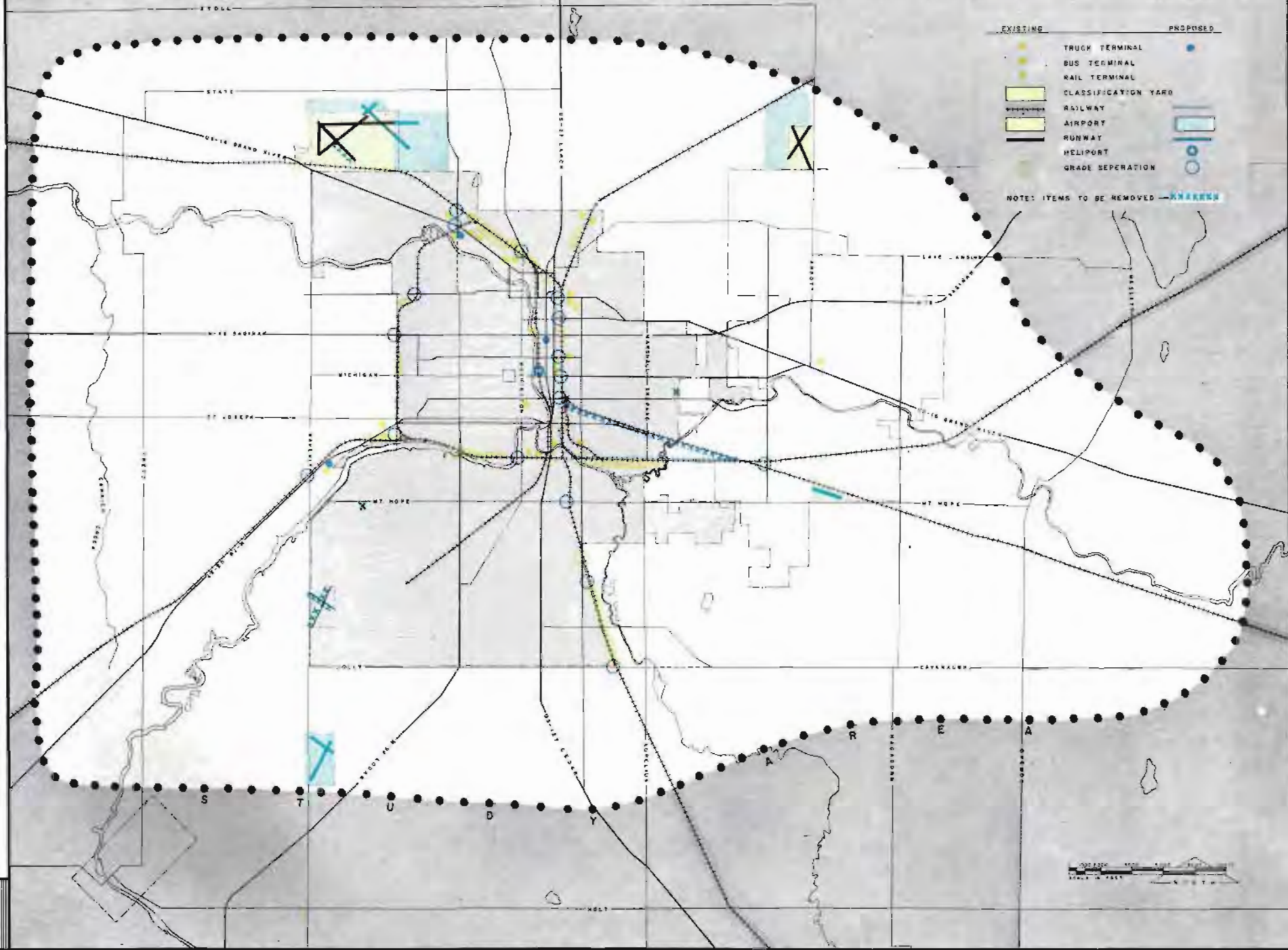
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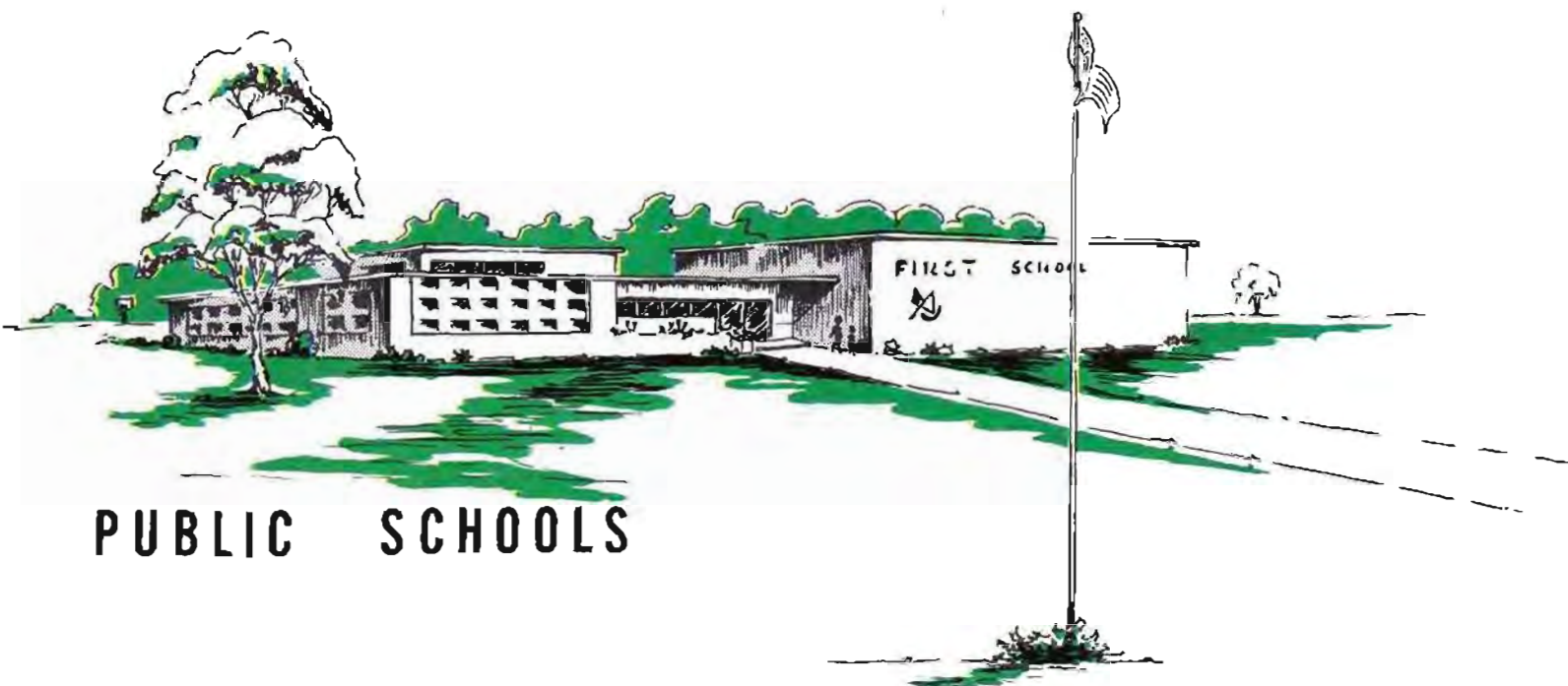
COMPREHENSIVE MASTER PLAN · LANSING · MICHIGAN AND ENVIRONS

25
1958

TRANSPORTATION FACILITIES



EXISTING	PROPOSED
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PUBLIC SCHOOLS

The public school system is one of Lansing's most important assets. The schools are used, or should be used not only for the teaching of children, but as social, cultural and recreation centers for all the people in their respective neighborhoods. As a measure of its importance, it may be noted that the public school system represents in many cities, as it does in Lansing, about one-half of the total capital investment in public facilities and a similar proportion of the annual operating expenses for all municipal purposes.

The Master Plan, with respect to schools, is concerned primarily with the appropriate location and size of school sites and buildings. The Board of Education is, of course, best qualified to make determinations as far as educational and administrative requirements are concerned; however, in the selection of new sites and the provision of building facilities it may often be difficult, in view of limited information regarding physical growth and desirable future community development, for the Board to make completely defensible decisions. The Master Plan makes available information regarding future land use, population prospects and other data on which to base decisions regarding not only schools but other public facilities as well.

School Standards

In evaluating the present schools and arriving at the conclusions and recommendations set forth in this report, certain widely-accepted standards - appropriately modified in the light of local conditions - were observed with respect to location, site size, building size, etc. A summary of such standards appears in Table 34.

For efficient operation it has been found that elementary schools should range in pupil capacity from about 400 to 600 students. Junior high schools should range from about 800 to 1200, and senior high schools from 1200 to 1600. Assuming average population densities and incidence of public school attendance, one elementary school in the indicated size range ordinarily would serve a neighborhood of one-half mile radius, and a junior high would serve a sub-community of one to one and one-half mile radius. The high school would serve a group of sub-communities with a recommended maximum radius of two miles. Sites of approximately 10 acres for elementary, 25 to 35 for junior high, and 40 to as much as 75 acres for senior high schools are desirable to provide adequate setting for the buildings, parking areas and the required space for playgrounds or playfields.

A comparison of the sites of existing elementary schools suggests the importance of utilizing standards at least approaching the foregoing in all future site selection.

Present Public School System

The Lansing school system in January of 1959 comprised 35 elementary schools (kindergarten through grade 6), 5 junior high schools (grades 7 through 9), and 3 senior high schools (grades 10 through 12). Besides these units, the Board of Education has acquired a site of about three acres for a primary elementary school, east of Pleasant Grove Road, just south of Victor Avenue; and a site of 10 acres in the Hopwood Acres area; as well as a 12 acre site in the Pleasant Grove area for new elementary schools. The board also owns a 27-acre site on Pleasant Grove Road, a 28-acre site on Jolly Road, and a 40-acre site on West Michigan Avenue for future junior high schools. Summaries of the existing facilities of the present school system are given in Tables 35 and 36, appended hereto.

During the school year 1958-1959, a total of 27,094 pupils were enrolled in public and parochial schools in the City of Lansing, of which 23,709 were in public schools and 3,385 in parochial schools. For every 100 pupils attending school, about 88 were in public schools and about 12 in parochial schools.

In forecasting future enrollments in the public schools, the parochial school enrollment in each school district and neighborhood, present and prospective, was considered and all estimated future public school enrollments reflect an adjustment for this. Overall, it was assumed that the parochial school enrollment would remain fairly constant in the future as has been the case in the past. However, between different sections the situation may be expected to vary, due to the spatial distribution of parochial schools, existing and projected at this time.

In the Lansing school system there are several obsolete and poorly-located plants that sooner or later should be abandoned; and many of the schools are on small sites that should be enlarged. On the other hand, many of the schools, new and old, are of sound construction and may be considered relatively permanent facilities. These conditions were fully borne in mind in setting forth the proposals which follow.

Proposed Public School System

In developing the proposed school system for elementary, junior high, and senior high schools the estimated residential population in 1980, by neighborhoods, as described in the following, served as the basis for determining prospective enrollments and approximate room requirements.

Neighborhood Concept

A neighborhood under the Master Plan is a residential segment of the community which contains or usually should contain, within convenient distance from all residents of the area, facilities to satisfy the average family's daily educational, recreational, commercial and religious needs. It usually is based on the service radius of the elementary school, ordinarily ranging up to about a square mile in area. Limiting elements determining the shape of neighborhoods may be major trafficways, railroads, rivers, or areas devoted to non-residential uses. Neighborhood population usually will range between 2,000 and 8,000 persons, with a desirable size of about 5,000.

Because of the location of existing schools and their relation to the established pattern of major trafficways it is, in numerous instances, impossible to identify or organize the ideal neighborhood unit in which no major streets will have to be crossed to reach the school. In such cases neighborhood segments are grouped into "neighborhoods."

Just as the elementary school is the focal point of the neighborhood, the junior high school is the nucleus

for the larger sub-community which usually is composed of three or four neighborhoods. Sub-communities have been designated under the Master Plan mainly by recognizing the location of existing and future junior high schools, and taking account of existing and proposed separators (major highways, rivers, non-residential land uses, etc.) The junior high school, with its one to one and one-half mile walking radius and 800 to 1200 pupil capacity, tends to be a unit adequate to serve an area containing some 20,000 people, more or less. With its larger organized play-park area, gymnasium and auditorium, the junior high school acts as a natural cultural, educational and sports hub for its sub-community service area.

The senior high school serves a group of two or more "sub-communities" that together form a "community" which varies considerably in size with such determinants as major non-residential land-use belts and topographic barriers. The size of the community, both in area and population, establishes the number and type of educational facilities needed.

Park-School Concept

Another concept, increasingly recognized in recent years, is that of the "park-school." In a growing number of communities there is close cooperation between school and park authorities in the acquisition, development and operation of educational-cultural-social centers. The "park-school" combines park, school and recreation facilities on one site. By joint planning and development, and cooperative maintenance and operation, it becomes a unit that makes possible the programming of year-around activities. Such an arrangement produces substantial savings over the cost of providing, maintaining and operating separate facilities.

Several examples of this cooperative effort between the Board of Education and the Parks Department of Lansing already exist. School plants such as Elmhurst, Kendon, Lewton and Lyons are striking examples of results attainable through this cooperative effort. It is assumed that continued cooperation will prevail, and accordingly, recommendations of this report reflect further development of the "park-school" concept.

Attendance Districts

Attendance district lines desirably should follow natural or man-made "barriers" such as rivers, ravines, traffic arteries, railroad lines, and the like, whenever possible. Many of the present school attendance districts do not conform to this principle or to the proposed neighborhood boundaries. Many of these conditions, however, were created by physical changes occurring after the construction of a school facility. The future plan for schools proposes that school districts, where possible, be adjusted to conform with neighborhood boundaries as closely as possible.

Obviously, for an area as small as a school district, in which minor numerical changes in population may produce relatively substantial variations from mean trends, only approximate predictions of future school attendance can be made. Therefore, the population and school attendance estimates for each neighborhood should be reviewed from time to time, and adjustments made accordingly. Neighborhood population and school attendance figures may be seen in the tables appended hereto.

Future School Enrollment

As found throughout the United States, an average of about 17 to 22 per cent of a city's population is in public schools, the variation depending mainly on population age composition and parochial school enrollment for the area involved. The projected kindergarten through 12th grade public school enrollment for the Lansing Urbanized Area and its predicted 1980 population of 250,000 indicates that approximately 20 per cent of the population will be attending public schools in 1980.

With an estimated population of 115,000 in 1958, approximately 20.1 per cent of Lansing's population attended public schools during the school year 1958-59. This 1958 enrollment figure is approximately the same as anticipated in 1980.

The enrollment factor - which is the percentage that school enrollment is of total population - for each elementary, junior high, and senior high school was computed, adjusted according to anticipated trends, and used as a guide to estimate future school enrollments in each attendance district. The existing 1958-59 elementary enrollment, in the kindergarten through sixth grade, for the entire city was 13,577. The average elementary enrollment factor for the city was 11.8 and factors ranged from 5.1 to 22.4 in individual districts, with the higher factors generally in the newer areas around the periphery of the city where younger families, with relatively large numbers of school age children, concentrate in the newer subdivisions. These outlying districts, with high enrollment factors, are the primary problem areas that will require additional school facilities in the future. Throughout the city the junior high enrollment factor averaged approximately 4.5 and the senior high school factor about 3.8.

In open areas of anticipated growth, an enrollment factor of ten or more was used for elementary schools, a factor of five for junior high, and four for senior high schools. In areas where a definite trend was indicated, the enrollment factor was adjusted from the average figures.

Proposed Schools

Plate 27, "Plan of Elementary Schools," and Plate 28, "Plan of Junior and Senior High Schools," show the future school pattern as established on the basis of existing school facilities, present and projected enrollments and prospective future developments in land use. The facilities recommended are in keeping with the prescribed standards of size, location, spacing and other factors.

Each neighborhood has an elementary school except in cases where the area has or may be expected to contain too small a population to support a full elementary school. In those cases either a smaller primary school (kindergarten through grade 3) is recommended or the area is attached to an adjacent neighborhood for school purposes.

In neighborhoods in outlying areas where there is expected to be a lag until there is sufficient population to warrant a separate school, a neighborhood park is indicated on the Plan of Recreation Facilities which, at a later date, may be the site for an elementary school.

Detailed recommendations for each existing school facility, each school attendance district, and the future school needs of each proposed neighborhood are available in the report "Future Public School Requirements in the Lansing Urbanized Area," on file in the Planning Department office. Brief summaries of these recommendations are given in Tables 37 and 38.

Most of the recommended changes will not be needed this year or even in the next few, but will be necessary at intervals until 1980 or so. The number of needed changes may appear large, but when spread over a period of 20 to 25 years, the requirements seem within reason. By comparison, during the past 20 to 25 years 14 new elementary schools, one junior high school and two senior high schools were built, and additions were constructed at 20 schools.

The following recommendations are a brief resume of the Lansing Urbanized Area's public school needs up to 1980 or so.

1. Within Lansing City Limits

	Elementary	Jr. High	Sr. High
Adequate School & Site	9	-	1
Expand Site Only	9	1	1
Expand School Only	6	1	-
Expand School & Site	1	-	-
New School on Existing Site	2	1	-
New School on New Site	7	3	1
Total Future Schools	<hr/> 34	<hr/> 6	<hr/> 3
Abandon School Only	-	2	1
Abandon School & Site	8	1	-
Total Abandoned	<hr/> 8	<hr/> 3	<hr/> 1

11. Outside City, But in Urban Area

	Elementary	Jr. High	Sr. High
Adequate School & Site	9	1	-
Expand Site Only	3	1	-
Expand School Only	7	-	1
Expand School & Site	2	-	-
New School on Existing Site	4	1	1
New School on New Site	16	4	3
Total Future Schools	<hr/> 41	<hr/> 7	<hr/> 5
Abandon School Only	-	-	1
Abandon School & Site	2	-	-
Total Abandoned	<hr/> 2	<hr/> 0	<hr/> 1

It is in the interest of economy and otherwise desirable that property needed for expansion and new school sites be acquired at an early date, as has been the established practice. If property is purchased in advance of anticipated residential growth it can normally be acquired at a lower cost and in the proper location. The site once acquired helps to establish the physical pattern if not the character of the neighborhood, and is readily available for development at the proper time. Developed property required for expansion of existing sites should be acquired gradually as it becomes available on the market.

The school facilities recommended herein will constitute an adequate school system to meet the estimated requirements of the future population. Over a period of years, the obsolete schools in the central area should be eliminated as the need for them declines and some should be replaced with new plants properly located within specific neighborhoods. The problem areas in terms of future enrollment and physical plant requirements are in the outlying districts where numerous additional schools will be needed. The Master Plan, it is hoped, will serve as a useful guide for the future development of the school system.

Community College

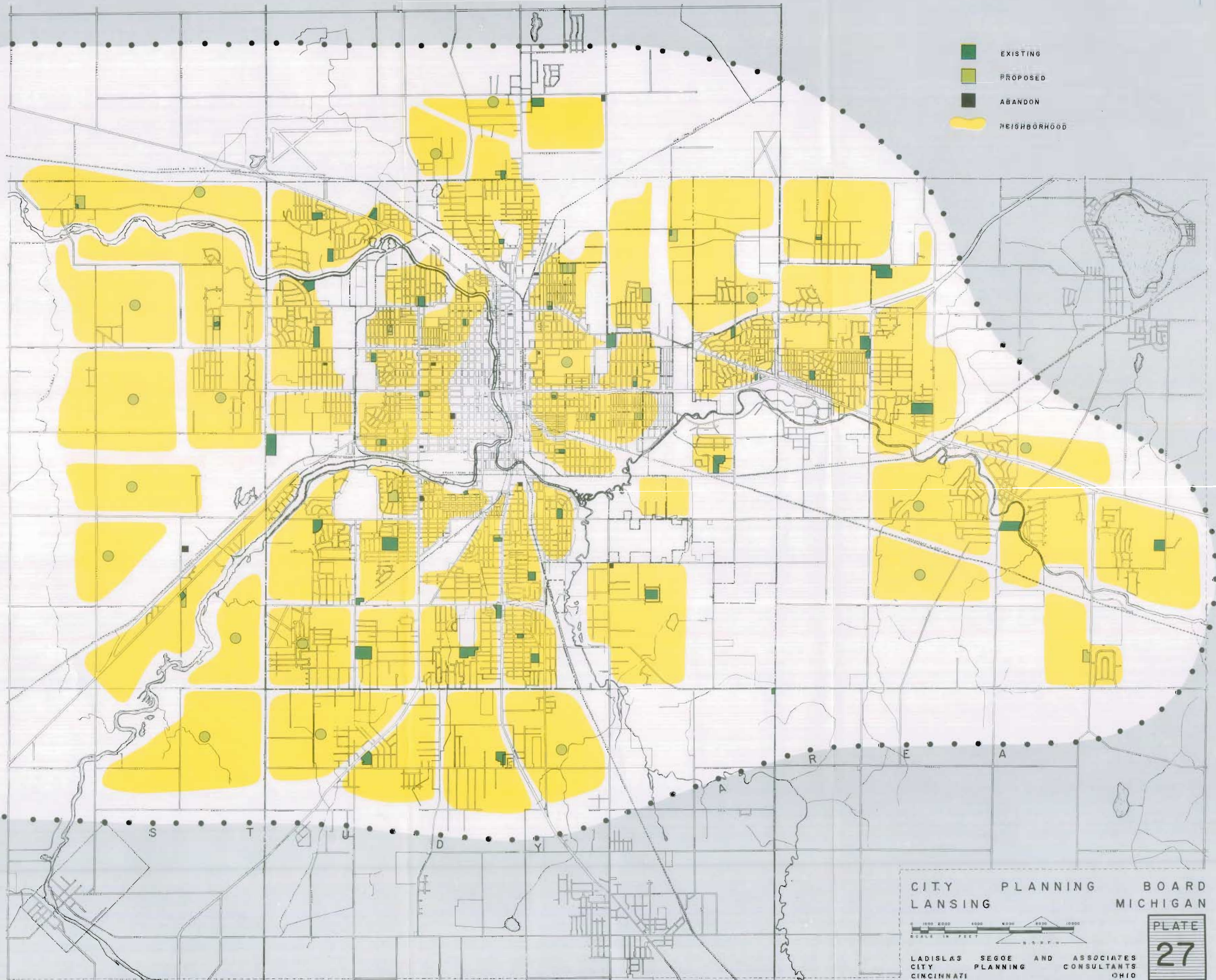
The Lansing Community College was established in 1957 to provide educational facilities for advanced academic work and technical training beyond the high school level. The Community College in 1959

accommodated over 1,000 persons from the greater Lansing area. The school is expected to expand in enrollment as additional facilities are provided. This future expansion will be difficult to accomplish at the present location of the college. Therefore a new site is needed where adequate area for buildings, parking, and landscaping can be provided. It is to this end that recommendations of the Master Plan are provided.

It appears that a centrally located site near the Central Business District would be beneficial to both the prospective student body and the metropolitan community. A proposed site has been selected within the Capitol Development Area, south of the State buildings and is shown on Plate 30. This site is adjacent to the Central Business District and will assist in retaining property values and promote activity within the shopping district. Accessibility by public transit, major access by expressway, location within an aesthetic grouping of public buildings, nearness to public libraries, and a means of providing a logical land-use for an area of anticipated diminishing residential amenities are other reasons supporting this location for the Community College. This site would make use of existing land and buildings owned by the Lansing School Board, when they are no longer required for their present purposes.

PLAN OF ELEMENTARY SCHOOLS

- EXISTING
- PROPOSED
- ABANDON
- NEIGHBORHOOD



CITY PLANNING BOARD
LANSING MICHIGAN

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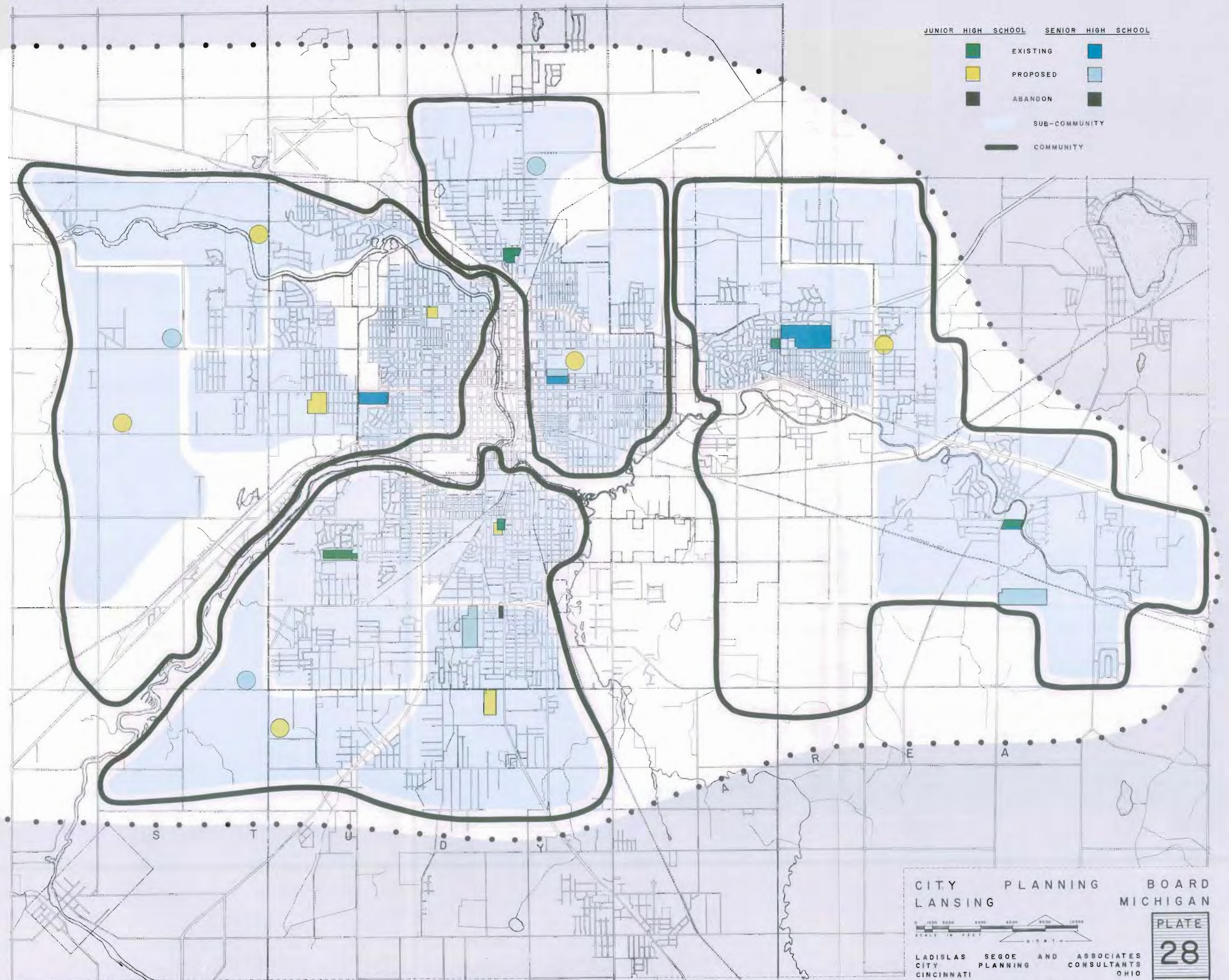
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CITY PLANNING CONSULTANTS
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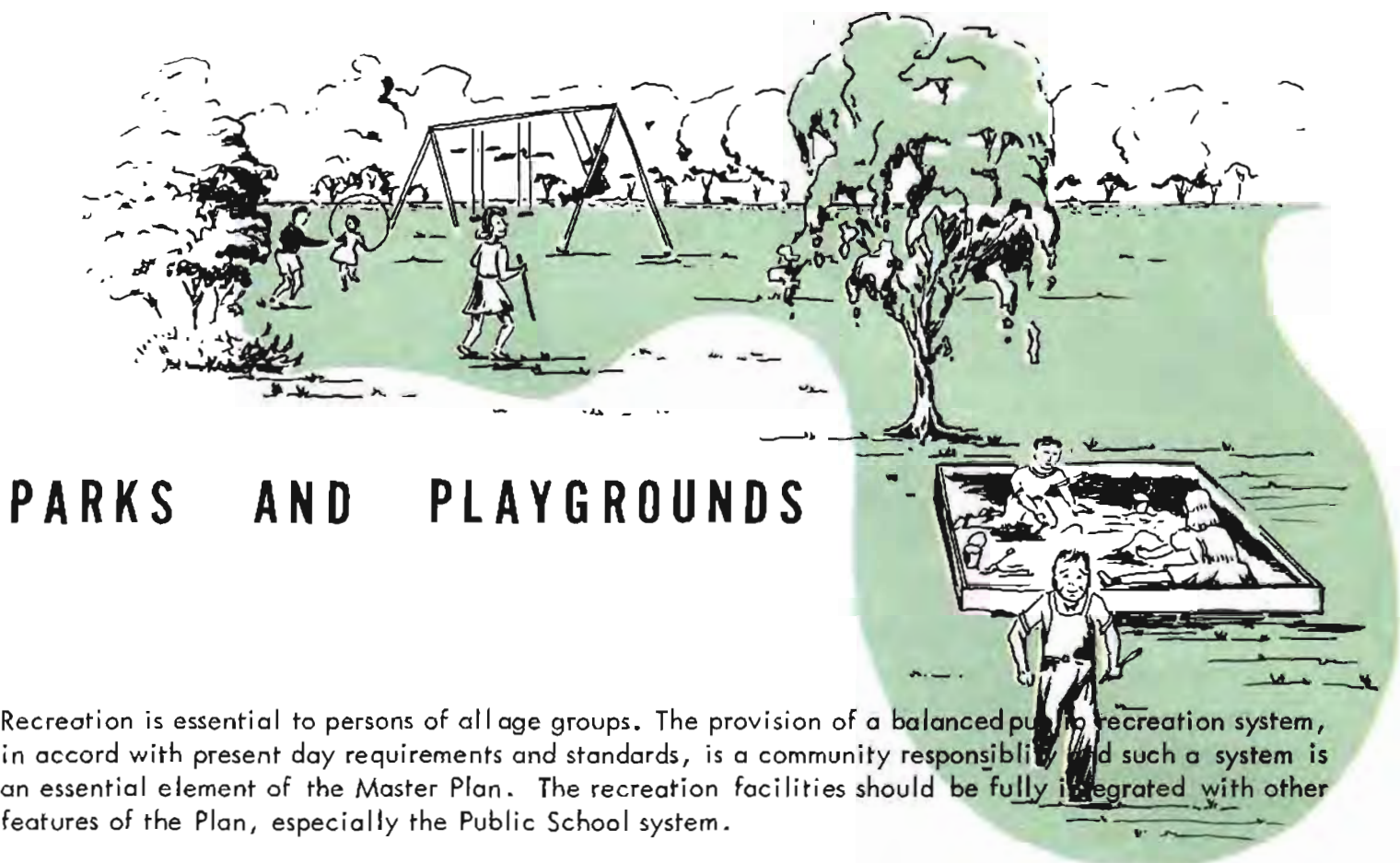
PLATE

27

1958

PLAN OF JUNIOR AND SENIOR HIGH SCHOOLS





PARKS AND PLAYGROUNDS

Recreation is essential to persons of all age groups. The provision of a balanced public recreation system, in accord with present day requirements and standards, is a community responsibility and such a system is an essential element of the Master Plan. The recreation facilities should be fully integrated with other features of the Plan, especially the Public School system.

The Master Plan designates a wide range of recreational facilities conveniently accessible from all sections of the community. These include playgrounds, playfields and athletic fields for active recreation, parks and reservations for semi-active and passive recreation, and special facilities, such as golf courses, swimming pools, and community centers.

Each recreation area may be located alone or combined with another type to form a joint facility. The site of a park or playfield is normally determined by natural features such as woods, ravines, or rivers, in consideration of its proximity to the people intended to be served. Each facility is distributed and classified by its type and by the area it serves, whether neighborhood, community, or region. A tabulation of existing recreational facilities is given in Tables 41 and 42, appended hereto.

Types of Recreation Areas

Park and recreation areas generally can be divided into neighborhood, community and regional facilities, as above indicated. Neighborhood and community facilities serve the daily needs of the population, while regional facilities serve a specialized recreation demand.

Neighborhood facilities include the following:

Play-lots - for children of pre-school age. These are essentially a substitute for individual backyards and are needed primarily in high density residential districts. A portion of a park or playground normally is reserved for this purpose.

Playgrounds - primarily for children of elementary school age. Such playgrounds are considered logically an integral part of the public school system; and when the schools are appropriately located and spaced, and have adequate sites, few children will have to walk more than five average city blocks

to reach a playground adequate to meet their needs. Additional separate playgrounds usually are provided where school sites are not adequate in size or are poorly located. Where possible, playgrounds are combined with neighborhood parks and space reserved for both active sports and passive recreation. The playground desirably should be from three to six acres in size.

Neighborhood Parks - small areas intended to provide for passive recreation for people of all age groups living in a neighborhood. Their size should be determined by the probable ultimate population in the district served, but normally ought not to be less than three acres. They should be located within about five average city blocks of the residential areas to be served. Neighborhood parks may be located separately or combined with other recreational areas - such as playgrounds or playfields.

Community - park and recreation areas include the following types:

Playfields - primarily for youths from 12 to 15 years of age and normally associated with junior high schools. A playfield ordinarily will serve effectively the population within one mile distance, and should comprise a site of 10 to 25 acres. A playfield may be incorporated with a community or neighborhood park, the park acting as a buffer between the playfield proper and the adjacent residential area.

Athletic Fields - for youths of high school age and active adults engaged in outdoor games and active recreation. Athletic fields normally are the locale of organized sports such as baseball, and often are lighted for evening use. Usually an athletic field is provided as part of each high school site. The desired size of a joint high school-athletic field is between 40 and 75 acres. If the athletic field is separate from the high school, between 15 and 30 acres is desirable.

Because of the activities customary on an athletic field, this facility may easily become objectionable in a residential neighborhood, unless careful attention is given to its design and location. Accordingly, the athletic field should be screened with generous border planting so as to mitigate its objectionable features.

Community Parks - for persons of all age groups, normally located where naturally attractive features are found. They function as areas of active and passive recreation, for group outings, picnics, riding, hiking, etc. They may contain special features such as floral gardens, band shells, arboretums, and zoos.

Regional facilities consist of a variety of recreation areas under various jurisdictions.

City-Wide or Regional Parks - normally are large areas along such natural features as lakes, rivers and ravines. Because of the relative distance of regional parks from populated areas, they normally require automobile transportation to reach them and are preferred by persons seeking natural surroundings, privacy, quiet and contact with nature. They often provide sites for swimming, fishing, boating and camping. In addition to local government, the federal, state, and county governments often establish and maintain this type of facility.

Land Reservations - are large outlying areas that have been acquired for park purposes but have not as yet been developed, or are not intended for developed park use. They include areas for wild-life preserves, water-fowl lakes, and demonstration forests. These areas are left almost entirely in their natural state and often include areas which, because of special natural conditions, such as poor drainage, are not suitable for urban development. The flood-plain areas of the Grand and Red Cedar Rivers are examples of land unsuitable for development.

Standards and Requirements

It is customary to appraise recreation facilities by desirable minimum standards of size, number, and distribution in relation to population served. A list of the specific standards applied to Lansing facilities appears in Table 40, appended hereto. While such standards are desirable to attain, varying conditions such as topography, population density and other factors influence their application in particular neighborhoods.

There are two general standards widely recognized for measuring the overall adequacy of the entire community's recreational facilities. The first is that there should be one acre of easily accessible developed recreation area and one additional acre of park reserve available per one hundred population, and the second that 10 per cent of the land in the community should be used for recreational purposes. However, it is not only the amount of park and recreation land that is important, but also the composition and distribution of the total recreation acreage, as indicated above.

Present Facilities

The City of Lansing has a total of approximately 1400 acres of land, including school sites, available for public recreation. This is composed of 88 different sites in various sections of the city. In addition, there are 38 sites containing about 650 acres in the urbanized area outside the city. Besides these public facilities there are five sites, containing approximately 600 acres, presently in use or available for recreation purposes although not publicly owned.

Lansing is recognized generally as having one of the best park and recreation systems in the country. The acreage presently available, measured by the general standards cited above, bears this out. Parks and playgrounds comprise about 15 per cent of the city's developed area, or about 1.3 acres per hundred persons. However, prospective growth of the city, both in area and population will in due course reduce these figures to below the desirable standards cited unless additional recreation areas are acquired and developed.

The most significant deficiency in Lansing's recreation system is the number and distribution of neighborhood and community facilities. While there appears to be a surplus of land in large parks and reservations, much of this land is held for purposes of "flood control" rather than active recreation. In the future facilities of more modest size and appropriate location are needed in many of the neighborhoods. On the basis of its prospective area and population, the Lansing urbanized area would justify some 5,000 to 5,500 acres by 1975 or 1980. Thus an additional 3,000 to 3,500 acres would seem to represent the bracket of a reasonable "target."

The existing playgrounds, the majority of which are located at elementary schools, will quite satisfactorily serve the existing developed areas, it seems. Some of these facilities should be expanded in size, and a few supplementary playgrounds, generally combined with neighborhood parks, will be needed. As a general rule, there should be a neighborhood park within each "neighborhood" - desirably adjoining a school site, where possible, following the "park-school" concept, described in the report on "Schools." Where needed, additional neighborhood parks should be provided at strategic locations to supplement the "park-school" sites. In the Lansing area there is considerable flood-plain land adjacent to the Red Cedar and Grand Rivers that desirably should be acquired as reservations with parts developed for park purposes. This land, in time, can be converted into a regional park, with special facilities and the various parts tied together and given access by parkways - representing an asset to the community rather than a liability.

Proposed Park System

The park and playground system proposed for Lansing and environs is shown on Plate 29 "Plan of Recreation

Facilities." Consistent with the standards described previously, neighborhood parks and playgrounds have been designated, insofar as practicable, to best serve the residents of each neighborhood. Playfields, athletic fields and community parks are so located as to conveniently serve several adjoining neighborhoods. Regional facilities, such as golf courses, large parks, and reservations are so located as to serve the entire community.

The proposed park system, including school sites, contains a total approximating 5,400 acres, divided generally among the different types of facilities as follows:

Table 39

SUMMARY OF PROPOSED PUBLIC RECREATIONAL AREAS

Facilities	City of Lansing		Lansing Urbanized Area (including Lansing)	
	No.	Acres	No.	Acres
Play-Lots	3	2.0	3	2.0
Neighborhood Parks and/or Playgrounds	19	132.0	31	199.1
Elementary Schools with Playgrounds	34	251.6	75	672.8
Playfields	3	29.9	3	29.9
Junior High Schools with Playfields	6	121.9	13	316.4
Athletic Fields	4	60.2	4	60.2
Sr. High Schools with Athletic Fields	3	130.0	8	380.1
Community Parks	4	265.7	10	485.4
City-Wide Parks	4	157.4	4	157.4
Regional Park	1	300.0	1	954.0
Riverside Park	1	187.0	1	1,639.0
Golf Courses	3	226.6	6	530.3
TOTALS	85	1,864.3	159	5,426.6

SOURCE: Lansing Planning Department

Tables 41 and 42 indicate the distribution of the above acreages by individual sites. A more detailed explanation of the recommendations is contained in the report, "Lansing Recreation Study-1956," on file in the Planning Department office.

The accompanying "Plan of Recreation Facilities" shows by means of colors, hatchings and symbols the difference between existing and proposed sites and between the various types of recreation areas. The different facilities have been fully integrated with one another and with other features of the Master Plan. Existing recreation areas are precisely delimited, but proposed ones are shown schematically only.

Among the features of the "Plan" are numerous existing reservations owned by the City. It is recommended that certain of these, such as the Turner Farm, South Washington Park and the West Michigan Avenue property be developed as soon as possible to accommodate the expanding population. Park properties presently owned but not wholly suited for recreation purposes because of size or location are recommended for abandonment. A number of small scattered sites, e.g., the park property south of West Saginaw Street at the Belt Line Railroad, in an area better suited for industrial development, should be sold.

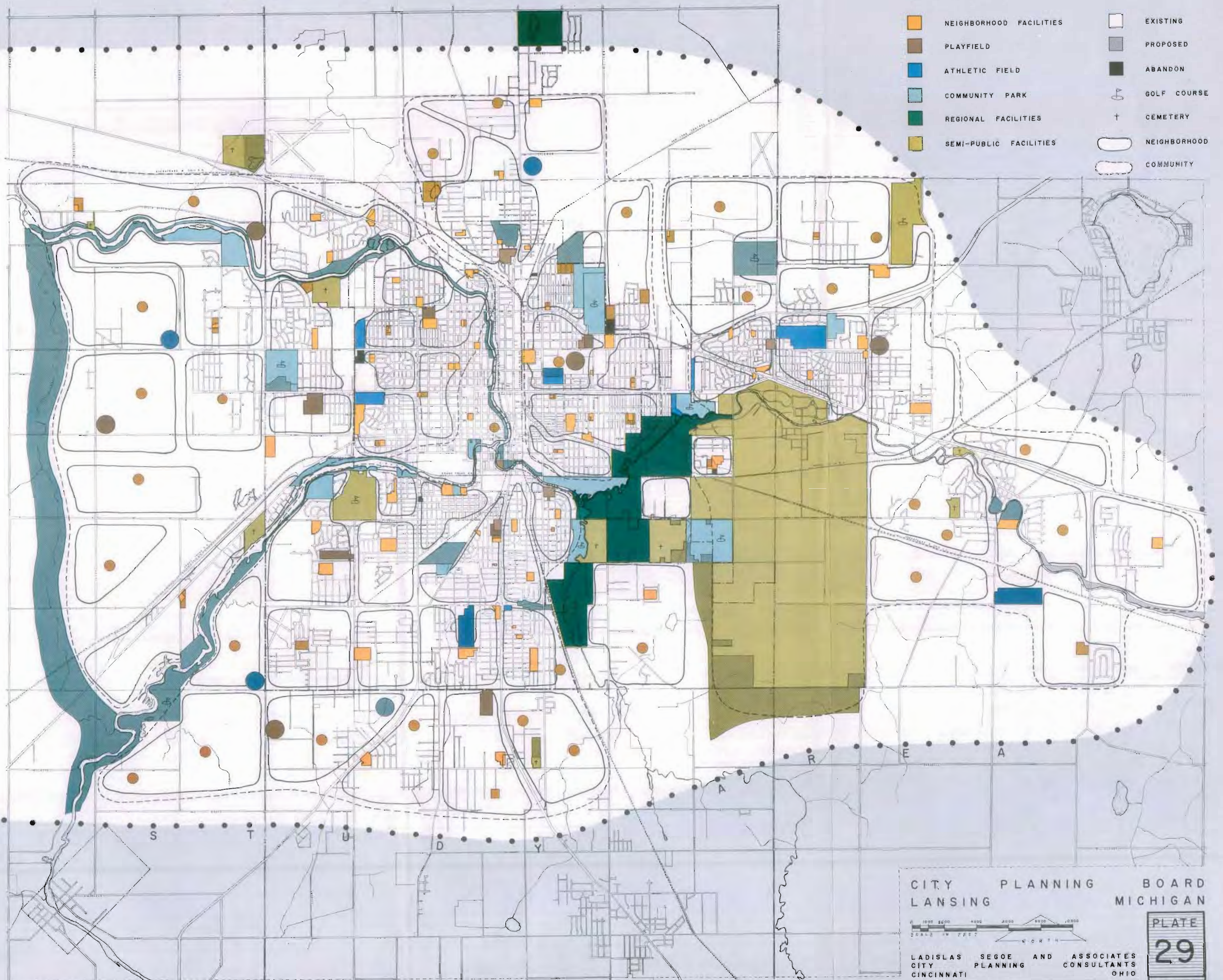
There is an apparent need for at least two additional golf courses in the general area in view of the expanding population. This is especially so since it is anticipated that some of the present privately owned courses will be converted to other uses. A site in the southwest quadrant is suggested as suitable for one of the courses and another is indicated in the northeast. Both are designated on the "Plan."

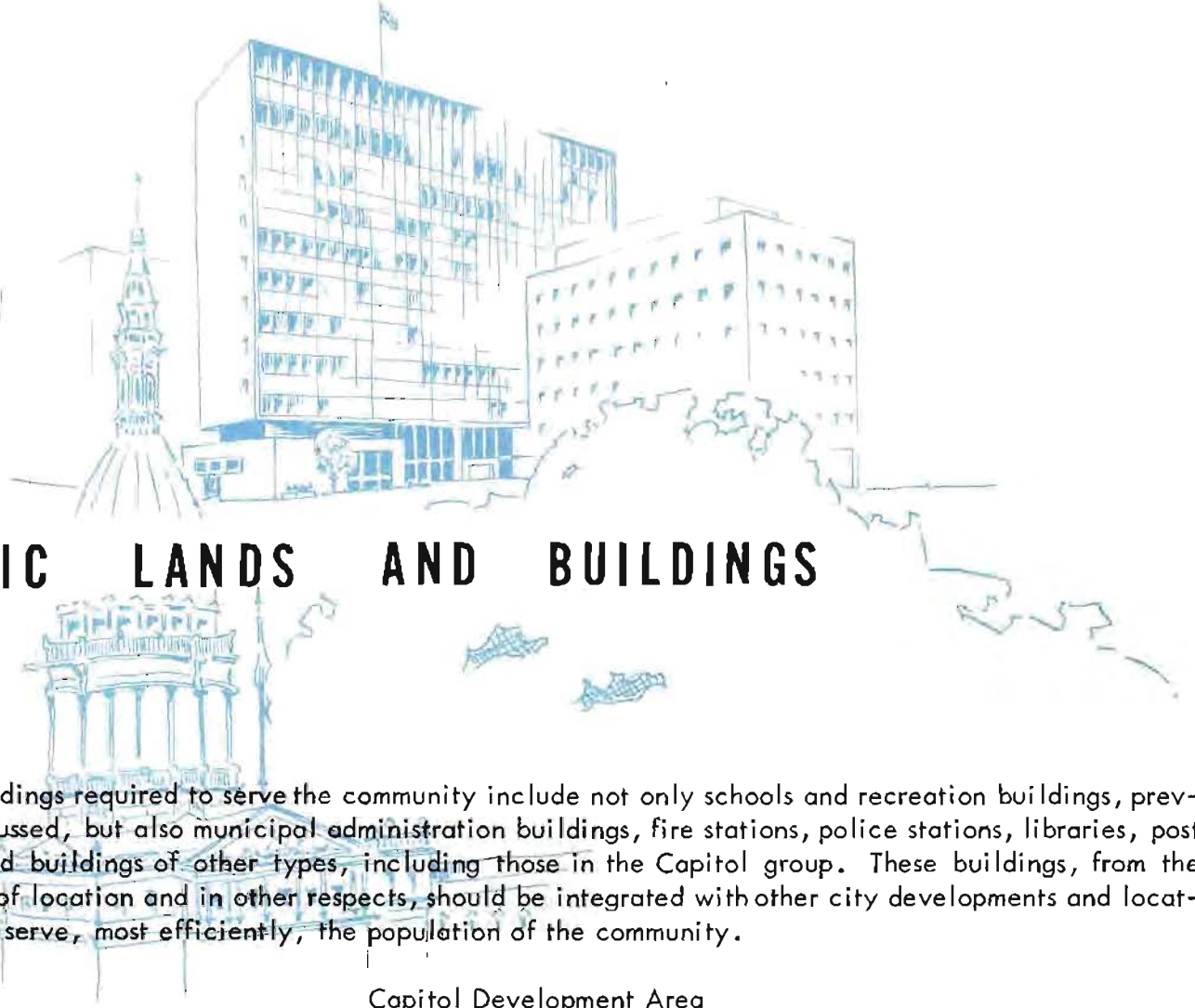
Two additional community parks of approximately 25 and 46 acres each will be needed to meet the needs of the expanding population. Also required will be approximately 11 new smaller neighborhood parks and about four special facilities to supplement the park-school sites previously discussed.

A regional park would be a desirable recreation facility along the flood plains of the Red Cedar River and Sycamore Creek. This "East Side Regional Park" would connect the Red Cedar Golf Course, Municipal Ball Park, Potter Park, Shubel Park, Sycamore Golf Course, Turner Farm, Poxson Park, and Scott Woods, allowing them to be used as a large combined regional facility with scenic park drives and numerous special features. The total park, including the existing park sites, would comprise some 1,000 acres.

The entire proposed park system would have about 1.6 acres of park land per 100 persons, aggregating approximately eight per cent of the area of projected urban development.

PLAN OF RECREATION FACILITIES





Public buildings required to serve the community include not only schools and recreation buildings, previously discussed, but also municipal administration buildings, fire stations, police stations, libraries, post offices, and buildings of other types, including those in the Capitol group. These buildings, from the standpoint of location and in other respects, should be integrated with other city developments and located so as to serve, most efficiently, the population of the community.

Capitol Development Area

Immediately west of the Central Business District lies an area designated and outlined on Plate 30 as the Capitol Development Area. This contains the Capitol, other State office buildings and local civic structures. Two new buildings have been constructed in this area since 1953, and three additional structures presently are programmed.

The advantages of a functional grouping of public buildings, as in the Capitol Development Area, are many, offering convenience of interchange between different offices, greater aesthetic significance, lower site cost, and often lower maintenance and operation cost. It is apparent that the Capitol Development Area with its State buildings, Municipal Civic Center, and Post Office constitutes a focal point reflecting the civic pride and progressiveness of the City and State.

Proposals

The Capitol Development Area is considered functionally efficient and an aesthetic asset. Its central location, accessibility, and extensive existing development are factors indicating that the area be expanded and that additional appropriate public buildings be located here as the need arises. Within the next 20 to 25 years it is anticipated that a new Capitol building will be needed, also three to six additional State office buildings, a Governor's mansion, a State garage, a Federal building, a main public library, a Board of Education office building, and a group of structures constituting a community college.

The indicated uses in the Capitol Development Area will, of course, generate large volumes of traffic and require extensive parking areas which logically should be provided around the periphery as an integ-

ral part of the development. Plate 30 shows a schematic sketch of the Area with suggested groupings of buildings and arrangement of parking and open areas.

City Hall

A combination City Hall and Police Building, rising to a height of 10 stories and containing over 200,000 square feet of floor area, has recently been completed, replacing the old City Hall and City Hall Annex, on a site at the edge of the Central Business District opposite the State Capitol. The new structure provides space for all city offices, council chambers, conference rooms, police activities, and municipal courts - with ample room for future expansion of municipal functions. It is planned to construct a wing north of the new building on the site of the old City Hall. This addition is to face Ottawa Street and will probably house the Circuit Courts and offices of the Board of Water and Light.

The new City Hall-Police Building, and the proposed wing to the north, should be adequate to provide for the space requirements of city and county offices and police facilities during the next 20 to 25 years, and hence no proposals are advanced for additional centralized facilities.

Fire Stations

The city at present operates nine fire stations, seven of these serving areas that are primarily residential in character. The Number One Station is located to serve the Central Business District and has special facilities to back up other stations and service the adjacent high value governmental as well as industrial areas. Engine, ladder, and high-pressure companies, plus inhalator and ambulance service operate from the station. The Number Five Station on Todd Avenue serves primarily an industrial area, but also covers the adjacent residential area. Three of the residential stations have ladder companies to protect high-value districts. The locations of existing stations are shown on Plate 31.

Standards

In determining the adequacy of the existing fire protection system and to provide a basis for recommendations for new facilities, a set of standards was formulated, in line with prevailing practices, as set forth and discussed briefly in the following.

1. Three types of districts with different coverage requirements are designated by the National Board of Fire Underwriters, namely, scattered residential, closely-built residential, and high-value. The Underwriters establish the following maximum travel distance of fire fighting equipment for each:

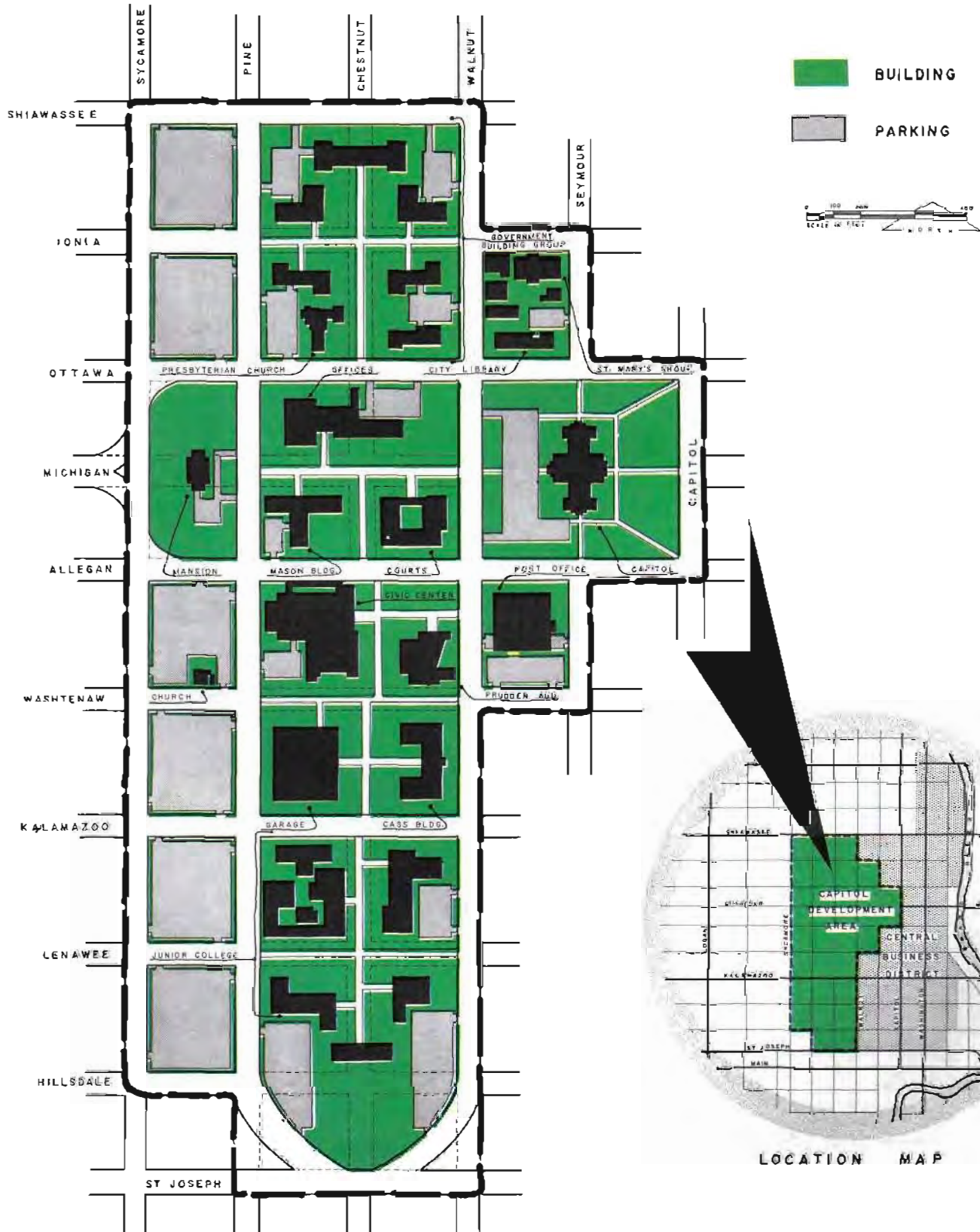
<u>Type of District</u>	<u>Engine Company</u>	<u>Ladder Company</u>
Scattered residential	3 miles	3 miles
Closely-built residential	1 1/2 miles	2 miles
High-value	3/4 mile	1 mile

For cities of 100,000 population there should be a minimum of four engine companies within 1 1/2 miles of the center of a high-value area. This spacing should vary in relation to population densities, building intensities, types of construction, the pattern of trafficways, and with the relative degree of fire hazards in general.

2. Fire stations should be located on trafficways or on streets close to and connecting with major

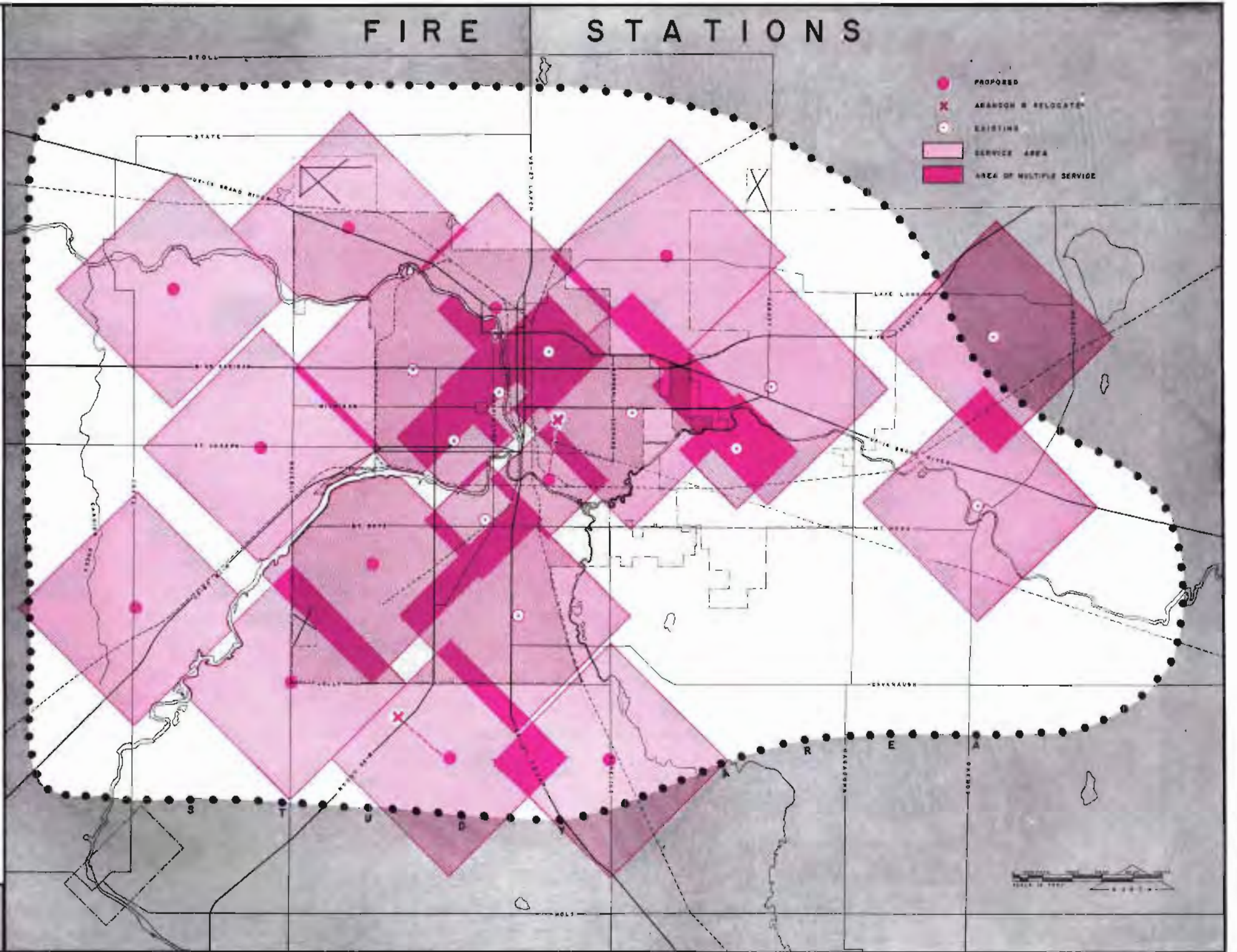
CAPITOL DEVELOPMENT AREA

SUGGESTED FUTURE SCHEME



FIRE STATIONS

- PROPOSED
- ✕ ABANDON & RELOCATED
- EXISTING
- SERVICE AREA
- AREA OF MULTIPLE SERVICE



CITY PLANNING BOARD
LADISLAW SEGOE AND ASSOCIATES
CITY PLANNING AND CONSULTANTS
PLATE 1

or secondary thoroughfares.

3. Stations should be so located that no topographic or other important barriers requiring time-consuming detours are within the primary service areas.
4. Fire station sites should be of sufficient size to allow adequately for storage and maneuvering of equipment, parking, and for sleeping, eating, and recreational space for the personnel. This normally means a minimum site of about one-half acre and a frontage of at least 120 feet.

When tested against these standards the present system is found to be reasonably adequate. The Standards should, of course, be applied to areas of future growth so that suitable sites for fire stations can be located in advance of actual development and these areas provided with early protection.

Proposals

With the anticipated growth of the community, obviously its fire fighting facilities also must be expanded. The addition of approximately eight fire stations for the Lansing area is indicated as expansion occurs; and two existing stations should be relocated to adequately provide for future demands. The two relocated stations and two of the eight new stations are within the 1958 Lansing City Limits. The existing system along with new proposals are shown on Plate 31. As other recommendations under the Master Plan are carried out, such as street improvements, including possible railroad grade separations, the efficiency of the fire protection system should further improve.

Libraries

The public library is an important community facility, circulating reading material in the form of popular books, magazines and pamphlets, and providing facilities for research work. The Lansing library system, operated by the Board of Education, has over 250,000 books available for circulation. At present, the main library, four branches, one bookmobile, plus a special branch at Sparrow Hospital make up the primary library system for the city. Supplementing these are libraries for students in each of the elementary, junior high, and senior high schools. Library facilities also are provided by the State of Michigan, Michigan State University, the City of East Lansing, and many of the local churches.

The main library is the principal research-reference center, serving also as a neighborhood library, and from it are circulated technical books not stocked elsewhere. Branch libraries are the backbone of the library system, and in Lansing are being increasingly patronized each year, with circulation mounting at a much greater rate than at the main library. Total circulation for the entire system has increased 76 per cent in the last 10 years - approximately five times as great as the increase in population during the same period.

Standards

There are few standards that can be applied to library facilities and services. However, it appears desirable that the local system should have about two books per capita of the population it serves. By this "standard", the Lansing system is more than adequate - with about 2.4 books per Lansing citizen, especially since the State of Michigan and Michigan State University have extensive facilities.

The main library should be supplemented with branch libraries located strategically to serve populations of from 20,000 to 30,000. Again, Lansing compares favorably with this "standard" - with the branch libraries serving an average of approximately 25,000 persons. There is, however, a slight deficiency in the northwest section of the city, due to the distribution of the four existing branches. None-the-less, the system may be considered adequate in this era of steadily increasing mobility which partly justifies a

deficiency in any one area, and suggests a trend toward fewer, larger and more efficient facilities.

When new branch libraries are built or older ones replaced, they should be so located as to be easily accessible, with provision of ample parking spaces. They should be on, or near, major streets to attract motor vehicle and mass transportation riders. Thus, seemingly, an "ideal" location would be in or adjacent to a major shopping center.

Proposals

The Lansing library system conforms reasonably well to a liberal interpretation of the foregoing "standards". However, with an increasing amount of leisure time, with the development of new teaching methods, and with the provision of better facilities, the trend of accelerated library use should continue thus placing further emphasis on providing an adequate future library system.

New branch libraries will be needed in areas of residential expansion and the relocation of existing branches may prove necessary. In the future, branch libraries should, as indicated, be located in shopping centers or adjacent thereto, and in accord with the other "standards" cited.

The greatest deficiency at the present time is that of the main library. Its present location has three drawbacks: first, it is limited in building area and site space; second, it is situated in a somewhat "out-of-the-way" location for persons from the Central Business District; and third, associated with the first deficiency, and perhaps most important, is the need for parking area.

In the light of experience in other cities, there is little doubt that a library located near the Central Business District and adjacent to the Capitol Development Area would be used more and to better advantage than the present library. Presently a study is being made by the Board of Education to determine a suitable location for a new main library. A location in the Capitol Development Area, in the 300 block of West Ottawa, has been suggested by the City Planning Department. This site offers the advantages of being in the proximity of both the Central Business District and the numerous State and local offices, a central location, and large enough area to provide adequate parking. The selection of the new site is expected in the near future.

Post Offices and Federal Office Buildings

Federal buildings, particularly post offices, are normally leased rather than Federally owned, and planning for these facilities differs somewhat from that of other public facilities. The leasing of buildings provides flexibility by permitting their relocation to meet varying population demands and land use changes. Leasing assists the local community since the buildings are taxable property, supplementing the local tax base.

Establishment of Federal buildings is normally based on demonstrated need, rather than on some basic standard. Each community has some form of central post office, with additional branch post offices established where economically justified. Federal office buildings are normally built when the size and number of local Federal offices make the consolidation of offices and construction of a building practical.

It seems apparent that a centrally located Federal office building will be needed in Lansing in the near future. The number of Federal agencies has reached a point where this facility appears justifiable. A suggested location for such a building within the Capitol Development Area is shown on Plate 30.

Lansing's main post office is centrally located, readily accessible and well situated in an area of predominantly public buildings. This site appears adequate for future needs; with space available for future expansion.

Additional branch post offices will be needed as the community continues to grow. These will best fit into the community pattern if placed within or adjoining a community or sub-community shopping center or within another commercial area. This would allow for accessibility and convenience, and would have the least disrupting influence on the community structure.

Other Municipal Buildings

It is beyond the scope of this study to investigate the needs of all of the miscellaneous public functions. Certain of these have been examined only superficially, but the future requirements are sufficiently clear to justify the inclusion of certain observations in this report.

Municipal Market

The municipal market is well situated in a non-residential central location adjacent to the Central Business District. It has the availability of rail facilities, if needed, and is readily accessible from major streets. It is expected that the market will need room for expansion in the future, and this expansion could logically occur to the south of the present site.

Sewage Disposal Plant

This facility will need expansion in both capacity and site area in the near future to accommodate the expanding growth of the city. When the present plant reaches a point where its further expansion would prove impractical or uneconomical, a site for a new plant in the general vicinity of Delta Mills appears to be indicated.

City Garage

The city garage is presently situated adjacent to the Central Business District. If and when this facility needs additional space it would be more economically and otherwise better located in an outlying area of heavy commercial or industrial development.

Power Plant, Sub-Stations, and Well Sites

These facilities are normally established whenever the demand justifies their installation. It is recommended that the present policy of making these facilities homogeneous with the character of the adjacent area be continued.

Boys Vocational School

The State-owned and operated Boys Vocational School is scheduled to be abandoned in the future and replaced by buildings presently being constructed in a rural location. Thus, there will be opportunity for redevelopment of the 90 acres now occupied by the school. Under the Master Plan most of this property would be best used for public and quasi-public uses. An elementary school, a junior high school, a possible hospital site, and a street extension are recommendations for the disposition of this site.

Other Public and Quasi-Public Buildings

Michigan State University

Since its founding in 1855, Michigan State University has exerted a major influence on the development of the Lansing area. The University occupies over 4,250 acres of land which is the largest single property holding in the area. It has and will continue to have an important economic and cultural effect upon the community.

Michigan State University is the ninth largest institution of higher education in the nation. Its more than 19,000 students come from every state in the union and from over 50 foreign countries. It is expected that the enrollment will continue to increase and may reach a peak of about 30,000 to 35,000 students during the next 10 to 15 years. This increased enrollment will require expansion in both the academic and administrative facilities of the campus and will in turn have an increased influence on the economy of the area.

The University approaches the status of a self-contained city. In addition to educational facilities it provides living areas for both single and married students, shopping facilities, restaurants, visitor housing accommodations, entertainment, year-around recreation activities both indoor and outdoor, and even employment opportunities for its students. The 1958 married housing area of the University alone amounted to nearly 200 acres and had a capacity of housing about 2,600 student and faculty families. Additional married housing units are being constructed at present and it is expected that in the near future accommodations will be available for more than 3,000 families.

Land has been allocated under the Master Plan for the expansion of University holdings and for the provision of special facilities and expanded trafficways adjacent to the campus. It is to be hoped that the University property will be fully and efficiently used but that additional land better suited for other community uses will not be acquired by the University.

Hospitals

Lansing is served by three hospitals; the largest is Sparrow Hospital with a capacity of 416 beds; the second largest, St. Lawrence, has 266 beds; the smallest is Lansing General, a newly constructed hospital having 90 beds.

The need for hospital beds varies considerably with population changes, shifts in population composition, variations in the local economy, and improved medical techniques which reduce confinement. In 1954, a special study of hospital needs for Lansing and its service area was conducted, arriving at the conclusion that an additional 300 beds were needed in the near future. To date, part of this required additional capacity has been provided, but a deficiency still exists. Based on the standards presented in the 1954 hospital report, a total of approximately 1,250 beds, being about 500 additional beds, will be needed by 1980.

A site for a hospital should be as near the geographic center of the population as possible, so as to make service to all areas convenient, and should be an or directly accessible via major streets. An excellent location for a new hospital, when the need is fully established, would, it seems, be at the present site of the Boys Vocational School. There would be available here some 25 to 30 acres with space also available for two new schools, as suggested in the report on "Public Schools."

Churches

In general, churches have been given little or no basic planning assistance regarding location and other needs. Since the 125 churches in the Lansing area are such a prominent community feature, it is important that an attempt be made to assist churches generally in finding the best locations within the community structure. The following standards and suggestions should help in determining the appropriate location and site development of churches:

1. Normally there is provided at least one church for every 2,000 people in the community.
2. Church sites should be spaced approximately one mile apart; however, two or more churches may be logically placed in one general location.

3. The neighborhood church should be located on a major transportation artery and near or adjacent to, but not within, a shopping center. Such a location aids in relieving parking problems, since the church may use the parking facilities of the shopping area as its hours of demand are normally different from those of the center. Such locations, in addition, allow the church grounds to act as a transition between the adjacent commercial and residential areas.
4. The "ideal" site size is between three and five acres, with two acres being the accepted minimum. There should be provided approximately one parking space for every three seats in the church auditorium.

PART III

THE LAND USE PLAN

"It shall be the function and duty of the (Planning Board) to make and adopt a Master Plan for the physical development of the municipality. . . .with due regard to its relation to the neighboring territory. The plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the municipality and its environs which will in accordance with present and future needs, best promote health, safety, morals, order, convenience, prosperity, and general welfare, as well as efficiency and economy in the process of development; including, among other things, adequate provision for traffic, the promotion of safety from fire and other dangers, adequate provision for light and air, the promotion of the healthful and convenient distribution of population, the promotion of good civic design and arrangement, wise and efficient expenditures of public funds, and the adequate provision of public utilities and other public requirements."

ACT 285, Public Acts of 1931
State of Michigan



LAND USE PLAN

The Land Use Plan is enclosed in a pocket inside the back cover of this publication. This Plan, in contrast to the Land Use Map which shows present uses, portrays in long-range terms the proposed uses, both public and private, to which the future land of Lansing desirably should be placed. In addition to land uses of different categories, which are shown by various patterns and tones, the Land Use Plan indicates public facilities of various types by distinctive symbols.

The primary land uses indicated on the Plan are business, industry and residence - each in areas considered most appropriate for their purpose and in scale quantitatively with future requirements. Sites for such public facilities as schools, parks and playgrounds, also sites for other public, semi-public, institutional and private recreational uses are designated on the Plan. The public facilities shown, besides schools and recreational features, include expressways and thoroughfares.

The Land Use Plan is a generalized composite of the features of the Master Plan, showing various land uses and the different elements of the Plan as a total picture. No distinction is made between existing features and those proposed, since the facilities are depicted as if they had already been brought into reality. Specific information regarding any single feature may be obtained by consulting more detailed recommendations in the various sections of the Master Plan.

It should be emphasized that the Land Use Plan, as an instrument of planning, is a guide to the attainment of a desirable urban pattern. However, it is not legally binding on individuals, land uses, properties, or the community as a whole, and serves only as a recommended guide to the future development of the community.

That part of the Plan pertaining to the use of private property portrays in broad outline the long-range zoning plan - to be used generally as a guide in allocating different areas in the community to their most appropriate uses by amending the Zoning Map from time to time to provide for emerging needs. Such indications of the desirable future use of each segment of the community should encourage and aid in bringing about subdivision practices appropriate in each area, and will be of assistance in determining the appropriate location and size of various utilities or extensions - such as sewers and water mains.

In general, under the Land Use Plan, certain sections are designated for residential expansion for the reason, among others, that residential development is presently underway or that lands are topographically or otherwise eminently suitable for such expansion. It will be most economical to provide sewer, water, street paving and other municipal facilities and services when new developments of the urban type are consolidated in certain sections - each successive development contiguous, at least in part, to an already built-up area. Obviously, it would be all too costly if not impossible to provide even the minimum of municipal improvements or services to numerous small, widely scattered residential settlements. The Land Use Plan provides a basis for establishing policies in respect to the extension of utilities and other municipal facilities and services which will further urban expansion along the desirable lines herein indicated.

In establishing the Land Use Plan the amount of land presently used for different purposes, as determined by the 1954 land use survey and discussed in the section on Land Use, was used as a guide. There is a fairly definite relationship in each community between the amounts of land used for various urban purposes and the population of the community. This relationship is useful in estimating the land area required to provide for the future population. In estimating prospective land use ratios and the acreages of future land, modern trends in building and land use practices were taken into account. Changes such as larger lots for residences, bigger industrial sites, and fewer but larger shopping areas are examples of new trends. The land areas for different uses as estimated for 1980, compared with those which existed in 1954, are given in Table 43.

Nearly 56,000 acres (over 87 square miles) seemingly will be needed for the accommodation of all types of urban uses and activities, existing and future, public and private, for Lansing and environs within the next 20 to 25 years. This means an additional 31,000 acres, with the total being more than twice the developed area of the present city and surrounding territory.

While the foregoing increase in acreage appears high when compared with an estimated increase of approximately 60 per cent in the total population, it can be attributed partly to the changing concept of modern land development, previously described in brief, and partly to the provision of an adequate margin of supply to allow for flexibility of development. Even so, it is important, as already indicated, that the available and suitable vacant lands within the presently developed area, or lands contiguous to the built-up area, be put to use first rather than dispersing urban growth farther out, leaving the close-in sites unproductive. The more or less contiguous development of land will result in a reasonably compact and continuous urban pattern which can be economically serviced. This growth can be guided under the Subdivision Regulations which require the installation of improvements prior to building construction coupled with appropriate policies governing the extension of sewers and water mains.

The greatest amount of land will be used in the future, as at present, for residential purposes, primarily for single-family houses. It is estimated that approximately 20,000 acres will be used for residential purposes within the next 20 to 25 years. Considerable acreage also will be required for streets, even though modern subdivision design can effect a saving in street areas from the proportionate amount of land necessitated by earlier practices. During the next 20 to 25 years, it is expected that the total area in streets and alleys may well be adjusted from the present 22.8 per cent of the city developed area and the 18.6 per cent of the total developed area to approximately 20 per cent overall. The acreage of parks, school sites and other public and quasi-public lands will increase; however, the percentage of public and quasi-public areas probably will be slightly less in 1980 than in 1954. Public schools is the only public use expected to show a substantial increase, percentage-wise.

Relatively small increases, acreage-wise, are expected in the areas needed for commercial land, although future commercial areas will increase approximately 95 per cent. The largest increase (other than for residential use) will be necessary to provide sufficient acreage for industrial expansion. The estimated

industrial increment amounts to approximately 3,700 acres, or an increase of about 280 per cent over the aggregate 1954 area used for industrial purposes. These indicated changes in future land use totals should produce a more desirable balance in the proportional relationship between the various classifications.

Carrying Out The Land Use Plan

The Land Use Plan represents a "blueprint" for guiding future development or redevelopment to obtain a desirable arrangement of land uses. It should, as already indicated, serve as a guide to the establishment of policies regarding the areas to which urban facilities and services should logically be extended. Regulatory measures adopted by public authority should be directed toward bringing about the community pattern presented in the Land Use Plan. The most important single instrument for implementing the plan is a workable zoning ordinance which details the general long-range recommendations of the Land Use Plan.

In administering subdivision regulations and controlling the location and spatial limits of future developments, the Land Use Plan becomes particularly helpful. Both the developer and the community as a whole can expect to benefit by following the Plan - the developer as a result of greater saleability of property, and the community at large from the economical provision and operation of facilities and services and the stability of property values.

The carrying out of the Plan is as important as the Plan itself. To be of maximum value the Land Use Plan must be properly implemented, as well as have all individuals concerned thoroughly understand its recommendations and the principles or theories upon which these recommendations are based.

PART IV

PLANNING ADMINISTRATION

PLANNING ADMINISTRATION

ZONING

ZONING ADMINISTRATION

SUBDIVISION CONTROL

CAPITAL IMPROVEMENTS PROGRAM

PLANNING ADMINISTRATION

Lansing, as a growing community, requires efficient and progressive administration of its municipal affairs. Now that the city has a new comprehensive Master Plan for community improvement and development, it is in an even better position than previously to work toward making Lansing an increasingly more attractive, convenient and desirable community.

The Master Plan of Lansing particularizes and correlates each of the physical features of the community's present and desirable future development. The Planning Board is the agency responsible for advising and assisting the Mayor and Council and other public officials, as well as private developers, in carrying out and fulfilling the principles and purposes of the Plan. This is no mean task. Not only is there pressure by special interests; but, as in other cities, well-meaning individuals argue that it is impracticable, if not impossible, to solve a specific problem; or that proposed improvements, while admittedly necessary and desirable, will cost too much - and so on. Despite such arguments and other obstacles, diligent efforts to effectuate the Plan by the Planning Board - with the support of the Mayor and Council and other public officials, and most important of all, by the citizens of Lansing - will result in the gradual realization over the years of the benefits resulting from the recommendations of the Master Plan.

Planning administration is the day to day application of sound planning principles, in accord with the Master Plan, concerning all public and private projects or developments. Consistent and continuous practice of such planning administration is essential to bring into being an increasingly better, more efficient and more attractive community. It will insure that the daily task of community building and rebuilding is in harmony with, and promotive of the long-range design of the better future community as portrayed in the Master Plan.

Legal Aspects

The functions of the Planning Board are primarily advisory, however its advice concerning both public improvements and private developments carries considerable weight under the statutes and local ordinances. Regarding proposed public facilities, such as buildings, streets, recreational areas, and others, as well as zoning, the Mayor and Council can overrule the Board. Prior to making any such recommendations, the Board must assure itself, that such recommendation: (1) is promotive of the best interests of the community at large; (2) is in scale with present and probable future needs; (3) will not impair or be in conflict with other features of the community's desirable future development; and (4) shall not be arbitrary or capricious.

The scope of the Board's functions are practically as extensive in respect to private developments as they are regarding public improvements. With all subdivision plats required to be submitted to the Board, subdivisions will be made to conform to the Master Plan with regard to the layout of streets and other public open spaces. In addition, modern standards will be attained in the sizes and shapes of lots and essential street and utility improvements will be required prior to development.

Enforcement of the Zoning Ordinance¹ will ensure that the different types of residential buildings, business and industrial structures and uses are placed in the districts assigned to each under the Zoning Map, and that all such buildings will not exceed the maximum height and will have at least the minimum open space about them as required by the provisions of the Zoning Ordinance for each zoning district.

However, adequate legal authority and even the best plan will not in themselves assure effective guides for the future development or redevelopment of the community. This will depend in the main on: (1) the quality of planning administration by the Planning Board; (2) the respect which its recommendations receive and the cooperation and support it obtains from the Mayor and Council and other public officials; and (3) the confidence and support which it gains for itself and its efforts on the part of the people of the community.

Administrative Practices

Obviously, members of the Planning Board should have a genuine interest in community betterment, and should possess a thorough understanding of the city's problems, needs and potentialities. Also, they should be familiar with the planning laws and ordinances, and be acquainted with the general objectives, principles, and methods of city planning. The Planning Board must hold regularly scheduled meetings with a definite program or agenda to be followed at each meeting.

The processing by the Board in matters of (1) original jurisdiction - such as land subdivisions, or of (2) reference - such as proposed zoning amendments, proposed street improvements, public buildings, recreational areas, and other proposed public improvements, in a city of Lansing's size, requires the full-time assistance of a planning staff. The planning staff should bring to the attention of the Board all improvement proposals or plans under consideration over which the Board has jurisdiction. This should be done while such matters are still in the formative stage to give the Board time to develop carefully considered recommendations.

The approval or disapproval of subdivision plats should, of course, be based on the provisions of the Subdivision Regulations; and the handling of requests for zoning changes should be in accordance with provision of the Zoning Ordinance. The Board's recommendations concerning these and other matters obviously should be consistent with the Master Plan.

¹This should be done in the first instance by the Building Inspector, in conjunction with the administration of a modern building code and sanitary regulations.

ZONING

Zoning is the regulation of the use of private property - for the purpose of promoting the orderly development of a community, and furthering the health, safety, and general welfare of its inhabitants. Under zoning, every property owner is allowed the enjoyment of all of his property rights and is restricted from encroaching on the rights of others. Thus it protects every property owner from injury by other property owners who would seek private gain at his expense and that of the community.

Zoning involves allocating all the land in the community to districts or zones of different categories, and regulating, district by district, the use of property and the height and size of buildings. It is the instrument for giving effect to that part of the comprehensive Master Plan which is concerned with the use of private land - as distinguished from that part which is concerned with public spaces and facilities.

The Existing Land Use Map, described in the section on Land Use (not to be confused with the Land Use Plan described in the section on Land Use Plan), reveals numerous instances of the indiscriminate manner in which both residential and non-residential buildings have been located in many parts of the city.

In many cities, in the absence of zoning, commercial and industrial establishments have invaded predominantly residential neighborhoods. Aside from such cases, in many cities, including Lansing, residences have been built in the past with little regard to desirable set-back building lines, or with side yards too narrow for adequate light, air, privacy, and fire protection. In certain cases in Lansing, buildings have been placed unwisely with no regard to the interest of neighbors, the neighborhood or the community at large. The desirability, if not the livability, of some residential sections has been greatly lessened by such practices and, except where protected by private deed restrictions, all residential areas have been exposed to similar dangers.

The invasion of incompatible property uses into residential sections, inadequate open spaces, and other malpractices in land use are among the principal causes of blighted areas and slums in our cities. It has been estimated that the depreciation in property values in our cities, due to lack of zoning, has exceeded the losses caused by fire. From the standpoint of the property owner, this is all the more serious because insurance can be obtained against fire losses but not against property depreciation. From the standpoint of the community, the lowering of property values means a shrinking tax duplicate and, consequently, higher tax rates if reasonable standards of public services are to be maintained.

Zoning Ordinance and Map

The Zoning Ordinance now in effect was enacted in 1942 and both the text and the map have been amended numerous times since. In form and in other respects the present Ordinance differs materially from present-day ordinances of the better type and, among other things, fails to recognize adequately prevailing conditions or the development envisioned under the Master Plan. Briefly, shortcomings of the present Ordinance and the Zoning Map include the following:

Zoning Text

Certain definitions need clarification and additional definitions are needed covering new concepts. Side yard requirements based on a percentage of width rather than building height are inequitable. Yard requirements on corner lots have caused difficulties. Lot area requirements are too small and should be coordinated with the Subdivision Regulations. The designation of various uses in the classification of "commercial districts" needs clarification. The use of signs and displays is not adequately defined and regulated. Adequate set-backs and buffers are not provided between "residential" and "industrial" districts. Residential uses should be prohibited in certain commercial and industrial districts the same as provided for in the present "heavy industrial" district. In some districts prohibited uses are listed rather than permitted uses. Parking requirements are not given in all districts. The "board of appeals" section needs clarification. General yard, height and area standards do not allow for sufficient flexibility of design. Integrated building developments are not encouraged. Newer zoning concepts, such as "floating zoning", "flood plain zoning", "performance standards", "non-conforming use provisions", etc., are not included.

Zoning Map

The defects in the present Zoning Map derive principally from the failure of district provisions to fit present or anticipated future conditions. In the case of business districts, there are too many, with some of these being "spots" legalizing misplaced, marginal businesses. Some business districts are located where conversion to business use is extremely unlikely. Certain public properties and cemeteries are unzoned. There are many zoning districts that are inappropriately located, of the wrong size, or need redesignating in light of current trends. Also, single family districts in recently annexed areas need rezoning to place areas in their recommended zoning classifications. There are areas where conflicting zoning districts on opposite sides of a street are in competition for the use of the street. Having the transition from one district to another at a rear property line will help to alleviate this condition.

Proposed Zoning Ordinance and Map

The proposed Zoning Ordinance and Map have been fashioned to fit not only existing conditions but also future requirements as gauged by findings of the population and economy studies; and the delineation of zones, as well as the requirements and standards, has been determined on the basis of studies of existing and potential physical developments founded on the land use survey and inventory.

In order that the Ordinance be sound, reasonable and meet the criteria established by the judicial decisions in zoning cases, it is based on full knowledge of existing conditions throughout the community, as well as a reliable appraisal of future needs and requirements. All of the basic Master Plan surveys and studies were brought to bear in drafting the Zoning Map and the textual provisions of the Ordinance.

In addition - because of the intimate relationship between the use and intensity of use of private property, on the one hand, and the public facilities and utilities necessary to serve this property, on the other hand - the zoning plan in its various stages was formulated side by side with plans of major streets, schools, parks, playgrounds and other elements of the comprehensive Master Plan. This procedure ensured the integration of the zoning plan with all other features of existing and proposed developments. Tentative zoning districts were checked in the field and against property maps, in establishing the district boundaries.

To avoid confusion because the proposed district provisions differ materially from those in the present Ordinance, the new districts are designated by letter-number combinations, rather than letters only - namely "R-1" etc. for residential districts, "B-1" etc. for business, "I-1" etc. for industry, and other districts.

In the proposed Zoning Ordinance, all parcels of land within the city have been allocated to some zoning districts. The location and exact boundaries of each zoning district are shown on the Zoning Map and require no explanation. The regulations and other provisions applying in each of the districts are set forth in detail in the text of the Zoning Ordinance.

ZONING ADMINISTRATION

The Zoning Ordinance will be only as effective in achieving proper community development as the method in which it is administered. The public acceptance and respect, which the citizens of Lansing should have for the Zoning Ordinance, also will be largely determined by the method of administration and enforcement.

Building Inspector

The new Zoning Ordinance is to be administered by the Building Inspector, and the mechanics of its administration should be combined with that of a modern building code.

As provided by the Ordinance, every person who desires to erect a building, or to reconstruct, enlarge, structurally alter or move an existing building or structure, must apply for a Building Permit. Every such application must be accompanied by plans showing the nature of the work to be done, the exact location of the building on the lot, and the use to which the building is to be put; and must contain such other information and in such manner as stipulated in the Ordinance. Every person proposing to change the use of a building, structure or land, even if this doesn't involve any new construction, must apply for a Certificate of Occupancy and furnish such information as required.

The plans and information required will enable the Building Inspector to determine whether or not the proposed building and its use, or the proposed use of land when no building is involved, conform to the provisions of the Zoning Ordinance. When he finds that they conform in every particular, he will issue a Building Permit and later a Certificate of Occupancy. If the proposed building or use does not meet the requirements of the Ordinance, he will refuse to grant such permission.

The Zoning Ordinance, with minor exceptions, does not vest any discretionary powers in the Building Inspector, and no such powers should be arrogated by him. In general, he administers the Ordinance in accordance with its literal terms. Whenever the plans for a building or alteration do not conform (whether in respect to use, height, lot area, yard space or other features) to the provisions of the Ordinance, or whenever a change in the use of a building or parcel of land does not conform, the Building Inspector should refuse to issue a Building Permit or Certificate of Occupancy. An appeal from a decision of the Building Inspector may be taken to the Board of Appeals.

Board of Appeals

The Board of Appeals is established under terms of the Zoning Ordinance and by authority of the statutes. It is an administrative board, whose function is to apply the Zoning Ordinance, as adopted by the legislative body of the city, with adjustments to exceptional situations as provided in the Ordinance. These adjustments, however, must be consistent with the Zoning plan and zoning regulations as mapped and as set forth in the Ordinance.

The Board of Appeals has the authority to hear and determine each case which, on appeal or by original application, falls within its jurisdiction as defined in the Zoning Ordinance. But in its decision, it must assume the correctness of every part of the Zoning Ordinance, including the Zoning Map, and restrict itself to the narrow, though important, field of adjustment, administration and interpretation. Curing what it considers bad zoning is not within its province.

In performing these functions, sound policies and practices by the Board of Appeals are of vital importance. The success or failure of zoning administration is dependent in large measure on such policies and practices.

If the Board of Appeals takes its task lightly, interprets its discretionary powers too liberally and thereby encroaches on the province of the Mayor and Council, it can badly impair, if not destroy, the effectiveness of the Zoning Ordinance, antagonize the Mayor and Council and break down public respect and support for zoning directly, as well as through adverse court decisions. Conversely, if the Board interprets the Ordinance too rigidly - in the sense that it refuses to extend the relief in specific cases of practical difficulty or exceptional hardship to the extent it is authorized to do, it will accumulate resentment and opposition, will invite judicial disapproval on grounds of unreasonableness, and will fail to build up and maintain public good will and support; without which zoning, as any other legislation in a democracy, cannot prevail over an extended period of time.

The cases coming before the Board of Appeals are of three entirely different types as follows:

1. Interpretation
2. Special Exceptions
3. Variances

A clear understanding of the difference between them is most important, because the procedures, principles and limitations in handling each type of case by the Board are quite different; and failure to distinguish between them has been found to result not only in confusion and inappropriate action by the Board but adverse decisions by reviewing courts.

1. Interpretation of the Zoning Ordinance by the Board of Appeals is necessary when the Building Inspector is uncertain as to the correct interpretation of a specific provision of the Ordinance, or of the precise location on the ground of a zoning district boundary as shown on the Zoning Map, or when an applicant feels that the interpretation or decision of the Building Inspector is in error. In such cases, the power of the Board transcends that of the Building Inspector.
2. Special exceptions are those types of cases, named and described in specific terms in the Zoning Ordinance, for which, in special situations, the Board of Appeals has authority, in conformance with general rules or tests or conditions set forth in the Ordinance, to authorize, in conformance with general rules or tests or conditions set forth in the Ordinance, to authorize the granting of a building permit or certificate of occupancy - subject to such additional conditions and safeguards as the Board may consider appropriate in order to adequately protect the public interest and prevent impairing the intended purposes of the Ordinance.

The Board is not granted the legislative power to create the principle rule or test, as this is a legislative function; nor is the Board granted the unregulated power to make exceptions or to authorize the issuance of permits as it may deem wise. The Board's authority to grant special exceptions is strictly limited to the cases and situations set forth in the Zoning Ordinance, and then only in accordance with the principles and under conditions prescribed therein for each type of case.

Experience in zoning and the development of zoning legislation and practice has demonstrated that there are certain types of cases or situations which cannot be covered by the general standards of use, height,

area, etc., fixed in the Zoning Ordinance, and which can best be met by the authorization of special exceptions or special permits.

The intent of the Zoning Ordinance is to avoid throwing the zones unconditionally open to certain uses at any location, while at the same time permitting them at such locations and under such conditions as will prevent or mitigate possible detrimental effects upon surrounding uses.

The simplest way to deal with this type of problem would be to permit the Board of Appeals to determine each case entirely according to its own discretion. This, however, is a dangerous method. It reposes so uncontrolled an authority in the Board as to verge at least on the delegation of legislative power to the Board, and as to place in the power of the Board a very serious gradual breakdown of the zoning plan. The general rules, measures or tests to be applied to the grant of these special exceptions are a safeguard against such danger.

3. Variances are modifications of the strict terms of the Zoning Ordinance, which the Board of Appeals is empowered to grant under authority couched in general terms in the Ordinance, in cases where - by reason of the exceptional narrowness, shallowness, or shape of an individual piece of property at the time of the enactment of the Ordinance, or by reason of exceptional topographic conditions or other extraordinary and exceptional situation or condition of such piece of property, or the established uses or conditions on immediately adjoining properties - the strict application of any provision of the Ordinance would result in peculiar and exceptional practical difficulties or exceptional and undue hardship on the owner of such piece of property.

A showing that the strict application of the provision of the Zoning Ordinance would result in unnecessary and undue hardship is a prerequisite for the granting of a variance. Moreover, the hardship which justifies a variance must be that of the individual lot, and not a hardship due to those aspects of the regulations or districting which affect other properties not possessing the peculiar or exceptional characteristics from which the hardship ensues. The Zoning Ordinance specifically lists the conditions under which a variance may be granted. While every effort should be made to hear the comments of owners of nearby properties, the decision must be based on a finding of facts.

As the Board of Appeals, in granting variances, must accept the Zoning Ordinance as correct in every particular, it should base the action solely on characteristics of the individual lot for which the variance is desired and not on characteristics which that lot shares with other lots in the neighborhood or the district or the city. For if the hardship arises out of a characteristic common to the neighborhood or to other lots similarly situated, but not having the peculiar characteristics of the lot in question, then the need is obviously that of amending the Zoning Ordinance. Unless the need of a variance is due to exceptional and extraordinary circumstances, it obviously falls within the legislative field and not within the function of the Board of Appeals.

A request for a special exception comes before the Board of Appeals on direct application; a request for a variance comes on appeal from the decision of the Building Inspector.

Zoning Amendments

The Mayor and Council may from time to time amend the Zoning Map or the regulations set forth in the Zoning Ordinance. However, each proposed amendment will have to be submitted first to the Planning Board for approval, disapproval, or suggestions, as required by the Ordinance and State Statute.

Any property owner in the City of Lansing may request an amendment to the Zoning Ordinance by filing an "application" requesting the City Council to change the zoning classification of the property legally controlled by the petitioner. The "application" is then referred by the City Council to the Planning Board for its recommendations. The Planning Department consults interested agencies (such as the City Engineer, City Assessor, Traffic Engineer, etc.,) for their comments and recommendations. After hearing interested persons and checking the proposals of the Master Plan, the Planning Board's recommendation is forwarded to the City Council which holds an "official public hearing" on the rezoning request. The City Council is the agency that then grants or denies the application for rezoning.

Despite the care and thought with which the Zoning Ordinance was prepared, these amendments may be necessary. Unexpected developments may occur or the conditions upon which the regulations have been based may undergo considerable change over a period of years, or major improvements carried out under the Master Plan may make adjustments in zoning districts desirable. However, in every case there should be compelling reasons for an amendment. The Planning Board should always remember that the zoning plan is an essential part of the comprehensive Master Plan of which the Board is the custodian, and the Zoning Ordinance is an instrument for effectuating this Plan. Also, the zoning plan is not a collection of neighborhood desires and would not be valid if it were. A proposed amendment should not be approved by the Board, therefore, merely because the neighborhood favors it or does not object to it. The petitioner should be required to demonstrate that there is a compelling public necessity for the proposed amendment. The promoting of the public good and the welfare of the whole community must at all times be the controlling consideration borne in mind by the Board in shaping its recommendations to the Mayor and Council on zoning amendments.

SUBDIVISION CONTROL

Usually, before land can be put to urban uses, acreage must be converted into streets, blocks and lots - the process known as land platting or subdividing. Every real estate subdivision laid out within or adjacent to the city becomes a physical feature of the community, and has lasting effect - good or bad - on the community. The physical design of our cities, with very few exceptions, is simply the design of the composite plans of individual subdivisions. Although the subdivider actually is engaged in building the city, he is chiefly interested in realizing as much as he can from the sale of his land in the shortest possible time. The community, on the other hand, acquires an urban addition, the character of which will have a far-reaching effect on its physical pattern and living conditions.

Where subdivisions are not controlled, or inadequately controlled, they may be defective in several major respects; in themselves, in that their street systems are inadequate or badly designed, or the lots are of inappropriate size, shape or orientation; or the street and utility improvements fall short of minimum standards necessary for health, safety or desirable living conditions. Subdivisions also may be defective in relation to the development of adjoining areas, the neighborhood or the community as a whole; the streets may be ill-adapted to existing or required future streets in contiguous areas of the community; the sizes and arrangement of lots may not be in harmony with the existing or desirable future character of developments of the neighborhood; the utilities may not be suitably coordinated in point of location or size with those of adjacent areas.

An examination of the map of Lansing shows that it has not escaped the consequences of the lack, over the years, of adequate subdivision control under a comprehensive plan which would have guided its development. The layout of the original town followed the rectangular or gridiron system, with relatively wide streets and with many alleys. Elsewhere, although the rectangular system was followed in general, there are numerous jogs, discontinuous streets, and various right-of-way widths bearing little relation to the requirements of traffic. Alleys have been provided in many cases, even though these are now unnecessary in residential districts except in special situations.

Many of the street patterns bear little relationship to topography, causing expensive utility construction, excessive street grades, and a waste of buildable property; cross connections are inadequate or lacking; some blocks are too short, others longer than necessary or desirable.

Without going into more detail, it is evident that control and guidance of land subdivision are essential. The legal basis for making such guidance and control effective is the exercise by public authority of the right to withhold the privilege of public record from subdivision plats which have been poorly or inappropriately designed, or which are not properly adjusted to the existing or desirable future development of adjoining areas or to the Master Plan. The statutes of the State of Michigan vest the control over subdivisions in the planning body and the Mayor and City Council. This control over subdivisions may be extended a distance of not more than three miles beyond the city's political limits after adoption of the Master Plan and Subdivision Regulations.

In order to aid in controlling the subdivision of land, a set of Subdivision Regulations has been prepared. These Regulations, in conjunction with other features of the Master Plan, will equip the Planning Board adequately to guide and control all future land subdivision within the community.

Subdivision Regulations are intended to serve as a tool to be applied by the Planning Board for the purpose of promoting desirable modern standards of subdivision design and the coordination of all new subdivisions with the Master Plan. They are no guarantee that all subdivisions complying with them will be fully satisfactory since this will depend on the competence of the designer in applying the principles and standards set forth. However, any defects in layout will be prevented and the quality of subdivision generally improved.

The Regulations set forth in considerable detail the general principles of design and the minimum requirements for the layout of subdivisions, to include; street and block layout; minimum right-of-way widths for streets, alleys, and easements for utilities; minimum roadway widths; maximum street grades; minimum sight distances; treatment of intersections; sizes, shapes and layouts of lots; recommendations with respect to recreational and other desirable open spaces.

Other principles of design pertain largely to the internal layout and development of the subdivision, wherein the location, alignment, and width of streets, the length of blocks, lot sizes and arrangement, and the extent and character of street and utility improvements to be installed are mainly involved. The purpose is to obtain desirable living conditions for the future residents of the subdivision through compliance with widely recognized principles of good design and the installation of street and utility improvements of acceptable standards.

The requirement of the installation of street and sanitary improvements prior to building construction is among the most important provisions of the Subdivision Regulations.¹ These installations are essential to protect the health and safety of the future residents of the subdivision, the larger neighborhood, as well as the community. This requirement also will combat excessive or premature subdividing and land speculation, and the many evils resulting therefrom, such as losses to gullible purchasers, blight, depreciation of property values, tax defaults, and onerous burdens on the public treasury.

It is recognized in the Regulations that exceptional situations may give rise to practical difficulty or undue hardship. In such cases, the Planning Board may vary the rules to relieve such hardship or difficulty, provided the relief may be granted without substantial detriment to the public good or without impairing the desirable general development of the community.

The Regulations, if effectively enforced, are an important tool in the hands of the Board - not alone for coordinating all new subdivisions with the Master Plan, but also for accomplishing some of its proposals. In presently undeveloped areas, the right-of-ways needed for future thoroughfares or highways, or the strips necessary for the widening of existing ones, can be secured in most cases without cost to the public, and usually at little cost, if any, to the subdivider.

Subdivision control, while not so dramatic or impressive as a major public improvement, should prove to be one of the most effective and beneficial instruments for achieving the desirable future development of the community - when consistently and intelligently applied in accord with the Comprehensive Master Plan.

¹In order that this requirement may not work a hardship on the developer of a large tract, the Regulations permit him to limit installation of improvements to a portion of the subdivision - no matter how small - provided this conforms with the preliminary plat of the whole subdivision as tentatively approved.

CAPITAL IMPROVEMENT PROGRAM

The Master Plan for Lansing is a long-range plan, designed for the estimated population of 20 years or so hence - including the capital improvements likely to be needed to serve adequately the anticipated population. These capital improvements - "public works" or "public improvements" - include streets, parks, playgrounds, schools, fire stations, etc.; and the funds needed for these facilities are referred to as capital expenditures.

The Capital Improvements Program consists of a comprehensive list of Master Plan improvements. It should be used in consideration of other necessary capital expenditures - such as for prospective extensions to the sewerage system, street lighting, and new items of equipment - with the view that the community should neither overreach its financial resources nor neglect to provide essential public improvements.

The broad purpose of a long-range capital improvements program is to further and facilitate the systematic, economical, and otherwise sound provision of needed public improvements, most of which are outlined in the Master Plan. Once the Master Plan has been prepared, the Capital Improvements Program is one of the major instruments used for the systematic and economical carrying out of the Plan. The Master Plan cannot of itself produce the better, more attractive and efficient community which it portrays. The achievements which may be realized and can be expected under the Plan are dependent on effective planning administration, including full use of the legal, financial, planning and administrative tools available for giving effect to its recommendations.

Like the Plan itself, the Capital Improvements Program must be adjusted to changes in conditions and developments which may justify or necessitate undertaking certain projects sooner, or even accelerating the entire program; or, on the other hand, the deferring of certain improvements to await conditions more favorable for their financing or for other reasons. Customarily, a capital works program is set up for a period of from five to 10 years, subject to annual review and adjustment in the light of changing conditions.

The Planning Board should initiate certain actions and procedures that will set the stage for, and facilitate carrying out the program of improvements and effectuating other features of the Master Plan. Initial steps, of a preparatory nature, include the following:

1. Agreement between the City and County, State and Federal highway agencies concerning the locations of highways within the city.
2. Agreement between the City and the Board of Education concerning division of responsibility for different recreation areas comprising the proposed recreational system, and on other matters of mutual concern.
3. Accurate delimitation of the properties that will need to be acquired for the right-of-ways of new sections of thoroughfares; for parks and playgrounds; and for new or enlarged school sites.
4. Establishment of mapped street lines or building set-back lines for highways, primary and secondary thoroughfares and parkways proposed to be opened or widened.

5. Designation of urban renewal or redevelopment areas and preparation of project plans for those areas subject to renewal or to be cleared and made available for new uses or development legislation.

6. Declaration of intent to acquire the properties needed for public improvements, to help preclude or discourage new construction or major reconstruction prior to public acquisition.

7. Securing of right-of-ways and sites, by means of subdivision control where possible, for new street connections and extensions and for parks and playgrounds in the as yet lightly developed or undeveloped sections.

It should again be noted that the Capital Improvements Program is not intended to be a rigid time schedule to be strictly followed in the carrying out of public works recommended in the Master Plan. As previously indicated, it is simply the present conception of the approximate desirable order of these projects. Obviously, conditions along the way not now foreseeable might well alter the desirable timing of any one of several improvements. As a matter of fact, certain improvements of a public nature are not set up in specific terms in the program, being considered either in a category beyond the term of the Plan, or not of primary City concern. Again the need for each of the projects in the program will necessarily have to be reviewed from year to year in the light of the previous year's progress and new conditions or developments, so that the program at all times will be thoroughly realistic and up-to-date.

APPENDIX

Table 2
LANSING'S POPULATION
1860 - 1958

	<u>POPULATION</u>	<u>INCREASE</u>	
		<u>Number</u>	<u>Per Cent</u>
1958 ¹	115,000	22,871	24.2
1950	92,129	13,326	17.0
1940	78,753	356	0.5
1930	78,397	21,070	36.8
1920	57,327	26,098	83.6
1910	31,229	14,744	89.4
1900	16,485	3,383	25.8
1890	13,102	4,783	57.5
1880	8,319	3,078	58.7
1870	5,241	2,167	70.5
1860	3,074	-	-

¹Estimated

SOURCE: U.S. Census, 1950

Table 3
POPULATION OF LANSING, FIVE TOWNSHIP AREA, INGHAM COUNTY,
MICHIGAN AND THE UNITED STATES: 1860-1950

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		City of Lansing	Five Town- ship Area	Ingham County	Michigan Urban	State of Michigan	United States
1950	POPULATION	92,129	158,293	172,941	4,099,007	6,371,766	150,697,361
	% Change ¹	17.0	36.2	32.4	18.6	21.2	14.5
1940	POPULATION	78,753	116,184	130,616	3,454,867	5,256,106	131,669,275
	% Change	0.5	12.6	12.0	4.6	8.5	7.2
1930	POPULATION	78,397	103,160	116,587	3,302,075	4,842,325	122,775,046
	% Change	36.8	51.4	43.0	47.3	32.0	16.1
1920	POPULATION	57,327	68,155	81,554	2,241,560	3,668,412	105,710,620
	% Change	83.6	74.2	52.8	68.9	30.5	14.9
1910	POPULATION	31,229	39,124	53,360	1,327,044	2,810,173	91,972,266
	% Change	89.4	68.3	34.0	39.3	16.1	21.0
1900	POPULATION	16,485	23,249	39,818	952,323	2,420,982	75,994,575
	% Change	25.8	12.7	5.7	30.4	15.6	20.7
1890	POPULATION	13,102	20,621	37,666	730,294	2,093,890	62,947,714
	% Change	57.5	30.8	11.8	80.1	27.9	25.5
1880	POPULATION	8,319	15,768	33,676	405,412	1,636,937	50,155,783
	% Change	58.7	41.3	33.3	70.4	38.2	30.1
1870	POPULATION	5,241	11,157	25,268	237,985	1,184,059	38,558,371
	% Change	70.5	56.3	44.9	138.7	58.1	22.6
1860	POPULATION	3,074	7,138	17,435	99,701	749,113	31,443,321

NOTE: The "Five Township Area" includes Lansing Twp., Meridian Twp., Delhi Twp., DeWitt Twp., and the cities of Lansing and East Lansing.

¹ Per cent change is from preceeding Census.

SOURCE: U.S. Census

Table 4

LANSING COMPARED WITH FOUR OTHER STATE CAPITALS

Population Statistics

	<u>1900</u>	<u>1910</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>
<u>LANSING</u> - Population	16,485	31,229	57,327	78,397	78,753	92,129
% Change	25.8	89.4	83.6	36.8	0.5	17.0
S.M.A. Population	39,818	53,360	81,554	116,587	130,616	172,941
% Change	5.7	34.0	52.8	43.0	12.0	32.4
City % of S.M.A.	41.4	58.5	70.3	67.2	60.3	53.3
 <u>RICHMOND</u> - Population	 85,050	 127,628	 171,667	 182,929	 193,042	 230,310
% Change	4.5	50.1	34.5	6.6	5.5	19.3
S.M.A. Population	133,961	172,364	211,135	239,288	262,919	328,050
% Change	11.3	38.7	22.4	13.3	9.9	24.8
City % of S.M.A.	63.5	74.0	81.3	76.4	73.4	70.2
 <u>NASHVILLE</u> - Population	 80,865	 110,364	 118,342	 153,866	 167,402	 174,307
% Change	6.2	36.5	7.2	30.0	8.8	4.1
S.M.A. Population	122,815	149,478	167,815	222,854	257,267	321,758
% Change	13.5	21.7	12.3	32.8	15.4	25.1
City % of S.M.A.	65.8	73.8	70.5	69.0	65.1	54.2
 <u>MADISON</u> - Population	 19,164	 25,531	 38,378	 57,899	 67,447	 96,056
% Change	42.7	33.2	50.3	50.9	16.5	42.4
S.M.A. Population	69,435	77,435	89,432	112,737	130,660	169,357
% Change	16.5	11.5	15.5	26.0	15.9	29.6
City % of S.M.A.	27.6	33.0	42.9	51.4	51.6	51.7
 <u>CHARLESTON</u> - Population	 11,099	 22,996	 39,608	 60,408	 67,914	 73,501
% Change	64.6	107.2	72.2	52.5	12.4	8.2
S.M.A. Population	86,683	133,360	180,027	229,717	276,247	322,072
% Change	36.9	53.8	35.0	27.6	20.3	16.6
City % of S.M.A.	12.8	17.2	22.0	26.3	24.6	22.8

NOTE: The S.M.A., Standard Metropolitan Area, by U.S. Census definition, is the area in and around a central city of 50,000 inhabitants or more. It is normally a county or a group of contiguous counties.

The S.M.A. of Lansing, Michigan is Ingham County, of Richmond, Virginia, is Chesterfield, and Henrico Counties, of Nashville, Tennessee, is Davidson County, of Madison, Wisconsin, is Dane County, of Charleston, West Virginia, is Fayette and Kanawha Counties.

Per Cent Change is the difference from the preceeding census.

SOURCE: U.S. Census

Table 5

LANSING COMPARED WITH FOUR OTHER STATE CAPITALS

General Statistics

	<u>Lansing Michigan</u>	<u>Richmond Virginia</u>	<u>Nashville Tennessee</u>	<u>Madison Wisconsin</u>	<u>Charleston W. Virginia</u>
Rank in Population (U.S.)	121	46	56	114	159
Total Population	92,129	230,310	174,307	96,056	73,501
Total Employed	39,189	102,750	73,712	42,739	31,906
% of Total Population	42.5	44.0	42.2	44.5	43.4
Manufacturing Estabs. (1947)					
Number	137	381	361	166	83
Value added by Mfg. (\$1,000)	305,118	285,599	120,442	80,299	20,110
Area (square mile)	14.1	37.1	22.0	15.4	9.6
Pop. per square mile	6,534	6,208	7,923	6,237	7,656
Population of Urbanized Area	134,052	257,995	258,887	110,111	130,914
City % of Urbanized Area	68.7	83.4	67.4	87.8	56.0
Age Groups					
% under 5	10.1	8.5	9.2	9.1	9.2
% 65 and over	8.0	7.9	8.4	7.4	6.9
Median age	30.8	32.8	30.5	28.1	31.7
Migration (lived different county in 1949)					
% of Population	5,475 5.9	59,820 26.0	44,065 25.3	23,225 24.2	19,250 26.2
Education (25 years & over)					
Median years completed	11.5	9.9	8.9	12.4	11.3
Less than 5 grades (%)	3.3	13.0	13.8	3.1	6.8
High school or more (%)	46.9	36.0	30.1	60.8	46.4
Incomes (1949)					
Median	4,097	3,283	2,446	3,989	3,621
% Less than \$2,000	10.7	25.4	38.8	12.7	20.9
\$5,000 or more	33.3	25.1	13.1	32.8	28.4

SOURCE: U.S. Census of Population, 1950; U.S. Census of Manufactures, 1947

Table 6

EMPLOYMENT STATUS OF PERSONS 14 YEARS OLD AND OVER FOR LANSING, 1950

Employment Status	CITY OF LANSING Total		MALE		FEMALE	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Persons 14 years old and over	71,146	100.00	34,087	100.00	37,059	100.00
Labor force	41,230	57.95	27,765	81.45	13,465	36.33
Civilian labor force	41,147	57.83	27,689	81.23	13,458	36.31
Employed	39,189	55.08	26,333	77.25	12,856	34.69
Private wage & salary workers	28,934	40.67	20,097	58.96	8,837	23.84
Government workers	6,964	9.79	3,622	10.62	3,342	9.02
Self-employed workers	3,219	4.52	2,579	7.57	640	1.73
Unpaid family workers	72	.10	35	.10	37	.10
Unemployed	1,958	2.75	1,356	3.98	602	1.62
Experienced workers	1,933	2.72	1,339	3.93	594	1.60
New workers	25	.03	17	.05	8	.02
Non-civilian labor force	83	.12	76	.22	7	.02
Not in labor force	29,916	42.05	6,322	18.55	23,594	63.67
Keeping house	19,265	27.08	179	.52	19,086	51.51
Unable to work	2,126	2.99	1,148	3.37	978	2.64
Inmates of Institutions	666	.94	483	1.42	183	.49
Others and not reported	7,859	11.04	4,512	13.24	3,347	9.03

SOURCE: U.S. Census, 1950

Table 7

MANUFACTURING EMPLOYMENT

Lansing and Michigan Urban, 1950

	LANSING				MICHIGAN URBAN			
	Male	Female	No.	%	Male	Female	No.	%
<u>Type of Manufacturing</u>								
Furniture, lumber, wood products	78	7	85	0.5	20,415	3,817	24,232	3.1
Primary metal industries	925	38	963	5.8	45,715	4,303	50,018	6.3
Fabricated metal industries	486	61	547	3.3	36,160	8,614	44,774	5.7
Machinery, except electrical	635	90	725	4.3	70,049	12,863	82,912	10.5
Electrical machinery, equipment and supplies	52	7	59	0.3	9,277	4,706	13,983	1.8
Motor vehicles and vehicle equipment	10,938	1,482	12,420	74.6	355,108	51,946	407,054	51.6
Transportation equipment	59	8	67	0.4	5,365	854	6,219	0.8
Other durable goods	217	28	245	1.5	18,346	6,175	24,521	3.1
Food and kindred products	386	77	463	2.8	25,973	8,878	34,851	4.4
Textile mill products	14	6	20	0.1	2,008	1,459	3,467	0.4
Apparel and fabricated textile products	11	12	23	0.1	1,691	4,196	5,887	0.8
Printing, publishing	600	226	826	5.0	21,240	5,655	26,895	3.4
Chemicals and allied products	111	21	132	0.8	19,134	4,875	24,009	3.1
Other non-durable goods	38	10	48	0.3	26,745	7,707	34,452	4.4
Not specified manufacturing industries	24	7	31	0.2	3,763	1,305	5,068	0.6
Total Manufacturing								
Total Manufacturing employment	14,574	2,080	16,654	100.0	660,989	127,353	788,342	100.0

SOURCE: U.S. Census of Population, 1950.

Table 8

OCCUPATIONAL COMPOSITION OF POPULATION

Persons 14 Years Old and Over By Major Occupational Groups

LANSING, MICHIGAN

	<u>Male</u>	<u>%</u>	<u>Female</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Professional Workers	2,870	10.9	1,776	13.8	4,646	11.9
Farmers & Farm Mgrs.	35	0.1	5	0.0	40	0.1
Proprietors, Mgrs., Off- icials except farm	2,249	8.6	337	2.6	2,586	6.6
Clerical and kindred	2,129	8.1	5,430	42.2	7,559	19.4
Sales workers	2,528	9.6	1,360	10.6	3,888	9.9
Craftsmen, foremen & kindred workers	5,621	21.4	202	1.6	5,823	14.9
Operatives & kindred workers	7,350	28.0	1,142	8.9	8,492	21.7
Domestic service workers	24	0.1	452	3.5	476	1.2
Service wkrs., exc. domestic	2,182	8.3	1,826	14.2	4,008	10.3
Farm laborers, unpaid and family workers	1	0.0	7	0.0	8	0.0
Farm laborers, exc. unpaid and farm foremen	47	0.2	9	0.1	56	0.1
Laborers, exc. farm & mine	1,005	3.8	33	0.3	1,038	2.6
Occupation not reported	236	0.9	283	2.2	519	1.3
Total 14 years old or over employed	26,277	100.0	12,862	100.0	39,139	100.0
Total 14 years old or over	34,087		37,059		71,146	

MADISON, WISCONSIN

	<u>Male</u>	<u>%</u>	<u>Female</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Professional Workers	4,788	18.4	3,141	18.9	7,929	18.5
Farmers & farm mgrs.	58	0.2	7	0.0	65	0.2
Proprietors, mgrs., officials, except farm	3,381	13.0	569	3.4	3,950	9.2
Clerical and kindred	2,120	8.1	6,268	37.6	8,388	19.6
Sales workers	2,612	10.0	1,304	7.8	3,916	9.2
Craftsmen, foremen & kindred workers	4,820	18.5	223	1.3	5,043	11.8
Operatives & kindred workers	3,876	14.9	1,416	8.5	5,292	12.4
Domestic service workers	50	0.2	752	4.5	802	1.9
Service workers, exc. domestic	2,771	10.6	2,814	16.9	5,585	13.1
Farm laborers, unpaid & family workers	13	0.0	0	0.0	13	0.0
Farm laborers, exc. unpaid & farm foremen	140	0.5	6	0.0	146	0.3
Laborers, exc. farm & mine	1,317	5.1	79	0.5	1,396	3.3
Occupation not reported	141	0.5	73	0.4	214	0.5
Total 14 years old or over employed	26,087	100.0	16,652	100.0	42,739	100.0
Total 14 years old or over	38,190		39,536		77,726	

(Continued on next page)

Table 8 (con't)

OCCUPATIONAL COMPOSITION OF POPULATION

Persons 14 Years Old and Over By Major Occupational Groups

MICHIGAN URBAN

	<u>Male</u>	<u>%</u>	<u>Female</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Professional Workers	106,399	8.2	60,511	12.4	166,910	9.4
Farmers & Farm Mgrs.	1,879	0.1	233	0.0	2,112	0.1
Proprietors, Mgrs., Officials except farm	131,121	10.2	18,077	3.7	149,198	8.4
Clerical and kindred	97,501	7.6	155,215	31.7	252,716	14.2
Sales workers	88,141	6.8	50,255	10.3	138,396	7.8
Craftsmen, foremen and kindred workers	291,195	22.6	8,481	1.7	299,676	16.8
Operatives & kindred workers	393,039	30.5	87,350	17.9	480,389	27.0
Domestic service workers	1,374	0.1	30,168	6.2	31,542	1.8
Service wks., exc. domestic	82,786	6.4	67,202	13.7	149,988	8.4
Farm laborers, unpaid & family workers	180	0.0	75	0.0	255	0.0
Farm laborers, exc. unpaid and farm foremen	2,358	0.2	372	0.1	2,730	0.2
Laborers, exc. farm & mine	80,846	6.3	4,241	0.9	85,087	4.8
Occupation not reported	13,506	1.0	6,926	1.4	20,432	1.1
Total 14 years old or over employed	1,290,325	100.0	489,106	100.0	1,779,431	100.0
Total 14 years old or over	1,678,750		1,717,956		3,396,706	

UNITED STATES URBAN

	<u>Male</u>	<u>%</u>	<u>Female</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Professional Workers	2,435,966	9.3	1,511,552	12.4	3,947,518	10.3
Farmers & farm mgrs.	112,998	0.4	9,190	0.1	122,188	0.3
Proprietors, mgrs., off- icials, except farm	3,406,188	13.0	518,584	4.2	3,924,772	10.2
Clerical and kindred	2,207,008	8.5	3,737,682	30.6	5,944,690	15.5
Sales workers	2,137,839	8.2	1,055,635	8.6	3,193,474	8.3
Craftsmen, foremen & kindred workers	5,552,570	21.2	198,193	1.6	5,750,763	15.0
Operatives & kindred workers	5,709,829	21.8	2,384,662	19.5	8,094,491	21.1
Domestic service workers	52,924	0.2	1,011,504	8.3	1,064,428	2.8
Service wks., exc. domestic	1,996,485	7.6	1,506,092	12.3	3,502,577	9.1
Farm laborers, unpaid & family workers	6,735	0.0	2,926	0.0	9,661	0.0
Farm laborers, exc. unpaid and farm foremen	159,638	0.6	22,245	0.2	181,883	0.5
Laborers, exc. farm & mine	2,142,428	8.2	93,014	0.8	2,235,442	5.8
Occupation not reported	267,510	1.0	166,150	1.4	433,660	1.1
Total 14 years old or over employed	26,188,118	100.0	12,217,429	100.0	38,405,547	100.0
Total 14 years old or over	35,627,395		38,622,471		74,249,866	100.0

SOURCE: U.S. Census of Population, 1950

Table 9
POPULATION PROJECTIONS
1950-1980

		City of Lansing ¹	Lansing Ur- banized Area ²	Five Town- ship Area ³	Ingham County	State of Michigan ⁴	United States ⁴
1950		92,129	134,052	158,293	172,941	6,371,766	150,697,361
1955	High	103,100	153,100	183,500	200,100		
	Middle	102,650	152,800	183,100	199,700	7,072,300	163,080,000
	Low	102,200	152,500	182,700	199,300		
1960	High	117,700	172,300	208,000	226,300		
	Middle	116,000	170,800	206,150	224,200	7,772,800	175,465,000
	Low	114,300	169,300	204,300	222,100		
1965	High	126,800	193,000	234,800	254,900		
	Middle	123,250	188,850	229,800	249,250	8,473,300	187,847,600
	Low	119,700	184,700	224,800	243,600		
1970	High	136,400	215,900	265,200	285,200		
	Middle	130,500	209,350	256,350	276,200	9,173,800	200,232,500
	Low	124,600	202,800	247,500	267,200		
1975	High	145,100	242,100	297,900	322,400		
	Middle	137,750	231,650	284,550	307,900	9,874,300	212,615,000
	Low	130,400	221,200	271,200	293,400		
1980	High	150,000	254,400	314,100	339,400		
	Middle	145,000	250,000*	301,650	325,900	10,575,000	225,000,000
	Low	140,000	234,900	289,200	312,400		

¹ Including future annexations.

² Variable area. Projections derived from those for 5 Twp. Area

³ The townships of Delhi, Lansing, Meridian, DeWitt and Delta.

⁴ Projections of Michigan and United States from U.S. Census.

* Estimated land requirements based on this figure

SOURCE: Lansing Planning Department
U.S. Census

Table 12

MANUFACTURING

Lansing, Ingham County, Michigan

1929, 1939, 1947, 1954

Census Year	Area	Number of Establish- ments	Per Cent Change	Employees (Nov. 15)	Per Cent Change	Value Added By Manufact. (\$1,000)	Per Cent Change
1954	Lansing	137	-2.1	27,867	11.9	305,118	106.2
	Ingham County	209	15.5	29,394	13.7	318,340	105.3
	Michigan	12,711	28.5	1,001,630	2.7	8,707,194	67.4
1947	Lansing	140	32.1	24,898	98.6	147,996	*
	Ingham County	181	40.3	25,852	102.5	155,054	*
	Michigan	9,891	65.9	975,481	57.7	5,200,135	189.9
1939	Lansing	106	-18.5	12,539	33.6	*	*
	Ingham County	129	-18.4	12,768	-33.3	*	*
	Michigan	5,961	-10.8	618,702	3.3	1,794,016	-13.2
1929	Lansing	130	*	18,887	*	74,219	*
	Ingham County	158	*	19,132	*	75,868	*
	Michigan	6,686	*	599,179	*	2,067,344	*

NOTE: Per cent change from preceeding census

SOURCE: U.S. Census of Manufactures.

Table 13

EMPLOYMENT BY MAJOR INDUSTRY GROUPS

Persons 14 Years Old And Over

	1950					
	<u>Lansing</u>		<u>Ingham County</u>		<u>Mich. Urban</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Total Employed	39,189	100.0	65,615	100.0	1,779,431	100.0
Manufacturing	13,253	33.9	20,186	30.8	788,342	44.3
Retail Trade	7,099	18.1	11,118	16.9	283,170	15.9
Professional & Related Services	4,422	11.3	9,081	13.8	148,725	8.4
Government	3,395	8.7	4,605	7.0	60,635	3.4
Transport, Communication, Other Public Utilities	2,178	5.6	3,186	4.9	121,133	6.8
Construction	2,052	5.3	3,640	5.5	81,433	4.6
Personal Services	1,838	4.7	2,854	4.3	91,105	5.1
Finance, Insurance & Real Estate	1,709	4.4	2,556	3.9	56,398	3.2
Wholesale Trade	1,086	2.8	1,692	2.6	53,874	3.0
Business & Repairs Services	926	2.4	1,492	2.3	41,575	2.3
Amusement, Recreation Related Services	324	0.8	592	0.9	17,505	1.0
Agriculture, Forestry & Fishery	154	0.4	2,816	4.3	7,672	0.4
Mining	15	0.0	37	0.1	7,044	0.4
Not Reported	637	1.6	1,760	2.7	20,820	1.2

(continued on next page)

Table 13 (con't)

EMPLOYMENT BY MAJOR INDUSTRY GROUPS

Persons 14 Years Old And Over

	<u>Lansing</u>		<u>1940</u> <u>Ingham County</u>		<u>Mich. Urban</u>	
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
Total Employed	29,667	100.0	45,722	100.0	1,272,557	100.0
Manufacturing	10,286	34.7	14,696	32.1	565,534	44.4
Retail Trade	5,312	17.9	7,432	16.3	204,182	16.0
Professional & Related Services	2,438	8.2	4,240	9.3	92,992	7.3
Government	3,192	10.8	3,980	8.7	43,904	3.5
Transport, Communication, Other Public Utilities	1,584	5.3	2,121	4.6	79,292	6.2
Construction	1,182	4.0	2,029	4.5	49,310	3.9
Personal Services	2,399	8.1	3,442	7.5	98,357	7.7
Finance, Insurance & Real Estate	1,330	4.5	1,724	3.8	42,375	3.3
Wholesale Trade	688	2.3	994	2.2	31,542	2.5
Business & Repairs Services	578	1.9	834	1.8	24,892	2.0
Amusement, Recreation Related Services	247	0.8	363	0.8	11,707	0.9
Agriculture, Forestry & Fishery	137	0.5	3,397	7.4	6,097	0.5
Mining	25	0.1	41	0.1	7,215	0.6
Not Reported	279	0.9	429	0.9	15,158	1.2

SOURCE: Employment figures - U.S. Census
of Population
Percentages - City Planning Dept.

Table 14
LABOR FORCE AND EMPLOYMENT ESTIMATES FOR INGHAM COUNTY

Yearly Averages

	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
Total Labor Force	73,000	77,600	79,100	79,500	85,300	85,200	86,100	85,600	85,208
Farm Labor Force	3,500	3,400	3,300	3,200	3,100	3,000	2,900	2,900	2,775
Non-Farm Labor Force	69,500	74,200	75,800	76,300	82,200	82,200	83,200	82,700	82,433
Non-Farm Employment	65,600	72,300	73,700	73,800	80,500	78,400	80,700	78,100	78,125
Non-Farm Unemployment	3,900	1,900	2,100	2,500	1,700	3,800	2,500	4,600	4,308
Non-Farm Employment									
Manufacturing Industries	24,700	29,000	29,500	29,300	33,800	30,600	31,900	28,100	27,395
Non-Manufacturing Industries	36,600	38,900	39,800	40,100	42,300	43,300	44,300	45,400	46,050
Not Reported & Self-Employed	4,300	4,400	4,400	4,400	4,400	4,500	4,500	4,600	4,680

SOURCE: Michigan State Employment
Commission, January 1958

Table 15
MANUFACTURES
Lansing, Ingham County, Michigan 1929-1954

Lansing Per Cent of Ingham County

Year	Establishments	Employees (Nov. 15)	Value Added By Manufacture
1954	65.55	94.80	95.85
1947	77.35	96.31	95.45
1939	82.17	98.21	-
1929	82.28	98.72	97.83

Lansing Per Cent of the State of Michigan

1954	1.07	2.78	3.50
1947	1.42	2.55	2.85
1939	1.78	2.03	-
1929	1.94	3.15	3.59

Ingham County Per Cent of the State of Michigan

1954	1.64	2.93	3.66
1947	1.83	2.65	2.98
1939	2.16	2.06	-
1929	2.36	3.19	3.67

SOURCE: U.S. Census of Manufactures,
1954, 1947, 1939, 1929

Table 16

RETAIL SALES IN LANSING & INGHAM COUNTY

By Principle Retail Groups, 1948 and 1954

<u>Year and Area</u>		<u>Total of all Estab- lishments</u>	<u>Food Stores</u>	<u>Eating & Drinking</u>	<u>Automotive</u>	<u>General Merchandise</u>	<u>Apparel</u>	<u>All Other Establish- ments</u>
<u>1954</u>								
195	INGHAM COUNTY	\$251,097	\$52,852	\$15,319	\$54,556	\$33,734	\$15,355	\$79,281
	Per Cent of Total Sales	100.00	21.05	6.10	21.73	13.43	6.12	31.57
	LANSING	\$195,657	\$36,712	\$12,285	\$45,598	\$31,919	\$12,637	\$56,506
	Per Cent of Total Sales	100.00	18.76	6.28	23.31	16.31	6.46	28.88
	Per Cent of Ingham Sales	77.92	69.46	80.19	83.58	94.62	82.30	71.27
	<u>1948</u>							
	INGHAM COUNTY	\$177,964	\$38,473	\$11,365	\$36,821	\$23,191	\$12,751	\$55,363
	Per Cent of Total Sales	100.00	21.62	6.38	20.69	13.03	7.17	31.11
	LANSING	\$138,902	\$31,538	\$8,428	\$29,651	\$21,926	\$11,490	\$35,869
	Per Cent of Total Sales	100.00	22.71	6.07	21.35	15.78	8.27	25.82
	Per Cent of Ingham Sales	78.05	81.97	74.16	80.53	94.55	90.11	64.79
<u>INCREASE, 1954 over 1948</u>								
195	INGHAM COUNTY							
	Amount	\$73,133	\$14,379	\$3,954	\$17,735	\$10,543	\$2,604	\$23,918
	Per Cent	41.09	37.37	34.79	48.16	45.46	20.42	43.20
	LANSING							
	Amount	\$56,755	\$5,174	\$3,857	\$15,947	\$9,993	\$1,147	\$20,637
	Per Cent	40.86	16.32	45.76	53.78	45.58	9.98	57.53
	Per Cent of County Increase	77.61	35.98	97.55	89.92	94.78	44.05	86.28

NOTE: All sales are in \$1,000.00.

SOURCE: U.S. Census of Business, 1948 & 1954.

Table 17

RETAIL EMPLOYMENT AND PAYROLL IN LANSING AND INGHAM COUNTY

<u>Year & Area</u>	<u>Total of All Estab- lishments</u>	<u>Food Stores</u>	<u>Eating & Drinking</u>	<u>Automotive</u>	<u>General Merchandise</u>	<u>Apparel</u>	<u>All Other Establish- ments</u>
<u>1954</u>							
Ingham Co. Employees	8,722	928	1,354	1,143	1,947	680	2,670
% of Ingham Employees	100.00	10.64	15.52	13.11	22.32	7.80	30.61
Ingham Payroll (\$1,000)	\$29,836	\$3,453	\$3,431	\$5,519	\$5,044	\$2,217	\$10,172
% of Ingham Payroll	100.00	11.57	11.50	18.50	16.91	7.43	34.09
Lansing Employees	7,257	640	1,140	971	1,858	578	2,070
% of Ingham Employees	83.20	68.96	84.19	84.95	95.43	85.00	77.53
% of Total Lansing Employees	100.00	8.82	15.71	13.38	25.60	7.96	28.53
Lansing Payroll (\$1,000)	\$24,946	\$2,488	\$2,863	\$4,831	\$4,839	\$1,910	\$8,015
% of Ingham Payroll	83.61	72.05	83.45	87.53	95.94	86.15	78.79
% of Total Lansing Payroll	100.00	9.97	11.48	19.36	19.40	7.66	32.13
<u>1948</u>							
Ingham Co. Employees	8,187	1,143	1,365	976	1,437	677	2,589
% of Ingham Employees	100.00	13.96	16.67	11.92	17.55	8.27	31.63
Ingham Payroll (\$1,000)	\$22,698	\$3,727	\$2,562	\$3,303	\$3,527	\$1,685	\$7,894
% of Ingham Payroll	100.00	16.42	11.29	14.55	15.54	7.42	34.78
Lansing Employees	6,575	796	993	804	1,375	478	2,129
% of Ingham Employees	80.31	69.64	72.75	82.38	95.68	70.60	82.23
% of Total Lansing Employees	100.00	12.11	15.10	12.23	20.91	7.27	32.38
Lansing Payroll (\$1,000)	\$18,544	\$2,668	\$1,972	\$2,787	\$3,409	\$1,239	\$6,469
% of Ingham Payroll	81.70	71.58	76.97	84.38	96.65	73.53	81.95
% of Total Lansing Payroll	100.00	14.39	10.63	15.03	18.38	6.68	34.89
<u>Change 1954 Over 1948</u>							
Ingham County Employees	535	-215	-11	167	510	3	81
Ingham Payroll (\$1000)	\$7,138	-\$274	869	\$2,216	\$1,517	\$532	\$2,278
Lansing Employees	682	-156	147	167	483	100	-59
Lansing Payroll (\$1,000)	\$6,402	-\$180	\$891	\$2,044	\$1,430	\$671	\$1,546

SOURCE: U.S. Census of Business, Retail Trade, 1954 & 1948.

Table 18
RETAIL ESTABLISHMENTS, SALES & EMPLOYMENT
Lansing, Ingham County, State Of Michigan
1929, 1939, 1948, 1954

<u>Year and Area</u>	<u>Establishments</u>	<u>Total Sales (\$1,000)</u>	<u>Total Employees</u>
<u>1954</u>			
LANSING	1,094	\$195,657	8,957
Per cent change	14.3	40.9	8.2
INGHAM COUNTY	1,606	\$251,097	11,006
Per cent change	4.5	41.1	5.7
MICHIGAN	67,995	\$8,167,632	324,684
Per cent change	3.0	39.5	6.3
<u>1948</u>			
LANSING	957	\$138,902	8,276
Per cent change	-13.9	198.1	42.0
INGHAM COUNTY	1,537	\$177,964	10,410
Per cent change	-2.5	222.2	53.0
MICHIGAN	65,990	\$5,854,445	305,580
Per cent change	-2.1	221.5	54.3
<u>1939</u>			
LANSING	1,112	\$46,591	5,829
Per cent change	13.4	-16.5	32.3
INGHAM COUNTY	1,576	\$55,230	6,805
Per cent change	16.4	-14.7	N/A
MICHIGAN	67,414	\$1,820,798	198,018
Per cent change	20.4	-18.2	22.2
<u>1929</u>			
LANSING	981	\$55,801	4,406
INGHAM COUNTY	1,354	\$64,724	N/A
MICHIGAN	55,985	\$2,226,398	161,245

SOURCE: U.S. Census of Business

Table 19

WHOLESALE TRADE

Lansing, Ingham County, Michigan

1929, 1939, 1948, 1954

		<u>Establishments</u>		<u>Sales</u>		<u>Employees</u>		
		<u>Number</u>	<u>% Change</u>	<u>Total (\$1,000)</u>	<u>% Change</u>	<u>Number</u>	<u>% Change</u>	
198	1954	Lansing	231	38.3	203,389	58.5	2,630	35.2
		Ingham Co.	287	42.1	226,158	60.2	2,944	40.9
		Michigan	9,441	24.2	10,086,684	57.1	99,793	20.0
	1948	Lansing	167	15.2	128,331	299.1	1,945	55.1
		Ingham Co.	202	20.2	141,178	314.6	2,089	54.3
		Michigan	7,600	10.0	6,422,253	233.4	83,138	59.0
	1939	Lansing	145	46.4	32,153	-27.6	1,254	-5.2
		Ingham Co.	168	N/A	34,051	N/A	1,354	N/A
		Michigan	6,908	31.0	1,926,474	-11.3	52,292	10.3
	1929	Lansing	99	-	44,411	-	1,323	-
		Ingham Co.	N/A	-	N/A	-	N/A	-
		Michigan	5,272	-	2,171,408	-	47,406	-

SOURCE: U.S. Census of Business

Table 20

SELECTED SERVICES - MICHIGAN, INGHAM COUNTY, LANSING

	Business	1954			1948		
		Michigan	Ingham	Lansing	Michigan	Ingham	Lansing
199	TOTAL ESTABLISHMENTS	29,699	743	524	26,576	503	341
	Total Sales (\$1,000)	1,015,601	22,100	17,682	539,343	12,238	10,375
	Total Employees	92,783	2,651	2,214	86,657	2,100	1,797
	PERSONAL SERVICES	13,072	361	267	13,777	301	223
	Sales (\$1,000)	262,605	8,496	6,902	191,790	5,310	4,476
	Employees	33,648	1,115	941	32,699	919	N/A
	BUSINESS SERVICES	2,843	92	66	1,117	21	18
	Sales (\$1,000)	326,286	4,093	3,565	81,920	949	907
	Employees	15,729	383	359	13,499	237	N/A
	AUTOMOBILE REPAIR	3,517	84	57	3,719	71	40
	Sales (\$1,000)	99,248	2,133	1,757	61,647	1,571	1,278
	Employees	8,298	226	197	6,557	138	N/A
	MISCELLANEOUS REPAIR	4,228	97	71	2,763	53	34
	Sales (\$1,000)	68,810	1,226	909	31,911	505	406
	Employees	4,241	86	67	3,117	60	N/A
	AMUSEMENT, RECREATION	3,294	85	55	2,623	39	18
	Sales (\$1,000)	165,003	4,023	2,774	93,408	2,143	1,593
	Employees	18,395	562	387	17,371	415	294
	HOTELS, MOTELS, COURTS	2,745	24	8	2,577	18	8
	Sales (\$1,000)	93,649	2,129	1,775	78,667	1,760	1,715
	Employees	12,472	279	263	13,414	331	326

Note: Sales are for entire year.
Employees are those on payrolls as of November 15.

SOURCE: U.S. Census of Business.

Table 22
EXISTING LAND USE - 1954

City of Lansing

	Total Land Use		Per Cent of	Acres Developed
	Acres	Per Cent	Developed Land	Per 100 Persons
Total Area	9461.61	100.00	-	-
Residential (Total) ✓	3095.81	32.72 ✓	37.54	3.10
Single Family	2592.42	27.40	31.43	2.59
Two Family	331.33	3.50	4.02	.33
3-4 Family	120.00	1.27	1.46	.12
5 or more Family	52.06	0.55	0.63	.05
Commercial (Total) ✓	299.71	3.17 ✓	3.64	.30
Offices & Home Occupations	37.76	0.40	0.46	.04
General Business	111.32	1.18	1.35	.11
Intensive Business	150.63	1.59	1.83	.15
Industrial (Total) ✓	854.60	9.03 ✓	10.36	.85
Light & Warehouses	344.23	3.64	4.17	.34
Heavy	510.37	5.39	6.19	.51
Cemetery ✓	87.73	0.43 ✓	1.06	.09
Utilities ✓	441.73	4.67 ✓	5.36	.44
Schools (Total) ✓	282.03	2.98 ✓	3.42	.28
Public	268.10	2.83	3.25	.27
Parochial	13.93	0.15	0.17	.01
Public & Quasi-Public Buildings ✓	321.61	3.40 ✓	3.90	.32
Recreation ✓	984.98	10.41 ✓	11.94	.98
River ✓	193.50	2.05	-	-
Streets & Alleys ✓	1878.55	19.85 ✓	22.78	1.88
Vacant Land (Total) ✓	1021.36	10.79	-	-
Subdivided	577.25	6.10	-	-
Acreage	444.11	4.69	-	-

Drillman's was identified as addition

SOURCE: Lansing Planning Department
Field Survey - 1954

Table 23

LAND USE IN ZONING DISTRICTS, 1954

City of Lansing, Michigan

ZONING DISTRICTS	Total Acres Zoned	LAND USE											
		One Family	Two Family	Apts.	Commercial	Light Ind.	Heavy Ind.	Cemetery	Utilities	Schools	Pub & Semi Pub Bldg.	Recreation	Vacant
A One Res.	2410.36	951.69	23.33	3.50	17.23	36.27	3.75	87.73	55.32	164.00	30.91	477.24	559.39
B One Res.	2112.81	1101.28	58.80	13.70	11.32	15.94	16.70	-	52.63	76.20	129.72	422.47	214.68
C Two Res.	840.13	351.29	141.44	73.08	33.69	8.86	12.32	-	28.97	28.53	85.23	30.32	46.40
D-M Multiple	185.77	57.46	36.49	27.11	2.95	1.36	-	-	-	2.05	35.07	15.33	7.95
D Apartment	183.76	43.74	30.83	28.82	20.65	2.10	-	-	7.02	8.99	16.86	10.47	14.28
E Apt. Shop	16.34	1.30	2.25	1.26	9.05	-	-	-	-	-	1.25	-	1.23
E-1 Drive In Shop	13.66	1.92	-	0.80	5.20	-	-	-	-	-	-	-	5.74
F Commercial	166.92	31.58	8.82	5.86	63.31	3.62	2.31	-	28.38	1.63	5.99	-	15.42
F-1 Commercial	66.29	5.08	5.23	3.12	42.20	5.04	0.78	-	-	0.63	3.07	-	1.14
G Business	90.78	1.81	1.84	2.91	55.40	10.31	-	-	5.09	-	2.68	3.50	7.24
G-2 Whsl.	16.95	1.74	-	-	0.23	1.98	-	-	-	-	-	-	13.00
H Light Ind.	540.45	29.88	18.66	11.26	19.39	179.78	91.91	-	91.56	-	5.93	25.65	66.43
I Heavy Ind.	700.36	9.41	2.86	0.81	7.76	76.85	374.52	-	172.76	-	4.28	-	51.11
J Parking	44.98	4.24	0.78	0.46	11.33	2.12	8.08	-	-	-	0.62	-	17.35
Totals	7389.56	2592.42	331.33	172.06	299.71	344.23	510.37	87.73	441.73	282.03	321.61	984.98	1021.36

NOTES: Unzoned "Park Land" has been recorded in the classification of the predominant adjacent zoning. Unzoned "Streets and Alleys" occupy 1878.55 acres. Rivers occupy 193.50 acres.

SOURCE: Lansing Planning Department

Table 24
DEVELOPED LAND USE, 1956
Lansing Urbanized Area

	Developed Land Outside City			Developed Land Including City		
	Acres	Per Cent	Acres Per 100 Persons	Acres	Per Cent	Acres Per 100 Persons
RESIDENTIAL	6854.0	41.45	13.60	9950.4	40.15	6.63
Single-family	6803.2	41.14	13.50	9395.6	37.91	6.26
Multi-family	50.8	0.31	0.10	554.8	2.24	0.37
COMMERCIAL	264.7	1.60	0.52	564.4	2.28	0.38
INDUSTRIAL	456.2	2.76	0.90	1310.8	5.29	0.87
Light	271.9	1.65	0.54	616.1	2.49	0.41
Heavy	184.3	1.11	0.36	694.7	2.80	0.46
PUBLIC & QUASI PUBLIC	6242.5	37.75	12.39	8360.5	33.73	5.57
Schools	224.4	1.36	0.45	506.4	2.04	0.34
Open-space	1647.5	9.96	3.27	2720.2	10.98	1.81
Buildings	3998.7	24.18	7.93	4320.3	17.43	2.88
Utilities	371.9	2.25	0.74	813.6	3.28	0.54
STREETS & ALLEYS	2719.4	16.44	5.40	4597.9	18.55	3.07
TOTAL DEVELOPED	16536.8	100.00	32.81	24784.0	100.00	16.52

NOTE: The population of the Lansing Urbanized Area in 1954 was estimated to be 150,000, composed of 99,600 in the City of Lansing and 50,400 outside of Lansing but within the urbanized area.

SOURCE: Field Survey, Lansing Planning Department 1954-1956.

Table 25

CHANGES IN SELECTED LAND USES IN THE CITY OF LANSING

	Acres	Per Cent of Total Land	1937		Acres	Per Cent of Total Land	Per Cent Developed Land	1954		Developed Area/100 Persons Acres % Chg.**
			Per Cent Developed Land	Developed Area/100 Persons (Acres)				Per Cent Developed Land	Developed Area/100 Persons (Acres)	
RESIDENTIAL (Total)	2114.6 ✓	28.33	38.00	2.69	3095.81	33.40	37.54	3.11	15.6	
Single Family	1962.4 ○	26.29	35.26	2.50	2592.42	27.97	31.43	2.61	4.4	
Multi- Family	152.2 ○	2.04	2.74	0.19	503.39	5.43	6.11	0.50	163.2	
COMMERCIAL (Total)	131.2 ✓	1.76	2.36	0.17	299.71	3.23	3.64	0.30	76.5	
INDUSTRIAL (Total)	542.9	7.27	9.76	0.69	854.60	9.22	10.36	0.86	24.6	
Light Ind.	198.1 ✓	2.65	3.56	0.25	344.23	3.71	4.17	0.35	40.0	
Heavy Ind.	344.8 ✓	4.62	6.20	0.44	510.37	5.51	6.19	0.51	15.9	
PUBLIC AND QUASI-PUBLIC (Total)*	1193.4	15.99	21.44	1.51	2118.08	22.86	25.68	2.12	40.4	
Schools	-	-	-	-	282.03	3.04	3.42	0.28	-	
Open Space	535.2	7.17	9.62	0.69	1072.71	11.58	13.00	1.08	58.8	
Buildings	465.3	6.23	8.36	0.59	321.61	3.47	3.90	0.32	45.8	
Utilities	192.9	2.59	3.46	0.25	441.73	4.77	5.36	0.44	83.3	

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only
not really

Table 25 (con't)

			<u>1937</u>	Developed			<u>1954</u>	Developed	Developed
	Acres	Per Cent of Total Land	Per Cent Developed Land	Area/100 Persons (Acres)	Acres	Per Cent of Total Land	Per Cent Developed Land	Area/100 Persons (Acres)	Area/100 Persons Acres % Chg. **
STREETS & ALLEYS	1582.9	12.21	28.44	2.01	1878.55	20.27	22.78	1.89	6.3
VACANT LAND	1899.3	25.44	-	-	1021.36	11.02	-	-	-
TOTAL LAND	7464.3	100.00	100.00	7.08	9268.11	100.00	100.00	8.28	-16.9
TOTAL RIVERS	195.2	-	-	-	193.50	-	-	-	-

* Includes Public and Parochial Schools

** Developed Area Per Cent Change: Is the change in acres per 100 persons from 1937 to 1954

NOTE: The 1937 population is estimated to be 78,646.
The 1954 population is estimated to be 99,600.
Developed land is total land minus vacant land.

SOURCE: Lansing City Plan-1938,
Harland Bartholomew and
Associates.
Lansing Planning Depart-
ment, Field Survey

Table 27

HOUSING CHARACTERISTICS

Lansing Compared With Ingham County, The State of Michigan

And Selected Michigan Cities, 1950

	LANSING	INGHAM COUNTY	MICHIGAN URBAN	BATTLE CREEK	FLINT	GRAND RAPIDS	JACKSON
<u>All dwelling units</u>	28,887	50,953	1,312,531	15,609	49,258	55,362	16,451
Median number of rooms	4.6	4.3	4.7	4.6	4.5	5.0	5.1
One dw. unit, det. strct. (%)	65.8	70.5	60.8	57.1	67.4	54.8	64.6
Built 1940 or later (%)	13.2	23.0	20.8	8.2	13.9	7.7	4.1
With hot running water, priv. toilet-bath, not delap. (%)	79.0	67.1	83.5	73.0	76.9	79.5	74.2
<u>Occupied dwelling units</u>							
Median no. persons per D.U.	2.9	2.9	5.1	2.8	3.0	2.9	2.7
With 1.01 or more persons per room (%)	6.7	11.3	10.2	7.8	9.7	5.8	10.1
Occupants non-white (%)	2.4	1.6	7.2	6.5	7.4	3.0	5.6
Owner-occupied (%)	64.4	66.3	62.8	59.9	68.0	61.2	63.8
With central heating (%)	87.0	74.8	77.8	85.0	83.9	78.2	83.0
With mech. refrig. (%)	88.8	85.0	90.0	88.4	92.8	91.3	88.1
<u>Owner-occupied non-farm</u>							
Per cent mortgaged ¹	46.2	46.5	46.5	45.0	47.9	39.6	38.7
Median value of one- dwelling unit structures	\$7,336	\$7,042	\$8,182	\$7,324	\$6,970	\$8,498	\$6,762
<u>Renter-occupied non-farm</u>							
Median rent per month	\$44.65	\$42.38	\$48.02	\$44.85	\$46.66	\$32.28	\$41.60

¹ 1 to 4 dwelling unit structures without business

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Table 27 (con't)
HOUSING CHARACTERISTICS
Lansing Compared With Ingham County, The State of Michigan
And Selected Michigan Cities, 1950

	<u>LANSING</u>	<u>INGHAM COUNTY</u>	<u>MICHIGAN URBAN</u>	<u>BATTLE CREEK</u>	<u>FLINT</u>	<u>GRAND RAPIDS</u>	<u>JACKSON</u>
<u>All dwelling units</u>	28,887	50,953	1,312,531	15,609	49,258	55,362	16,451
<u>Water supply</u>							
Hot and cold piped running water in structure (%)	91.8	80.0	91.0	88.0	89.5	88.2	85.5
Only cold piped running water in struct. (%)	6.9	11.3	7.3	9.9	8.5	10.1	11.6
No piped running water (%)	0.5	6.2	1.4	1.2	0.8	0.8	1.3
<u>Toilet Facilities</u>							
Flush toilet in struct. exclusive use (%)	89.7	79.7	92.2	84.2	87.9	93.1	87.6
Flush toilet in struct. shared (%)	8.2	5.3	4.1	4.4	8.0	4.8	8.1
Other toilet facilities (incl. priv) (%)	1.3	13.4	3.1	4.4	2.7	0.4	1.9
No toilet (%)	0.1	0.7	0.6	0.3	0.4	0.2	0.9
<u>Bathing Facilities</u>							
Installed both or shower exclusive use (%)	85.8	76.2	88.7	79.7	85.2	87.6	81.5
Installed both or shower shared (%)	8.2	5.3	4.2	10.8	7.1	5.0	8.2
No both or shower (%)	5.0	17.4	7.2	8.4	7.3	5.6	8.6
Dilapidated dwell. units (%)	1.7	4.2	4.5	5.4	4.4	4.4	6.0

SOURCE. U.S. Census of Housing.

Table 28

RESIDENTIAL SUBDIVISIONS

The Lansing Metropolitan Area, 1945 - 1958

	<u>Totals</u>		<u>City of Lansing</u>		<u>Lansing Twp.</u>		<u>Meridan Twp. 30 Secs.</u>		<u>Delhi Twp. 30 Secs.</u>		<u>Delta Twp. 18 Secs.</u>		<u>Dewitt Twp. 18 Secs.</u>	
	Subs	Lots	Subs	Lots	Subs	Lots	Subs	Lots	Subs	Lots	Subs	Lots	Subs	Lots
1945	3	239	-	-	1	20	2	219	-	-	-	-	-	-
1946	17	896	4	180	5	369	6	272	-	-	-	-	2	75
1947	12	295	2	53	3	65	7	177	-	-	-	-	-	-
1948	12	350	-	-	9	305	1	11	2	34	-	-	-	-
1949	8	164	2	48	4	97	1	10	1	9	-	-	-	-
1950	21	839	7	393	6	224	4	154	4	68	-	-	-	-
1951	19	608	10	393	4	52	3	133	2	30	-	-	-	-
1952	17	437	7	191	5	108	1	17	4	121	-	-	-	-
1953	27	687	4	191	12	227	3	88	6	129	-	-	2	52
1954	39	1,427	4	77	11	442	10	424	8	160	5	196	1	128
1955	61	1,821	7	102	22	763	15	597	11	232	5	103	1	24
1956	48	1,773	10	538	11	319	11	297	7	258	5	219	4	142
1957	24	863	6	214	6	166	7	244	1	38	5	201	-	-
1958	30	995	9	388	9	285	3	42	5	111	3	108	1	61
Totals	338	11,394	72	2,768	107	3,442	74	2,685	51	1,190	23	827	11	482

SOURCE: Auditor General's Office
State of Michigan

RECOMMENDED SHOPPING

TYPES OF CLASSIFICATIONS	CONVENIENCE SHOPPING CENTER	NEIGHBORHOOD SHOPPING CENTER
1. Desirable service standards (a) Service Area (b) Driving Time (c) Sales service area* (d) Population necessary	less than 1/2 mile 5 minutes (walking) \$1,500,000 Up to 2,000 persons	1/2 mile - 3/4 mile 5 minutes \$48,000,000 5-8,000 persons
2. Gross sales necessary per year (a) Shopping center (b) Primary store	\$300,000 \$200,000	\$1,750,000-2,000,000 \$1,000,000-1,200,000
3. Gross sales floor area recommended (a) Shopping center (b) Primary store	5,000 sq. ft. 2,000 sq. ft.	15-20,000 sq. ft. 8-12,000 sq. ft.
4. Primary Store	Grocery	Superette
5. Other stores recommended. (each higher classification of shopping center includes types of stores listed in lower classifications)	Drug store Shoe Repair Dry Cleaner-Laundry Barber-Beauty Shop	Dairy Bar Bakery Gas Station Variety Store
6. Number of stores desirable	3-5 Stores	5-10 Stores
7. Shopping center acreage desirable	1-2 Acres	2-4 Acres
8. Parking ratio recommended	1:1 to 2:1	2:1 to 3:1
9. Distance from competing shopping centers	1/2 mile	1 mile
10. Shopping center cost	\$500,000	\$2-3,000,000

CENTER STANDARDSSUB-COMMUNITY
SHOPPING CENTERCOMMUNITY
SHOPPING CENTERREGIONAL
SHOPPING CENTER

1-1 1/4 miles
10 minutes
\$15-30,000,000
15-30,000 persons

1 1/2-2 miles
20 minutes
\$40-80,000,000
40-80,000 persons

3-5 miles
30 minutes
\$100-250,000,000
100-250,000 persons

2,500,000-3,500,000
1,400,000-1,600,000

\$5-7,000,000
\$2-2,500,000

\$10-15,000,000
\$3-5,000,000

40-60,000 sq. ft.
12-20,000 sq. ft.

100-150,000 sq. ft.
40-50,000 sq. ft.

200-500,000 sq. ft.
100-200,000 sq. ft.

Supermarket

Jr. Department Store

Department Store

Hardware
Children's Wear
Men's Wear
Women's Wear
Restaurant
Radio & TV
Shoe Store
Branch Bank

Supermarket (2nd)
Drug Store (2nd)
Men's Wear (2nd)
Women's Wear (2nd)
Restaurant (2nd)
Shoe Store (2nd)
Appliances
Music Store
Furniture
Gift Shop
Candy Store

Men's Wear (3rd)
Women's Wear (3rd)
Shoe Store (3rd)
Restaurant (3rd)
Variety Store (2nd)
Branch Bank (2nd)
Book Store
Floor Covering
Jewelry Store
Bowling Alley
Theater
Business Office

10-20 Stores

20-35 Stores

35-60 Stores

5-10 Acres

15-25 Acres

40-60 Acres

3:1 to 4:1

3:1 to 4:1

4:1 to 5:1

2-3 miles

3-4 miles

8 miles

\$3-5,000,000

\$5-10,000,000

\$10-20,000,000

* Sales service area - that area surrounding the proposed shopping center which holds the population with an earning power aggregate enough to support such a center.

SOURCE: Lansing Planning Department

Table 30

MOTOR VEHICLE REGISTRATION, PASSENGER & COMMERCIAL

Ingham County And The State of Michigan 1920 - 1980

	INGHAM COUNTY			STATE OF MICHIGAN	
	<u>Number</u>	<u>% Change</u>	<u>% of State</u>	<u>Number</u>	<u>% Change</u>
1920	11,584		2.80	412,717	
1925	29,603	155.6	2.99	990,709	140.0
1930	37,426	26.4	2.83	1,330,582	34.3
1935	35,102	- 6.6	2.83	1,242,022	- 6.6
1940	41,691	18.8	2.74	1,522,365	22.6
1945	39,660	- 4.9	2.77	1,430,881	- 6.0
1950	65,334	64.7	2.79	2,339,459	63.4
1955	83,989	28.6	2.78	3,021,111	29.1
1960 ¹	96,300	14.6	2.82	3,417,000	13.1
1965	108,700	12.9	2.85	3,812,700	11.6
1970	121,200	11.5	2.88	4,208,400	10.4
1975	134,000	10.5	2.91	4,604,200	9.4
1980	147,000	9.7	2.94	5,000,000	8.6

¹ Estimates for 1960-1980 by the Michigan State Highway Dept. and Lansing City Planning Dept.

SOURCE: Michigan Department of State

Table 31

INTER-CITY COACH LINE COMPANY, INC.

Lansing, Michigan

	<u>TOTAL REVENUE PASSENGERS</u>	<u>TOTAL MILES DRIVEN</u>	<u>PASSENGERS PER VEHICLE MILE</u>	<u>GROSS INCOME</u>	<u>NET INCOME</u>
1942	10,319,529	1,889,299	5.46	\$541,417	+123,199
1943	13,308,410	1,929,333	6.89	693,237	+90,026
1944	13,067,956	1,692,429	7.72	670,251	+45,107
1945	11,778,033	1,603,087	7.34	648,674	+43,604
1946	12,867,682	1,723,376	7.46	677,554	+76,253
1947	12,972,017	1,838,716	7.05	694,824	+48,314
1948	11,799,349	1,849,235	6.38	719,718	-40,603
1949	10,125,673	1,871,687	5.40	782,812	-13,960
1950	9,586,312	1,827,454	5.24	769,281	+11,758
1951	8,290,543	1,746,033	4.74	762,855	-20,981
1952	6,503,943	1,564,299	4.15	836,924	+36,355
1953	5,873,033	1,457,504	4.02	791,235	-1,288
1954	4,657,464	1,374,795	3.38	727,375	-27,792
1955	4,232,691	1,363,192	3.10	669,619	-21,311
1956	3,555,384	1,200,688	2.96	545,236	-57,940
1957	2,430,266	860,100	282	440,542	+9,264

SOURCE: Inter-City Coach Lines, Incorporated

Table 32

LANSING SUBURBAN LINES, INC.

Lansing, Michigan

	<u>TOTAL REVENUE PASSENGERS</u>	<u>TOTAL MILES DRIVEN</u>	<u>PASSENGERS PER VEHICLE MILE</u>
1948	622,339	383,227	1.62
1949	569,220	389,196	1.46
1950	539,016	375,628	1.41
1951	548,503	397,289	1.38
1952	503,398	404,420	1.24
1953	400,609	401,438	1.00
1954	366,498	329,707	1.11
1955	352,834	319,987	1.10
1956	371,840	341,987	1.08
1957	418,456	341,664	1.22

SOURCE: Lansing Suburban Lines, Inc.

Table 33
AIRPORT USE
Capitol City Airport
Lansing, Michigan

	<u>Air Carrier Passengers</u>	<u>Pounds Air Mail</u>	<u>Pounds Air Express</u>	<u>Pounds Air Freight</u>	<u>Air Carrier Landings & Takeoffs</u>
1948	13,286	70,705	382,658	435,339	*
1949	22,058	112,340	300,438	480,907	*
1950	29,450	136,274	399,627	1,080,329	*
1951	30,838	146,436	302,092	174,630	*
1952	43,181	169,739	357,495	216,803	*
1953	57,030	201,306	431,981	322,722	*
1954	74,356	239,447	388,270	284,072	17,805
1955	78,956	265,330	620,439	370,113	17,453
1956	71,849	275,648	488,534	338,998	17,070
1957	82,105	280,027	511,884	416,086	14,206
1958	71,169	293,645	480,411	304,252	12,967

NOTE: Capital Airlines carries approximately 90.5% of the air passengers, 74.5% of the airmail, 80.9% of the air express and 100% of the air freight.

The figures for passengers, mail, express and freight are incoming and outgoing.

North Central Airlines began operations in Lansing in April, 1953.

Capital Airlines was on strike for a portion of 1958.

SOURCE: Michigan Department of Aeronautics.

Table 34

RECOMMENDED PUBLIC SCHOOL STANDARDS

City of Lansing & Urbanized Area

Factor	Primary Elementary School	Elementary School	Junior High School	Senior High School
Grades Served	K-3	K-6	7-9	10-12
Service Radius	Neighborhood Segment (Less than 1/2 mile)	Neighborhood (1/2 Mile)	Sub-community (1-1 1/2 miles)	Community (1 1/2-2 miles or more)
Capacity (pup-ils per School)	As required to handle given situation (Not more than 250 ordinarily)	400-600	800-1200	1200-1600
Pupils Per Classroom	25-30	25-30	30-35	30-40
Classrooms Per School	As needed but ordinarily not to exceed 10	20	25-40, Variations due to Gym, Study Hall, etc.	40-65, Variation due to Gym, Home Economics, Driver Education, Shop, Dramatics, etc.
Desirable School Site Acreage (In-cluding Park & Playground)	2 Acres plus 1 acre per 100 pupils	5 Acres plus 1 acre per 100 pupils	25-35 Acres	40-75 Acres
Minimum School Site Acreage (Including Park & Playground)	3 Acres	5 Acres	10-15 Acres	20 Acres
Location Factors	Away from heavily traveled streets School justified due to excessive walking distance, heavy enrollment, or where neighborhood is divided by major thoroughfare.	In center of neighborhood whenever possible and away from heavily traveled streets. Joint park-school advisable.	Since pupils from several neighborhoods are involved, school should be located on or near a major street. With sub-community park.	Should be located on a major street because of cars used by student & traffic generated for athletic contests, plays & other activities. With community park.

Table 35

EXISTING PUBLIC SCHOOLS, CITY OF LANSING, 1958

Schools	Site Area Acres	Original Const.	Additions	Useable Class- rooms	Recommen- ded Capa- city	1958-59 Enrollment	1958 Atten- dance Dist. Pop.	Enrollment Factor
ELEMENTARY SCHOOLS								
Allen	1.8	1913	1925	22	550	576	4,010	14.4
Barnes	2.3	1920	1958	14	350	429	4,350	9.9
Bingham	0.9	1956	-	12	360	389	5,070	7.7
Cavanaugh	13.7	1958	-	14	350	454	3,640	12.5
Cedar	0.8	1918	-	9	225	238	2,420	9.8
Christiancy	1.7	1914	-	11	275	231	1,850	12.5
Cumberland	8.1	1958	-	5	150	148	1,130	13.1
Elmhurst	14.9	1950	1951	17	510	562	3,270	17.2
Everett	2.0	1850	1890 1923-28-37	21	525	526	3,650	14.4
Fairview	10.0	1954	-	12	360	466	4,150	11.2
Foster	2.0	1918	1931	19	475	571	3,910	14.6
Genesee	1.2	1912	-	10	250	310	6,050	5.1
Gier Park	14.8	1953	1957	12	360	397	3,010	13.2
Grand River	1.3	1910	1912	9	225	223	3,410	6.5
High	1.9	1924	1930	13	325	427	2,080	20.5
Holmes	1.7	1923	1929	16	400	472	4,320	10.9
Horsebrook	9.2	1952	1956	7	210	166	1,250	13.3
Kalamazoo	1.5	1923	-	21	525	544	8,060	6.7
Kendon	16.5	1958	-	10	300	302	1,350	22.4
Lincoln	1.0	1936	-	8	200	177	1,260	14.0
Lewton	10.0	1957	-	12	360	358	1,600	11.7
Lyons	10.6	1951	1953-58	10	300	287	2,420	11.9

(continued on next page)

Table 35 (con't.)

Schools	Site Area Acres	Original Const.	Additions	Useable Class- rooms	Recommen- ded Capa- city	1958-59 Enrollment	1958 Atten- dance Dist. Pop.	Enrollment Factor
Main	2.4	1929	1953	12	300	367	2,520	14.6
Maplehill	4.6	1952	1953	11	330	277	1,690	16.4
Maplewood	3.0	1918	1953	13	325	424	4,370	9.7
Michigan	1.3	1915	-	11	275	316	3,960	8.0
Moores Park	1.2	1958	-	12	360	369	4,690	7.7
Mt. Hope	4.4	1948	1953	16	480	466	3,810	12.2
Northwestern	6.0	1940	1945-53 55	14	360	387	1,810	21.4
Oak Park	0.9	1916	-	11	275	359	2,770	13.0
Pleasant Grove	3.8	1929	1950	19	525	611	2,820	21.7
Pleasant View	18.6	1955	1957	12	360	363	1,870	19.4
Verlinden	3.4	1930	1954	11	275	309	3,320	9.3
Walnut	1.5	1924	1937	20	500	489	5,550	8.8
Willow (old & new)	6.6	1919-51	1953	6 & 12	485	587	4,390	13.4

JUNIOR HIGH SCHOOLS

C.W. Otto	17.5	1937	1955-56	36	1,200	1,249	-	-
Pattengill	7.0	1920	1922-39	40	1,400	1,337	-	-
Walter French	7.5	1925	1957	35	1,200	1,311	-	-
West Junior	15.0	1919	1922-29	36	1,300	1,296	-	-

SENIOR HIGH SCHOOLS

Eastern	6.0	1928	1937	55	1,900	1,895	-	-
Everett	3.5	1850	1947-50-51	11	400	560	-	-
Sexton	30.5	1944	1949-56	51	1,800	1,913	-	-

SOURCE: Lansing Board of Education

Table 36

EXISTING PUBLIC SCHOOLS, LANSING URBANIZED AREA (EXCLUDING LANSING)

School	Site Area Acres	Original Construction	Additions	Usable Classrooms	Recommended Capacity	1956-57 Enrollment
ELEMENTARY SCHOOLS						
Bailey (East Lansing)	3.7	1922	1942, 50	16	435	369
Bretton Wood	3.5	1910	1930, 51, 56	13	370	366
Central (East Lansing)	1.7	1917	1937	10	250	238
Community	1.5	1860	1953	4	110	117
Cornell Road	10.0	1955	1958	14	420	371
Delta Mills	2.0	1958	-	8	240	267
Forest Road	3.5	1932	1952	9	160	92
Forest View	10.0	1957	-	8	240	236
Glencairn (East Lansing)	5.0	1952	1954	10	300	341
Island	3.5	1886	1940	3	85	75
Maple Grove	10.0	1949	1957	18	540	685
Marble	18.0	1938	1940, 55	20	585	557
Millet	17.0	1927	1948	5	125	133
North	10.0	1900	1924, 46, 52	25	570	655
Okemos Central	5.5	1950	1948, 58	13	390	208
Red Cedar	9.0	1948	1951, 53	14	420	442
Sheridan	5.0	1920	1935, 36, 55	19	505	640
Snow	8.0	1953	-	4	120	91
Stoner	20.0	1930	1935, 45, 55	19	525	474
Towar Gardens	2.0	1936	1947	4	120	100

(continued on next page)

Table 36 (con't)

School	Site Area Acres	Original Construction	Additions	Usable Classrooms	Recommended Capacity	1956-57 Enrollment
Valley Farms	13.0	1949	1954	7	210	282
Wardcliff	20.0	1955	1956	14	420	399
William Donley	19.6	1951	1957	16	400	354
Windemere	10.0	1950	1954, 56	18	540	510
Windemere Annex	2.5	1929	-	4	100	112

JUNIOR HIGH SCHOOLS

East Lansing	10.0	1927	1937	27	630	481
Okemos Central (7-8 Grades)	5.5	1923	1952	11	385	246

SENIOR HIGH SCHOOLS

East Lansing	50.0	1956	-	31	930	818
Okemos Central (9-12 Grades)	5.5	1923	1954, 58	19	665	420

SOURCE: Lansing Area School Districts.

Table 37

PROPOSED PUBLIC SCHOOLS, CITY OF LANSING

School	1980 Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
<u>ELEMENTARY SCHOOLS</u>					
Allen	3400	15.0	500	20-25	Expand site to 2.4 acres.
Barnes	-	-	-	-	Abandon when building is inadequate, poor location.
Bingham	5550	6.5	360	12	Expand site to 2.75 acres.
Cavanaugh	3350	12.5	420	14	Adequate.
Cedar	-	-	-	-	Abandon, transition of surrounding land use and old building.
Christancy	-	-	-	-	Abandon, industrializing area, old building.
Cumberland	1150	13.0	150	5	Adequate, use for K-6.
Elmhurst	3600	15.0	540	18-20	Adequate.
Everett Elem.	2350	15.0	350	13-15	Reduce to 14 classrooms.
Fairview	4250	8.5	360	12	Adequate.
Foster	3200	15.5	500	20	Expand site to 4 acres.
Genessee	-	-	-	-	Abandon, duplication of service area, building old, site small.
Gier Park	3600	13.0	470	15-17	Add 3-5 classrooms.
Grand River	3300	10.0	330	10-12	Rebuild on enlarged site.
High	-	-	-	-	Abandon, area industrializing, old building, small site.
Holmes	3450	11.0	380	15	Expand site to 2.5 acres.

(continued on next page)

Table 37 (Con't)

PROPOSED PUBLIC SCHOOLS, CITY OF LANSING

School	1980 Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
Horsebrook	1250	12.0	150	7	Poor location, but should remain.
Kalamazoo	-	-	-	-	Abandon, duplication of service area, old building, small site.
Kendon	2250	15.0	340	11-13	Add 1-3 Classrooms.
Lincoln	-	-	-	-	Abandon, duplication of service area, old building, small site.
Lewton	2400	15.0	360	12	Adequate.
Lyons	3450	11.0	380	12-14	Add 1-3 classrooms.
Main	2000	15.0	300	12	Expand site and vacate Nipp St.
Maplehill	2400	12.5	300	10	Use for K-3 grades only.
Maplewood	3200	11.0	350	13	Expand site.
Michigan	7250	8.0	580	18-20	Rebuild on existing site enlarged.
Moore's Park	7150	6.0	430	14-16	Add 2-4 rooms, develop joint park-school site.
Mt. Hope	5150	11.5	590	19-21	Add 3 to 4 classrooms.
Northwestern	2750	13.0	360	12	Adequate.
Oak Park	-	-	-	-	Abandon, old building, small site on edge of service area.
Pleasant Grove	4100	14	570	19	Expand site.
Pleasant View	4800	12	580	18-20	Add 6-8 Classrooms.
Verlinden	2800	8.0	220	7	Combine with park, vacating Drexel Road.
Walnut	5600	8.0	450	18	Expand site to 3 acres.
Willow (Old)	-	-	-	-	Abandon old building.
Willow (New)	4250	12.0	510	16-18	Expand site, add 4-6 classrooms.

(continued on next page)

Table 37 (con't)

PROPOSED PUBLIC SCHOOLS, CITY OF LANSING

School	1980 Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
<u>NEW ELEMENTARY SCHOOLS</u>					
Armory	2550	11.0	280	9-11	To replace Oak Park school, ten acre site.
Bancroft	3300	11.0	360	11-13	To replace High Street school, ten acre site.
Hull Court	3550	10.0	360	11-13	To supplement Willow and Walnut Street schools. 3-4 acre site.
Quentin Park	2750	9.0	250	7-9	Joint Park-School site to replace Barnes Street school.
St. Joseph Park	2450	10.0	240	7-9	Joint Park-School site to supplement Main Street school.
Urbandale	1500	15.0	225	7-9	New site combined with Foster Park to serve expanding population. (6.7 acres)
Wainwright	3900	15.0	580	18-20	New joint Park-School site. 12 acres.
<u>JUNIOR HIGH SCHOOLS</u>					
Everett	25,050	6.0	1450-1500	39-41	Reconstruct on existing 25.1 acre site. Convert old building for elementary use.
C.W. Otto	26,400	4.5	1200-1250	33-37	Adequate site, add 5-9 classrooms.
Pattengill	25,700	5.0	1250-1300	34-38	Relocate on BVS property on Saginaw Street. Convert old building to high school use.
Pleasant Grove	21,550	5.0	1100-1150	30-34	Build on existing 27 acre site to serve expanding population.
Walter French	18,950	6.5	1200-1250	33-37	Expand site to 11.6 acres.

(continued on next page)

Table 37 (con't)

PROPOSED PUBLIC SCHOOL, CITY OF LANSING

School	1980 Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
West Junior	23,450	4.5	1000-1050	28-32	Relocate on 10 acres of School for Blind property.

SENIOR HIGH SCHOOLS

Eastern	35,100	5.0	1750-1800	48-53	Expand site to 40-75 acres from Pattengill and BVS property.
Everett (New)	44,000	4.0	1750-1800	48-53	To replace existing Everett High, on 50 acre site.
Sexton	47,150	3.5	1650-1700	45-50	Adequate.

SOURCE: Lansing Planning Department
Lansing Board of Education

Table 38

PROPOSED PUBLIC SCHOOL SYSTEM, LANSING URBANIZED AREA EXCLUDING LANSING

School	1980 Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
<u>EXISTING ELEMENTARY SCHOOLS</u>					
Bailey (E.L.)	3800	10	380	16	Adequate.
Bretton Woods	3550	10	350	11-13	Expand site to 6-8 acres.
Central (E.L.)	1850	10	180	8-10	Expand site to 4 acres.
Community	3300	10	330	10-12	Expand site to 8 acres, add 6-8 classrooms.
Cornell	3500	10	350	11-13	Add 4-6 classrooms before 1960.
Delta Mills	2500	10	250 +	8 +	Expand site to 10 acres.
Forest (Old)	-	-	-	-	Abandon.
Forest (New)	4850	10	490	15-17	Add 6-9 classrooms.
Glencairn (E.L.)	3100	10	310	10	Adequate.
Island	No establ. neighborhood	-	100	3	Adequate.
Maple Grove	4550	10	450	18	Adequate.
Marble (E.L.)	5700	10	570	20	Adequate.
Millett	2600	10	260	9	Remove existing school and construct new 8-10 classrooms.
Okemos Central	4600	10	460	14-16	Adequate.
Red Cedar (E.L.)	1450	10	150 + MSU Apts.	20	Increase to 20 classrooms.
Sheridan Rd.	4300	10	430	16	Change from K-8 to K-6, remove barracks. Expand site to 10 acres.
Snow Rd.	-	-	-	-	Abandon.

(continued on next page)

Table 38 (con't.)

PROPOSED PUBLIC SCHOOL SYSTEM, LANSING URBANIZED AREA EXCLUDING LANSING

School	1980 Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
Stoner	3350	10	340	16-19	Adequate, but poorly located.
Towar Gardens	2750	10	280	8-10	Expand site to 5 acres and add 3-5 classrooms.
Valley Farms	2700	10	270 +	8-20	Increase classrooms as needed. Poorly located.
Wardcliff	4200	10	420	14	Adequate.
William Donley	4500	10	450	14-16	Add 3-5 classrooms, poorly located.
Windemere	7150	10	710	22-24	Add 5-7 classrooms.
Windemere Annex	-	-	-	-	Adequate, but should be abandoned eventually.

PROPOSED ELEMENTARY SCHOOLS

Chippawa	2600	10	260	8-10	Acquire 8 acre site.
Delhi	4150	10	410	12-14	Acquire 10 acre site.
Delta River	1950	10	200	5-7	Acquire 7-10 acre site.
Dewitt # 1	2600	10	260	7-9	Acquire 8-10 acre site.
Dewitt # 2	2700	10	270	8-10	Acquire 8-10 acre site.
Glenhaven	2400	10	240	7-9	Acquire 8 acre site.
Eaton # 1	4400	10	440	14-16	Acquire 10 acre site.
Eaton # 2	5150	10	510	16-18	Acquire 10 acre site.
Eaton # 3	4850	10	480	15-17	Acquire 10 acre site.
Eaton # 4	4000	10	400	12-14	Acquire 9 acre site.
Eaton # 5	2150	10	220	6-8	Acquire 7 acre site.

(continued on next page)

Table 38 (con't.)

PROPOSED PUBLIC SCHOOL SYSTEM, LANSING URBANIZED AREA EXCLUDING LANSING

School	1980 Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
Hiawatha	3250	10	325 + rural	10-12	Existing 15 acre site.
Hopwood	5700	10	570	18-20	Existing 10 acre site.
Indian Hills	3650	10	370	11-13	Acquire 9 acre site.
Meridian	2250	10	220	6-8	Acquire 7 acre site.
Ravenswood	3900	10	580	18-20	Existing 8.4 acre site.
S. Waverly # 1	3300	10	330	10-12	Acquire 10 acre site.
S. Waverly # 2	5250	10	525	16-18	Acquire 10 acre site.
S. Waverly # 3	4750	10	480	15-17	Acquire 10 acre site.
<u>EXISTING JUNIOR HIGH SCHOOLS</u>					
East Lansing	21600	3.5	750-800	25	Adequate.
Okemos(7-8)	15000	3.2	450-500	12-14	Expand site to 30 acres.
<u>PROPOSED JUNIOR HIGH SCHOOLS</u>					
Delta River	13150	5.1	650-700	17-21	Acquire 25-35 acre site.
Hagadorn	14050	4.9	650-700	17-21	Acquire 25-35 acre site.
W. Michigan	17350	5.3	900-950	24-28	Build on existing 40 acre site.
W. St. Joseph	18300	5.0	800-850	22-26	Acquire 25-35 acre site.
S. Waverly	17850	5.5	950-1000	26-30	Acquire 25-35 acre site.
<u>EXISTING SENIOR HIGH SCHOOLS</u>					
E. Lansing	33050	4	1300-1350	35-40	Add 8 to 13 classrooms.
Okemos (9-12)	17600 including rural areas	5.3	900-950	22-28	Build on existing 50 acre site convert old building for junior high use.

(continued on next page)

Table 38 (con't)

PROPOSED PUBLIC SCHOOL SYSTEM, LANSING URBANIZED AREA EXCLUDING LANSING

School	Population	1980 Enrollment Factor	1980 Enrollment	1980 Classrooms	Remarks
<u>PROPOSED SENIOR HIGH SCHOOLS</u>					
N. Lansing	17000 includ- ing rural areas.	4	650-700 Plus Valley Farms	25-30	Need will not be critical until 1965. Acquire 40-75 acre site.
W. Saginaw	25000	4	1000-1050	27-32	Acquire 40-75 acre site.
S. Waverly	39400	4	1550-1600	42-47	Need will not be critical until 1965. Acquire 40-75 acre site.

NOTE: Names given to proposed schools are for reference only.

SOURCE: Lansing Planning Department
Lansing Area School Districts

Table 40
RECOMMENDED RECREATIONAL AREA STANDARDS
City of Lansing & Urbanized Area

Facility	Size	Area/1000 Persons	Max. Serv. Rad.
Neighborhood			
Play-lot	1500-5000 Sq.Ft.	4000 Sq. Ft.	1/8 Mile
Playground	3-6 Acres	1.25 Acres	1/2 Mile
Playground with Elementary School	8-12 Acres	1.75 Acres	1/2 Mile
Neighborhood Park	3 or more acres	1.00 Acre	1/2 Mile
Community			
Playfield	10-25 Acres	1.5-2.0 Acres	1 Mile
Playfield with Junior High School	25-35 Acres	2.0-3.0 Acres	1 Mile
Athletic Field	15-30 Acres	0.3-0.6 Acres	1-2 Miles
Athletic Field with Senior High School	40-75 Acres	0.6-1.0 Acres	1-2 Miles
Community Park	25 Acres or more	2.0-3.0 Acres	1-2 Miles
Regional			
City-wide Park	100 Acres		Less than 30 minutes travel
Regional Park	150 Acres	Provide about 15 acres or more per 1000 persons for all regional uses.	"
Riverside Park	Variable		"
Golf Course	120 Acres		"
Reservation	1000 Acres		Less than 60 minutes travel

NOTE: Other areas included in a well-rounded park system include historical monuments, swimming pools, recreation centers, arboretums, etc.

SOURCE: Lansing Planning Department

Table 41

EXISTING & PROPOSED RECREATIONAL AREAS

City of Lansing

NEIGHBORHOOD FACILITIES

Neighborhood Parks and/or Playgrounds

<u>Name</u>	<u>Acres Existing</u>	<u>Acres Proposed</u>	<u>Recommendations</u>
Bassett Street	3.6	3.6	Adequate
Central	-	1.0	Add 1 acre play-lot for apartment area.
Clifford	5.1	5.1	Adequate
Camstack	13.0	10.5	Adequate (to be used with new Junior High.)
Durant	3.0	3.0	Adequate
Fauna	10.5	10.5	Adequate
Ferris	6.0	6.5	Close street between sites.
Filley Street	2.3	2.3	Adequate
First Street	1.6	1.6	Adequate
Foster	4.1	-	Enlarge and use as Urbandale elementary school-park site.
Greencroft	1.5	1.5	Adequate
Hull Court	1.1	-	Use for Hull Court elementary school-park site.
Hunter	12.5	12.5	Adequate
Maares	22.5	20.0	2.5 acres to be used as City-wide facility.
Oak	17.8	17.8	Adequate
Pleasant Ridge	-	6.0	Acquire 6-acre site east of Pleasant Ridge Subdivision.
Quentin	10.2	-	Use for Quentin elementary school-park site.
Reasoner	5.9	5.9	Abandon street between sites. Site size same due to street extension through west side of property.
Reola Court	0.5	0.5	Retain, although small in size.
Reutter	3.0	3.0	Adequate
Smith	-	1.7	Acquire 1.7 acre site.
St. Joseph St.	20.3	12.3	Use 8 acres for St. Joseph elementary school-park site.
Stabler	5.9	5.9	Adequate

(continued on next page)

Table 41 (con't.)

<u>Name</u>	<u>Acres Existing</u>	<u>Acres Proposed</u>	<u>Recommendations</u>
Stanley	8.8	-	Abandon, use for industrial expansion.
Waldo	0.5	0.5	Retain although small in size.
119th F.A. Playground	<u>2.3</u>	<u>2.3</u>	Adequate
	162.0	134.0	
Elementary Schools with Playgrounds			
27 Existing schools	161.2	188.7	Expand 11 existing sites.
4 Proposed schools	-	32.7	To be constructed as needed.
3 Relocated schools	5.8	30.2	Relocate to new site.
5 Abandoned schools	<u>6.2</u>	<u>-</u>	Abandon 5 sites due to poor location, non-expandable sites, duplication of service area, and transition of surrounding land use.
	173.2	251.6	

COMMUNITY FACILITIES

Playfields

Elm Street	3.6	3.6	Adequate
Marshall Field	13.6	13.6	Adequate
Sycamore	<u>12.7</u>	<u>12.7</u>	Adequate
	29.9	29.9	

Junior High Schools with Playfields

2 Existing schools	25.0	29.1	Expand one existing site.
3 Relocated schools	11.8	65.8	Relocate on new sites.
1 Proposed school	<u>-</u>	<u>27.0</u>	To be constructed as needed.
	36.8	121.9	

Athletic Field

Everett Field	3.1	3.1	Retain
Municipal Ball Park	10.0	10.0	Adequate

(continued on next page)

Table 41 (con't.)

<u>Name</u>	<u>Acres Existing</u>	<u>Acres Proposed</u>	<u>Recommendations</u>
Ranney	20.0	20.0	Adequate
West Side Field	<u>27.1</u>	<u>27.1</u>	Adequate
	60.2	60.2	
Senior High Schools with Athletic Fields			
2 Existing schools	36.0	80.0	Expand one site, one site adequate.
1 Relocated school	<u>3.5</u>	<u>50.0</u>	Relocate one site.
	39.5	130.0	
Community Parks			
Bancroft	52.9	106.0	Expand site to the north.
Gier	44.0	44.0	Develop existing site.
Francis	57.8	57.8	Adequate
South Washington	<u>57.9</u>	<u>57.9</u>	Develop existing site.
	212.6	265.7	
REGIONAL FACILITIES			
City-Wide Parks			
Cooley Garden & Scott Park	13.0	15.4	Expand site to include the rest of block.
Grand River	37.5	37.5	Complete development of existing site.
Moores	2.5	2.5	Use . 2.5 acres of 22.5 acre site for City-Wide Park.
Potter	<u>102.0</u>	<u>102.0</u>	Adequate
	155.0	157.4	
Regional Parks			
Poxson	16.5	16.5	These parks to be part of a large park development designated for reference only as "East Side Regional Park."
Shubel	55.5	55.5	
Turner Farm	126.0	166.0	
East Side Regional	<u>-</u>	<u>62.0</u>	
	198.0	300.0	

Table 41 (con't.)

<u>Name</u>	<u>Acres Existing</u>	<u>Acres Proposed</u>	<u>Recommendations</u>
Riverside Parks			
Misc.	77.6	187.0	City should acquire as much riverside land as reasonably possible.
Golf Courses			
Groesbeck	114.7	114.7	Adequate
Red Cedar	57.9	57.9	Adequate
Sycamore	<u>54.0</u>	<u>54.0</u>	Adequate
	226.6	226.6	
SEMI-PUBLIC FACILITIES			
Golf Courses			
Lansing Country Club	147.4	147.4	Adequate

SOURCE: Lansing Planning Department
Lansing Parks Department
Lansing Board of Education

Table 42

EXISTING & PROPOSED RECREATION AREAS

Lansing Urbanized Area

(Excluding Lansing)

NEIGHBORHOOD FACILITIES

Neighborhood Parks and/or Playgrounds

<u>Name</u>	<u>Acres Existing</u>	<u>Acres Proposed</u>	<u>Recommendations</u>
Joshua	-	6.0	Acquire site, develop as needed.
Brad	-	6.0	" " " "
Wood Street	-	6.0	" " " "
Dier	-	6.0	" " " "
Jones Lake	-	6.0	" " " "
White Hills	-	6.0	" " " "
Walnut Hills	-	6.0	" " " "
Takoma	-	6.0	" " " "
Maumee	-	6.0	" " " "
Northlawn (E.L.)	1.0	1.0	Adequate
Orchard	18.0	8.0	Sell 10 acres.
Valley Court (E.L.)	4.1	4.1	Adequate
	<u>23.1</u>	<u>67.1</u>	

Elementary Schools with Playgrounds

22 Existing schools	202.5	243.3	Expand 5 existing sites.
2 Abandoned schools	11.5	-	
19 Proposed	-	177.9	To be constructed as needed.
	<u>214.0</u>	<u>421.2</u>	

COMMUNITY FACILITIES

Junior High Schools with Playfields

2 Existing schools	15.5	34.5	Expand one site.
5 Proposed schools	-	160.0	To be constructed as needed.
	<u>15.5</u>	<u>194.5</u>	

(continued on next page)

Table 42 (con't.)

<u>Name</u>	<u>Acres Existing</u>	<u>Acres Proposed</u>	<u>Recommendations</u>
Senior High Schools with Athletic Fields			
1 Existing school	50.1	50.1	Adequate
1 Relocated school	5.5	50.0	Relocate Okemos on existing 50.0 acre site.
3 Proposed	-	150.0	To be constructed as needed.
	55.6	250.1	
Community Parks			
East Lansing	29.5	29.5	Adequate
Grand Woods Park	50.0	50.0	Adequate
Logan Street	-	25.0	Purchase land near Logan & Jolly Roads.
Michigan Avenue	28.2	28.2	Adequate
Okemos	3.1	41.0	Expand site to the east and west.
Snow Road	-	46.0	Purchase land north of River at the south end of Snow Road.
	110.8	219.7	
REGIONAL FACILITIES			
Regional Parks			
Scott Woods	70.0	70.0	Develop for nature study.
East Side Regional	-	654.0	These Parks to be part of a large development designated for reference only as "East Side Regional Park."
	70.0	70.0	
Riverside Parks			
Existing	100.6	1,452.0	Acquire as much riverside land as reasonably possible.
Golf Courses			
Abbott Road	-	124.0	Acquire new site on Abbott Rd. south of Lake Lansing Road.

(continued on next page)

Table 42 (con't.)

<u>Name</u>	<u>Acres Existing</u>	<u>Acres Proposed</u>	<u>Recommendations</u>
Jolly Road	-	92.0	Acquire new site at west end of Jolly Road at the River.
Woverly Hills	<u>87.7</u>	<u>87.7</u>	Adequate
	87.7	303.7	
QUASI-PUBLIC FACILITIES			
Golf Courses			
Frondor	66.2	-	Abandon for residential develop- ment.
Indian Hills	51.7	-	Abandon for residential develop- ment.
M.S.U.	167.0	167.0	Adequate
Walnut Hills	<u>190.3</u>	<u>190.3</u>	Adequate
	475.2	357.3	

SOURCE: Lansing Planning Department
Lansing Parks Department
Lansing Area School Districts

Table 43

FUTURE LAND USE

Lansing and Lansing Urbanized Area

Use	1954			1980			
	Acres	Per Cent of Developed Area	Developed Area per 100 persons	Acres	Per Cent of Developed Area	Developed Area per 100 persons	Per Cent Inc. '54 to '80
Residential	9,950.4	40.15	6.63	20,000	40.24	8.00	101.00
Commercial	564.4	2.28	0.38	1,100	2.21	.44	94.90
Industrial	1,310.8	5.29	0.87	5,000	10.06	2.00	281.45
Public Schools	446.3	1.80	0.30	1,400	2.82	.56	213.69
Public Recreation	2,046.7	8.26	1.36	4,000	8.05	1.60	95.44
Public	3,986.5	16.08	2.66	5,000	10.06	2.00	25.22
Quasi-Public	1,067.4	4.31	0.71	2,000	4.02	.80	87.37
Utilities	813.6	3.28	0.54	1,200	2.42	.48	47.49
Streets & Alleys	4,597.9	18.55	3.07	10,000	20.12	4.00	117.49
Developed Area	24,784.0	100.00	16.52	49,700	100.00	19.88	100.53
Undeveloped	30,516.0			5,600			
River	700.0			700			
Total Area	56,000.0			56,000			

SOURCE: Lansing Planning Department

GENERALIZED
LAND USE
PLAN

