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LA THÈSE A ÉTÉ MICROFILMÉE TELLE QUE NOUS L'AVONS REÇUE

AN INVESTIGATION OF THE ADEQUACY OF THE QUANTITY AND DISTRIBUTION OF URBAN PARKLAND IN THE CITY OF WINDSOR

by

Meredith McLean DeGroat

A Thesis

Submitted to the Faculty of Graduate Studies through the Department of Geography in partial fulfillment of the requirements for the degree of Master of Arts at the University of Windsor

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ABSTRACT

An investigation of the parkland supply in the City of Windsor was the focus of this research. The study identified the growth of the park system in the City, the adequacy of overall parkland quantity and local parkland quantity in Windsor based on the City's accepted parkland standards, and the relationship between neighbourhood and community parkland density and urban form.

The first hypothesis tested, that which suggests that based on the City of Windsor's established parkland standards, deficiencies in neighbourhood and community parkland exist in the City as a whole and that these deficiencies are a product of the growth in history of the City's park system, was accepted. In fact, not only does a deficiency exist in the quantity of local parkland supplied according to Windsor's established standards but a deficiency also exists in the quantity of overall parkland provided. It is obvious from the review of the development of the park system that this situation of prevailing deficiencies in parkland supply is a product of the slow yet steady growth of parkland in Windsor.

The hypothesis that local park density was related to the urban form of the City of Windsor was accepted. A strong correlation was found to exist between park density, the independent variables of population density, and density of housing units.

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CHAPTER 1

INTRODUCTION

Societies all over the world are becoming more urbanized. Canadian society is no exception. "In 1871, 18 per cent of the population lived in cities. Now 76 per cent of Canada's population live in urban areas" (Statistics Canada, 1974, Catalogue 11-50711974, P. 9). It has been predicted that by the end of this century, this percentage will increase to ninety. It is also expected that within twenty years, fifty per cent of the Canadian population will live in apartment buildings (Balmer, 1977). It is obvious that as society becomes more urban, natural or cultivated park amenities will have to serve more people, whose lives are more remote from nature and whose environmental recreation needs are more acute (Brauer, 1970). Increasing population and housing densities across each metropolis suggests that the pressure on existing available parks will increase far beyond what may be expected from increases in the frequency of use due to more free time (Jaakson, February, 1977, P, 18). These factors all indicate that an increase in the demand for urban parkland is probable in the near future.

In the planning of most Canadian cities is the emerging challenge of providing sufficient urban public recreational space (Wright, 1974, P. 35). The basic objective for the

provision of recreational open space has been stated by recreational planners to be to provide space in the proper location and of the right type to satisfy the diversity of needs for social interaction (Wright, Braithwaite and Forster, 1976, P. 33). The need for recreational open space is, of course, more complex than this objective presumes. For example, individuals in a high income bracket are more likely to appreciate urban parks for their natural amenities than to serve their needs for social interaction. The concept of the provision of an adequate amount of parkland in an appropriate location is, however, the overriding objective.

The viability of urban parks has been questioned in recent years because some public officials and some researchers feel that these parks do not serve the needs of the people (Johnson, 1977, P. 10). Mayor John Sewell of the City of Toronto has doubted whether existing urban parkland is meaningful to the residents (Sewell, 1977). If an urban recreational open space system is to satisfy the needs and aspirations of the community, then planners must consider the critical relationship between physical form of the space and the population which it is intended to serve (Wright, Braithwaite and Forster, 1976, P. 39).

O B J E C T I V E S

The primary task of this research is to investigate the adequacy of both the quantity and distribution of parkland in the City of Windsor. Specifically, the objectives of the study can be categorized as follows:

(a) To identify the historical development of the park system in the City of Windsor in order to gain some understanding of the existing park quantity and distribution.

(b) To determine if deficiencies in neighbourhood and community parkland quantities exist in the City of Windsor based on the City of Windsor's parkland standards.

(c) To determine the relationship between the distribution of urban parkland and urban form in the City of Windsor.

REGION OF AREA UNDER STUDY

The City of Windsor is situated in Southwestern Ontario, on the perimeter of one of the most extensively urbanized sections of the United States (City of Windsor, 1971). Located on the south bank of the Detroit River opposite the City of Detroit, Windsor is a large urban centre served by five railways, six major highways and two major airlines.

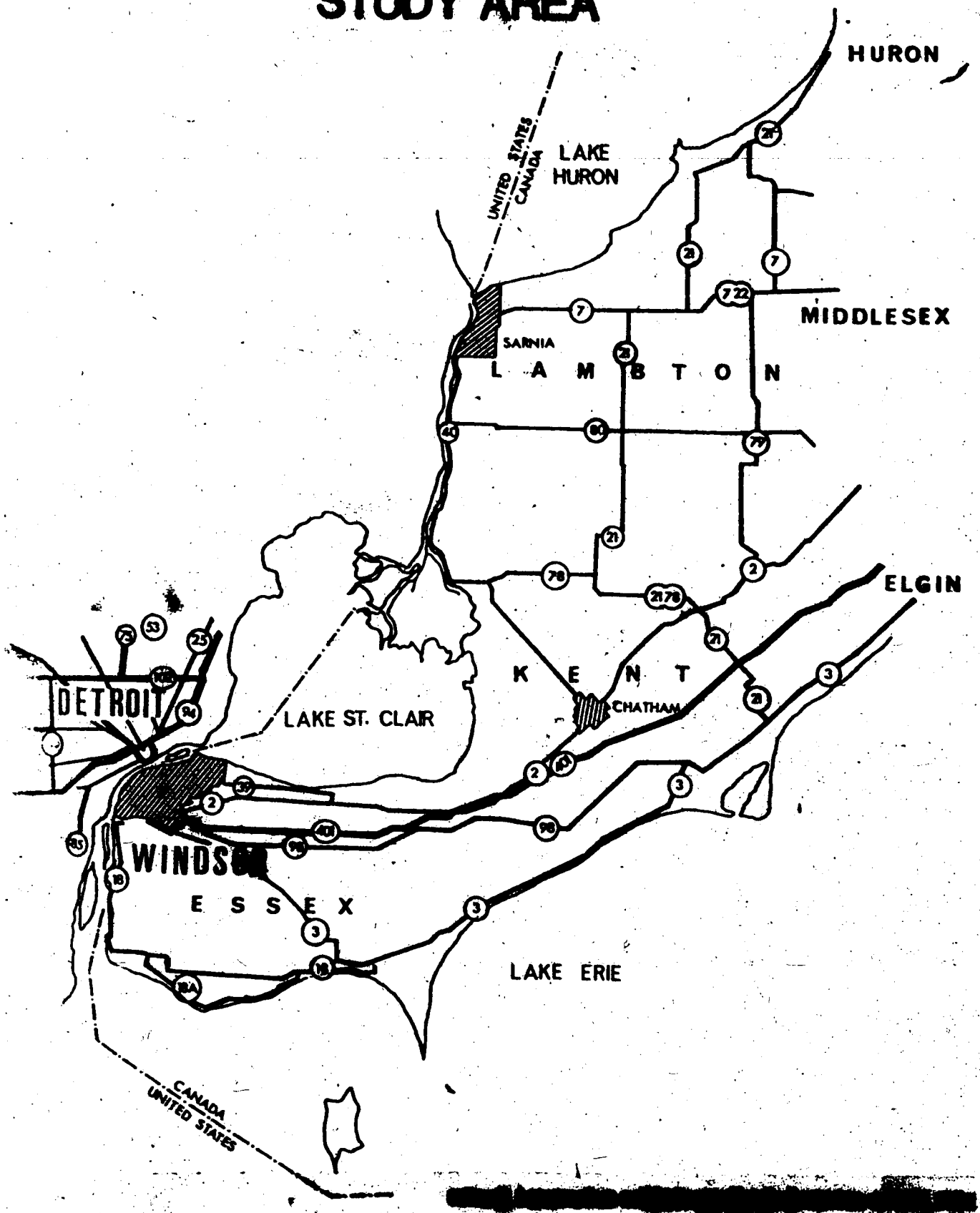
Windsor is the tenth largest urbanized area in Canada. Its City limits have expanded continuously throughout history, resulting in the present area of the City being 12,105 hectares. Windsor is similar in size and in its area growth patterns to a number of cities in North America. Because of this similarity, Windsor is representative of an urban area facing parkland supply problems. An historical view of the development of the parkland system in the City of Windsor is possible as a result of records kept of individual districts just prior to the two major annexations the City experienced in 1935 and 1966. In addition, the City of Windsor has a population of approximately 200,000 which is a manageable population size for data collection.

The above factors all contributed to the reason why this study area was chosen. Further items which narrowed the investigator's site selection to the City of Windsor were personal familiarity with the area, lack of topic-

related literature oriented to this area, and the proximity of the investigation.

MAP 1

STUDY AREA



CHAPTER II

REVIEW OF LITERATURE

The supply of public parks in municipalities in Ontario has been largely influenced by the legislation of the Province over the years with respect to parkland acquisition. The Public Parks Act was the first legislation in the Province of Ontario and the first Canadian legislation passed affecting municipal parks (McFarland, 1970). The Act was passed in 1883 to provide for the establishment and maintenance of public parks in cities and towns upon consent or petition of the electors. Boards of park management were to be appointed by local governments and the parks were to be under the control of these boards (Ontario, Statutes, Chapter 20, 1883). With the adoption of this Act, these boards were permitted to purchase land for park purposes that was not to exceed 1,000 acres in the case of cities and 500 acres in the case of towns. If the board were to determine that they had more land than was required for park purposes, the Act allowed the Board to sell or otherwise dispose of it in return of cash or credit. No stipulation is given in the Act as to where this cash or credit was to be held and for what purpose it was to be used (Ontario, Statutes, Chapter 20, 1883).

The Ontario government in 1887 amended this Act. It became known as the Public Parks Act and it more accurately

defined the amount of parkland that could be purchased by a municipality. It stated:

> The lands purchase by the Board, together with those assumed by them as for park purposes at the time of the adoption of this Act, shall not together exceed, in the case of cities having a population of 100,000 inhabitants and over, 2,000 acres, and in other cities 1,000 acres, and in the case of towns 500 acres (Ontario, Revised Statutes, Chapter 190, 1887).

It is interesting to note that these Acts, although allowing at the time for an adequate amount of park space to be provided in a municipality, served to limit the provision of public parks. The Acts permitted the sale of park property without restricting that the funds from the property sale be later used for the acquisition of parks. In addition, it appears that no consideration to future park needs was present at the time these Acts were passed.

A further blow to the concept of parkland supply occurred when, in 1913, the Statute Law Amendment Act introduced an additional section to the Public Parks Act allowing the Council of a municipality to repeal any by-law so that the municipal corporation could therefore sell or otherwise dispose of public land (Ontario, Statutes, 3 - 4 George V, Chapter 18, 1913). This amendment contributed to the destruction of any landbanking for park purposes that may have taken place at this time. It also may have contributed to the destruction of any security that the community had in enabling a Council to maintain land for park purposes.

It wasn't until 1970 that the stipulation of the amount of parkland a municipality of a particular population size was permitted to purchase was omitted from the Public Parks Act (Ontario, Revised Statutes, Chapter 384, 1970). Between 1887 and 1970, this limitation had never been amended and was, therefore, extremely out of date and very restricting on the quantity of parkland allowed to be supplied in an urban centre.

The ability of a municipality to obtain land for park purposes increased with the introduction of park-related legislation in The Planning Act in 1959. Under the legislation of this Act, the land to an amount determined by the Minister but not exceeding five per cent of the land included in a subdivision plan was to be conveyed to the municipality for public purposes other than highways (Ontario, Revised Statutes, Chapter 296, 1960). A problem for municipalities with this legislation, however, was with the interpretation of the term 'public purposes'. It was possible that developers could state that items such as sidewalks, drainage areas, etc., were items of 'public purpose' and, therefore, no land for park purposes would ever have been obtained by this conveyance method.

Also permitted under this Act was cash payment to the municipality of a sum of money not exceeding the value of five per cent of the land in lieu of the land for public

purposes. Land conveyed to a municipality was generally required to be held and used for public purposes. With the approval of the Minister, however, the land was allowed to be sold. The monies obtained through the cash-in-lieu process and where the land was sold was protected under The Planning Act so that it could be expended only for the purchase of land to be held and used by the municpality for public purposes (Ontario, Revised Statutes, Chapter 296, 1960). Once again, it was possible that parkland would never be acquired and that the monies would be used for other public purposes. The supply of park facilities in a municipality could, therefore, not be aided at all by the introduction of this legislation.

A simple amendment to The Planning Act just prior to 1970 had a significant impact on the ability of a municipality to increase its park supply. The wording of "lands used or to be used for public purposes" in The Planning Act of 19[illegible] changed to "landsuused or to be used for park p[illegible] in The Planning Act of 1970 (Ontario, Revised Statutes, [illegible]r 249, 1970). Possibly, the importance of the increas[illegible]rn over park and recreational lands is expressed in this change of [illegible]pressions. Regardless of the reason, though, [illegible] developing residential areas of an urban municipal[illegible] would to benefit in terms of park supply through this amendment.

One further amendment to The Planning Act affecting the supply of parkland in an urban area occurred in 1973. Remaining still in this legislation is that the conveyance of land for park purposes must not exceed five per cent of the land proposed for development. An alternative has been introduced in the legislation, however, and this is that the municipalities may pass by-laws stipulating that land be conveyed to the municipality for park purposes at a rate of one acre for each 120 dwelling units proposed (Ontario, Statutes, Chapter 168, 1973). This amendment enables a municipality that is undergoing medium to high density development to acquire more parkland at less cost than ever before.

As prevailing legislation affected the parkland supply in a municipality, so too did traditional approaches of municipal recreation and planning authorities. In the past, much of the planning for urban recreation facilities has been based on quantity rather than distribution or location. This has been for some time, most often expressed by the use of quantitative standards.

The first adoption of standards is believed to have taken place at a 1906 meeting of the National Playground Association of America. In a recent National Recreation and Parks Association (N.R.P.A.) publication, it was revealed that quite early in the century someone proposed that a

municipality should provide ten acres of recreation space per thousand people. The actual origin of this standard is not known; however, the N.R.P.A., then the National Recreation Association (N.R.A.), accepted it and promoted it as a desirable standard (National Recreation Association, 1943).

Much criticism over the application of these standards has occurred. Shivers and Hjelte analyzed the early 1900's period in their book Planning Recreational Places and concluded that these adopted standards were never based upon any factual knowledge or validated scientific analysis. "It was and is, a historical estimate of expert opinion which was developed in another country in 1900." (Shivers and Hjelte, 1971, P. 210). These researchers further suggested that no valid standards exist for the acquisition and development of recreational spaces in urban centres and that the only standards employed are those of experienced estimate and educated guess (Shivers and Hjelte, 1971).

In 1928, George Butler's book, Play Areas, was published by the N.R.P.A., thereby giving it the Association's official sanction (Butler, 1928). This book suggested a series of standards, which it stated were "guides" but which were widely applied and nationally accepted without revision, and are essentially the ones in use today (Shivers and Hjelte, 1971).

The N.R.P.A. appointed a National Committee on Recreation Standards in 1960 to investigate the use of standards in

communities in the United States. The conclusions of this committee were that standards were defended, and in some cases, slightly revised, but never rationalized (Shivers and Hjelte, 1971).

Further defense regarding the application of standards arose when in 1969 a National Forum on parks and recreation standards was attended by over 150 experts. These individuals reached the consensus that the Association should continue to determine standards and that these standards have resulted from years of observation, experience and consultation by top professionals in parks and recreation and allied fields (Shivers and Hjelte, 1971).

The standards implemented in the early 1900's and debated throughout the years are still recommended in documents today. Planning the Neighbourhood, published by the American Public Health Association, states that their committee's space recommendations "are based on the generally accepted goal of 10 acres per 1,000 persons as a city-wide total for active and passive recreation space" (American Public Health Association, 1960, P. 47). The Community Builders Handbook, published by the Community Builders Group in 1968 and the N.R.P.A. publication, Suggested Area Standards for Parks and Recreation are only two of the many documents that recommend the use of the ten acre per thousand standard (The Community Builders Group, 1968).

The Ontario Ministry of Culture and Recreation is vague in its statement of recommended standards. In the publication entitled Guidelines for Developing Public Recreation Facility Standards, it specifies that "the open space standard recommended by the Sports and Fitness Division of the Ministry of Culture and Recreation is 20 acres of developed parkland per 1,000 population" (Ontario Ministry of Culture and Recreation, 1976, P. 26). However, open space and parkland are not the same (refer to the Definition of Terms), and it is difficult to relate an open space standard to parkland quantity.

Deppite the fact that parkland standards have remained the same for three-quarters of a century, there has been little criticism regarding standards, and their use continues. In fact, about 75 per cent of all Canadian towns and cities employ open space standards and standards are the most commonly employed approach for planning for leisure, and specifically, planning for urban open space (Burton, March, 1976, P. 29).

The "Urban Open Space Project" conducted by the Ministry of State for Urban Affairs in cooperation with the Canadian Parks and Recreation Association was undertaken in 1973 to produce a set of urban open space planning guidelines for general use by Canadian municipalities (Project Planning Associates Limited, 1973). Among other concerns, this study

found that the average open space standard employed in Canadian cities was 10.34 acres per 1000 population and that the average open space standard employed in Ontario cities with a population greater than 50,000 persons was 9.7 acres per 1000 (Scarborough Planning Board, 1976).

The City of Windsor parkland standard is 10 acres per 1000 persons (City of Windsor, 1971). This standard is far below that recommended for open space by the Ontario Ministry of Culture and Recreation, yet is slightly above the average of similar size cities in the same province.

Despite some criticism that has arisen because standards have come to be so widely accepted and used with little investigation, they have also simplified the planning task to a very large extent. There is historical and legal precedent for the use of standards and after 75 years of their use they do not require logical defense in the political arena. There seems to be general agreement among parks and recreation administrators that when used, standards serve as a point of departure for estimating: 1) the amount of land and the facilities required for a population; 2) the number of people a given recreation area, facility or system may be expected to serve; and, 3) the adequacy of an area, facility or system to accommodate the potential users in its service area (Wright, Braithwaite, 1976).

Nonetheless, criticism of the use of standards is justified.

The process of employing standards has, in many cases, resulted in a misallocation of resources and an unequal distribution of facilities (Dee and Liebman, 1970). The present 'standards' method relies heavily on broad analysis of needs obtained by relating gross quantities of people to gross quantities of acres. "A 'typical population' with 'typical interests' is usually assumed. As a result, the diverse values of ethnic, economic, age and other groups within the urban population are largely ignored" (Marcou, O'Leary and Associates, P. 7, 1966).

Two major shortcomings with regard to the use of standards have been discussed in Urban Recreational Open Space. Firstly, the application of standards in plans appears to result from the lack of relationship between geographic and demographic variables and secondly, there is a tendency to perceive the standard as a goal in itself without regard to human behaviour (Wright, Braithwaite and Forster, 1976, P. 19).

The document Open Space for Human Needs suggests that the presently accepted procedure of designing an open space system is inadequate. The usual method of applying recognized quantitative standards of certain recreation facilities per unit population to calculate a present and future demand and then comparing an inventory of these facilities to determine present and future deficit should be modified. "Through

its (the approaches) use of standards, it makes gross assumptions about the open space behaviour and desires of very large aggregates of the population, without real regard for class and individual differences" (Marcou, O'Leary and Associates, 1966, P. 24). The document goes on to suggest that the various segments of the population divided by economic, ethnic and age groups should be studied and their behaviour should be considered.

Further comments have been recorded by the City of Burlington and the Ontario Ministry of Housing which suggest that a need exists for various physical and social characteristics to be analyzed in the consideration of park facilities. In the City of Burlington's Park Inventory and Analysis, it was stated that "the demographic and socio-economic characteristics are important in open space planning, since the information gives an indication of where open space planning standards require modification to meet special needs" (Burlington Planning Department, P. 2A, 1975). The Ontario Ministry of Housing, in its publication Parkland for People also states the importance of the consideration of demographic and socio-economic characteristics in the planning of parkland and other open space (Ministry of Housing, 1974).

Few studies have been conducted to determine to what extent different types of people require or prefer different amounts and types of park space but there are comments and

so-called expert opinions which have been documented with respect to the relationship between various socio-economic characteristics and the need for land in which to pursue recreational activities.

Income is one socio-economic characteristic which has been discussed in the literature with respect to parkland. As a result of customs and costs, economically deprived groups have fewer physical places available in which to meet socially (Marcou, O'Leary and Associates, 1966). "Clearly, open space will serve a vital human purpose if it is located within range of these groups and is designed as a physical setting for social interaction. Since these economically deprived groups are generally concentrated in the core of the metropolis, a greater priority needs to be given to the provision of open space in older, denser neighbourhoods" (Marcou, O'Leary and Associates, 1966, p. 46).

Reference has also been made in publications to housing conditions and density with respect to parkland needs. "In the development of this recreational system, we cannot ignore the plight of people forced to live in poor housing in depressed, poorly serviced urban areas. It is intolerable for the recreation profession to ignore the predicament of a child who has to grow up in the tenth floor of an apartment building" (Canadian Outdoor Recreation Research Committee, 1976, P. 96). It has been documented that more neighbourhood

parks are needed in high density areas (Shomon, 1971).

An investigation of leisure participation as influenced by urban residence patterns and types which suggests that apartment dwellers are most active in all urban leisure activities; for example, bowling, dancing, dining out, while home dwellers are the most active in activities which involve contact with the outdoors in a fashion similar to that which we would encounter in a rural environment; for example, boating, skiing and picnicking. In addition, in such leisure pursuits as visiting national parks, hiking and fishing and so on, the home dwellers proved to be outstandingly more active than the apartment dwellers (Hendricks, J., 1971). In addition, it has been found that inner-city park space tends to be heavily used by the inner-city poor (Schmertz, 1970).

The notion of age and recreation participation has also been investigated. The findings of an analysis of leisure time profiles of four different age groups of adult males support a theory that a man's leisure time activity changes as he advances in years (Campbell, 1968).

Further studies of socio-economic patterns of outdoor recreation, although not directly related to urban parkland demand are worth noting. Mueller and Gurin found that participation in most recreation activities may be a phenomena of social class involving other closely related factors of education and occupation (Mueller and Gurin, 1972).

The majority of investigations in the area of the distribution of urban parkland has been undertaken by United States researchers. They have analyzed the spatial distribution of neighbourhood parks (Rolfe, 1965) and playgrounds as central places (Mitchel, 1967). As well, an optimal location model for urban playgrounds was developed (Dee, 1970). The concept of the substitutability of non-public space for public space was employed in the models of the last two studies mentioned. This allowed for theories being formulated which did not deal specifically with urban parks, independent of other privately owned open space.

Little research has been carried out with respect to the notion of "adequacy" of parkland, be it the adequacy of parkland in terms of quantity (as it related to standards) or in terms of distribution (as it relates to urban form) but the few studies available require discussion.

The findings of a 1978 Canadian study of urban parkland in Ontario indicated that a relatively high percentage of municipal authorities (43%) felt that the distribution of parkland in their municipality was inadequate (McLean, 1978). Adequacy and inadequacy were, however, not defined. A study of England and Wales revealed that 75 per cent of all authorities approached indicated dissatisfaction with existing distribution, most commonly identifying inner residental areas

and suburban estates as deficient areas (Balmer, 1974). In addition to the research previously cited, a less recent study that was carried out on the City of Toronto, Ontario, showed that 32 per cent of the City's population had no readily accessible parkland (no parkland in their census tract); 81 per cent had very little local parkland and only 19 per cent were relatively well served (Bureau of Municipal Research, 1971).

Robert Lineberry, in his 1976 study of the distribution of municipal public services in San Antonio, discussed three hypotheses which together suggested that service distribution is a function of the discrimination against the urban 'underclass' (Lineberry, 1977). The first hypothesis, the race preference hypothesis suggested that discrimination exists in the distribution of urban services on racial bases. The second hypothesis, the class preference hypothesis, took a more inclusive posture than the race preference hypothesis, holding that the economically disadvantaged in general are short-changed. The power elite hypothesis is the hypothesis that elites rule in their own interest. In general, a relationship was found to exist between the mean distances of an areal unit from parkland and the socio-economic and ecological attributes of the unit. Lineberry's findings did, however, support the contrary to his 'underclass' theory and its three hypotheses. In other words, the higher the social

status of the unit, the greater its distance to the nearest public park. It should be pointed out that the finding indicates only that individuals of low socio-economic status reside in close proximity to parkland; yet, the number of people to be served by what may be a scant piece of public green space was not considered.

The most detailed study undertaken in recent decades investigated the distribution of parks as it related to socio-economic status in Columbia, South Carolina. This research employed a wide variety of socio-economic variables and it determined statistically that park density was greatest at the lower end of the socio-economic scale (Mitchell and Lovingood, 1976). Additional findings were that the central cities are better served with public recreation facilities than areas on the periphery, and suburbs are largely devoid of parkland facilities. The researchers of the Columbia study stated that the processes of urbanization occurring in Columbia were not unique and that their observations may be valid for many other metropolitan areas (Mitchell and Lovingood, 1976).

A research project, similar but not as thorough as the Columbia investigation, was carried out on the City of Windsor, Ontario, in 1971. This study looked at the spatial distribution of supply and demand of public parks. The results of an analysis suggested that there was a positive

correlation between areas where parkland was the least, where average income and median housing values were lowest and where the ratio of apartments to single family dwellings was the highest (Dewar, 1971). In other words, parkland density, which is the number of hectares of parkland per every hectare of an areal unit, appeared to be lowest in areas of low socio-economic status.

CHAPTER III

HYPOTHESES

Researchers and recreation and planning professionals have long debated the concept of parkland standards. Municipal authorities, at the same time, have been striving to meet the parkland standards established for their particular municipalities. Inevitably, it seems that the area where these parkland standards can best be achieved is in the suburbs where new development allows space to be set aside for parks.

It has been documented that the poor and ethnic minorities are becoming concentrated in the centre of cities (Gray, 1969). Conflicting reports, however, show the degree that urban parkland is accessible to these groups. One study has indicated that, because the poor and ethnic minorities reside in the cities' core, they are located in the portion of the urbanized area where distances to and between parks are short, and therefore where parks are relatively more accessible (Mitchell and Lovingood, 1976). A second study indicated that parkland is not accessible to the individuals which reside in the centre of a city (Bureau of Municipal Research, 1971).

What is, then, the local parkland situation in the City of Windsor? How did the park system in Windsor develop over

time? Does the quantity of neighbourhood and community parkland in the City equal the established standards, and, where is this parkland located with respect to urban form? These are questions which must be answered if one is to understand the availability of park facilities to Windsor residents.

Two hypotheses have been developed for this study.

(1) Based on the City of Windsor's established parkland standards, deficiencies in neighbourhood and community parkland exist in the City as a whole and these deficiencies are a product of the growth in history of the City's park system.

(2) Local park density, which is the number of hectares of neighbourhood and community parkland per hectare of total area is related to the urban form of the City of Windsor.

CHAPTER IV

METHODOLOGY

The acceptance or rejection of the hypotheses was based upon the following process.

DATA COLLECTION

A variety of data was collected and compiled for purposes of ascertaining the adequacy of the quantity of parkland within the City of Windsor. The independent study variables necessary to investigate the relationship between the distribution of urban parkland and urban form included density variables and an income variable. All variables were in some way standardized allowing for comparable conditions which would permit an unbiased examination of the dependent and independent variables.

The density variables collected were population density, which is the number of persons residing per hectare of land, and density of housing units, which is the number of housing units per hectare of land. The income variable employed in the study was the average family income. This is the figure reached when the total income of all families in a particular district is divided by the total number of families in that district. The density variables characterized the urban form of the City while the income variable characterized the

socio-economic status of the City and it is for these reasons that they were selected.

The dependent study variable that was employed in the statistical analysis in this study was park density. Park density is the number of hectares of parkland per hectare of total area in a particular planning district. Because park

most of the statistics were available in planning district units and other statistics could easily be placed within these limits.

D A T A M A N I P U L A T I O N

The adequacy of the quantity of urban parkland in the City of Windsor was determined by comparing the total amount of neighbourhood and community parkland to the City of Windsor's parkland standards, as indicated in the City of Windsor's Official Plan (City of Windsor, 1971). The neighbourhood and community parkland deficiency was determined upon completion of this procedure and it was expressed as a percentage of the required amount of parkland. In addition, a review of the historical development of the parkland system in Windsor was carried out to determine if the existing parkland quantity in the City is a product of this development over the years.

A Spearman rank correlation coefficient was employed to measure the relationship between the dependent variable, neighbourhood and community parkland density and the aforementioned independent variables.

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C H A P T E R V

A N A L Y S I S A N D E V A L U A T I O N

O F T H E H Y P O T H E S E S

HYPOTHESIS 1

> Based on the City of Windsor's established parkland standards, deficiencies in neighbourhood and community parkland exist in the City as a whole and these deficiencies are a product of the growth in history of the City's park system.

The first white men entered the Windsor area on LaSalle's barque, Griffon, in 1679. It was not until the War of Independence in the eighteenth century though, that settlement became concentrated on the south shore of the Detroit River.

Originally known as the Township of Sandwich in the District of Hesse, the City of Windsor has certainly experienced many stages of growth and development since that time. In 1861, the Township of Sandwich was subdivided into six independent municipalities; the City of Windsor, the Town of Walkerville, the Town of Sandwich, the Township of Sandwich West, the Township of Sandwich East and the Township of Sandwich South. As best as can be determined, no public parks existed in any of these municipalities in that time period, although mention of some sort of recreation can be found in literature dealing with the history of the area.

The year 1856 witnessed the opening of the Windsor Town Hall. (Windsor was an incorporated town between 1854 and

1892, when it became a City.) It was common for social and cultural activities in Windsor to be centred around the Town Hall (Morrison, 1954). The Windsor Cricket Club became a popular location for recreational activities in the 1860's (Morrison, 1954). Also in the 1860's the Town of Sandwich's mineral springs became quite an attraction and many people travelled from Detroit, Windsor and Walkerville to recreate in the sulphur water. Of particular significance is that it has been documented that at that time the residents of these cities had no park facilities (Neal, 1909).

It appears that in the early 1900's none of the Border Cities, which included Ford City, Walkerville, Windsor and Sandwich, with the exception of the area around Windsor City Hall, had any municipally owned parkland. Many of the open space needs of the residents were, however, met by the beaches of Essex County, the beauty of Belle Isle and the public park on Bob-Lo Island, which were all frequented by picnicking groups (Morrison, 1954). In addition, documentation supports that in this period, the Town of Walkerville was well supplied with breathing spots which were in the shape of parks and bowling greens (Neal, 1909).

In 1918, the City of Windsor grew as it annexed approximately 100 acres from Sandwich East and approximately 124 acres from Sandwich West. It is not believed that Windsor acquired any parkland along with these annexations as it is

not documented that either of these two municipalities had any parkland at that time.

The first public park ever developed in the City of Windsor was Wigle Park, which was established in 1910. The second park established was Lanspeary Park on Giles Boulevard between Langlois Avenue and Pierre Avenue. According to a newspaper article in the Border Cities Star, July 9, 1919, a decision was made by the Windsor Parks Board to develop 13 acres on Giles Boulevard for park purposes (Border Cities Star, 1919). It is interesting to note that both Wigle Park and Lanspeary Park still exist today.

It appears obvious that the Public Parks Act of 1883 and the revised Public Parks Act of 1887 did little to either discourage or encourage parkland supply in Windsor. The limits in the Act placed on the maximum amount of parkland a municipality is permitted were never even approached by the City's meager park supply. In addition, the existing parkland in Windsor was so slight that it is not likely that The Public Parks Act did much to promote the importance of the presence of parks in an urban centre.

The first official approach to reviewing the parkland situation in the City of Windsor was taken in 1920 when the Border Cities Utilities Commission engaged Morris Knowles Limited of Windsor to conduct a survey and prepare a report on the park system of greater Windsor. Knowles' study

indicated that just prior to 1920 Windsor had a total of 24.7 acres of parkland and Walkerville had a total of 13.9 acres of parkland. In addition, "The Report to the Essex Utilities Commission upon a Park System for the Essex Border Utilities" showed the percentage of area in parks and park acreage per 1,000 population for Windsor, Walkerville and the Border District in general. At the same time, the study compared the park situation in Windsor to the park supply of Toronto, Hamilton and London, only to find that Windsor did not compare at all well with the other Ontario cities. The statistics of the Knowles Study are revealed in Table 1.

Between 1920 and 1930, there were several additions to the park system. The major acquisitions were Wyandotte Street Park, on Wyandotte Street west of McKay, Memorial Park and Jackson Park. The parkland system, then, in 1930 consisted of Wigle Park, Jackson Park, Lanspeary Park, Church Street Park, Wyandotte Street Park, Riverview Park, City Hall Park and Baby Park, which was a tourist camp. It is interesting to note that all of these parks exist today. Church Street Park is now known as Mitchell Park. Wyandotte Street Park is known today as Wilson Park, Riverview Park as Straith Park, and Baby Park is now officially called Bradley Park.

In addition to these parks, a small park owned by the Government Docks at Bruce Avenue and a small park at Langlois Avenue and Pierre Avenue existed on the waterfront (Adams,

Thompson and Fry, 1930).

Small playgrounds, although not inventoried in 1930, were scattered throughout the Border Cities. It has been documented that some small parks existed in East Windsor (previously known as Ford City) and Sandwich (Adams, Thompson and Fry, 1930). It has also been recorded that Willistead Park was given to Walkerville by the Walker Family prior to 1930. This park, still preserved, is now within the City of Windsor boundaries (Adams, Thompson and Fry, 1930).

The population of the City of Windsor in 1930 was 85,100. With approximately 182 acres of parkland within the City of Windsor boundaries (at that time) and according to a parkland standard of 10 acres per 1000 persons, a deficiency in park quantity of 78% or 668 acres prevailed in 1930. Table 2 indicates the parkland quantity and deficiency of 1930.

The year 1935 witnessed the amalgamation of the Border Cities into the City of Windsor. Table 3 reveals the total quantity of parkland which existed in each of the municipalities of East Windsor, Walkerville, Windsor and Sandwich. It is interesting to note that by far the majority of parkland and the greatest proportion of parkland as it related to the total land quantity existed in Windsor. The total parkland acreage of the City of Windsor, after amalgamation

T A B L E 1

PARK SUPPLY 1920

Municipality	Parkland Area	Percentage of Area in Parks	Park Acreage per 1,000 pop.
Windsor	27.7 acres	0.9%	0.8 acres
Walkerville	13.9 acres	2.2%	2.0 acres
Border District	41.6 acres	0.7%	0.9 acres

Municipality	Percentage of Area in Parks	Park Acreage per 1,000 pop.
Toronto	7.0%	4.0 acres
Hamilton	8.0%	3.0 acres
London	7.0%	7.5 acres
Windsor District	0.7%	0.9 acres

SOURCE: Morris Knowles Limited, "Report to the Essex Utilities Commission Upon a Park System for the Essex Border Utilities", 1920.

in 1935 was reported to have been 197 acres. Based on this quantity and a total 1935 population of approximately 101,157, a parkland deficiency of 813 acres or 80% prevailed.

It should be pointed out that available statistics suggest that the City of Windsor parkland quantity in 1930 was greater than the parkland quantity in the City of Windsor just prior to amalgamation in 1935. No evidence of the sale of any parkland in this time period can be found and it is likely that some parkland was simply not inventoried in 1935.

A January 1938 newspaper article in the Windsor Star stated that "the public is fast approaching that parks consciousness which alone can bring about the eventual perfection of a parks system that every city of the magnitude of Windsor should rightfully expect" (The Windsor Star, January, 1938). The article reported that in 1937 the City had 200 acres of parkland. In January 1938, however, the City of Windsor discontinued its operation of the 40 acre Baby Park in Sandwich West. The park had been leased to the City from the Essex Terminal Railway Compoay. This action was taken because of the large maintenance costs of the Park and because it was felt that all recreational activities of the residents of the City would be taken care of by the existing Jackson and Memorial Parks (The Windsor Star, January, 1938). There was, therefore, in the late 1930's some awareness as to the importance of a park system in the City. No concern for the

T A B L E 2

PARK SUPPLY 1930

Park	Acreage
Wigle Park	5.50
Jackson Park	67.00
Memorial Park	37.34
Wyandotte Street Park	9.58
Lanspeary Park	11.53
Church Street	4.56
City Hall Park	2.00
Baby Park	40.00
Riverview Park	2.50
at Government Docks	1.00
at Langlois Ave. and Pierre Avenue	1.00
TOTAL ACREAGE*	197.51

1930 population of Windsor 85,100

∴2.32 acres per 1000 population

∴Deficiency** in Parkland (%) (within City boundaries) is 78 per cent.

*The total area of parkland is only an approximate figure. It is very likely that a number of small parks have been omitted from this total.

**The deficiency is calculated on the basis of the standard of 10 acres of parkland per 1000 persons.

SOURCE: City of Windsor Master Plan, 1930

T A B L E 3

PARK SUPPLY 1935

	E.Windsor	Walkerville	Windsor	Sandwich	Total
Park Acreage	19	23	135	20	197
Total Acreage	1677	1051	3209	2314	8251
Fully Developed and Built Upon	395	574	1598	440	3007

TOTAL PARKLAND ACREAGE: 197 acres

1935 population of Windsor 101,157

∴ 1.95 acres per 1000 population

∴ Deficiency* in Parkland (%) is 80 per cent.

SOURCE: Archives of Ontario

* The deficiency is calculated on the basis of the standard of 10 acres of parkland per 1000 persons.

T A B L E 4

PARK SUPPLY 1937

13 parks

1 bathing beach

6 playbrounds

5 breathing spots

2 memorial sites

TOTAL PARKLAND AREA: 200 acres
(parks and playgrounds)

SOURCE: The Windsor Star, January, 1938.

distribution of the parks, however, appears to have been prominent and an example of this is the ceasing of the operations of Baby Park which served residents that were not easily accessible to other park facilities.

An analysis of the City of Windsor's park system was included in Windsor's Master Plan for 1945-1975 which was printed by the City Planning Commission. It appears that the information relating to parkland in this Master Plan was taken from a Recreation Report done by Madeline Sprague in April 1945. As Table 5 indicates, the total area of parkland in the City was approximately 261.07 acres. Based on the 1944 population of Windsor of 118,548, there existed 2.2 acres of parkland per 1000 persons.

The 1945 Master Plan for the City of Windsor used the parkland standard of ten acres per 1000 persons to evaluate the parkland supply in the City. It was determined, therefore, that the City of Windsor was deficient in parkland by 7.8 acres per 1000 persons. With respect to the parkland standard, the Master Plan stated "very few recreation systems of cities in North America now correspond to this ideal". The Plan goes on to state: "This is natural, as the cities developed before a scientific knowledge of recreational needs in relation to population was general" (City of Windsor Planning Commission, Master Plan).

Not only was the concept of the quantity of park supply

T A B L E 5

PARK SUPPLY 1944

	Acres
Playgrounds	
Baby Playground	
Broadhead Playground	
Clay Playground	
Gorwood Playground	
London Street Playground	
Sandwich Street near Louis	
Northwest corner Cataraqui and Louis	
Between Victoria Avenue and Dougall Avenue	
Rear of 451 Park Street West	
South side of Sandwich Street West between Rosedale Street and Detroit Street	
TOTAL PLAYGROUND AREA	30.16 acres
Playfields	
In all neighbourhood parks except Reaume Park and Assumption Park	
George Avenue Playfield	
Stodgall Playfield	
Wigle Playfield	
Shoreacres Playfield	
TOTAL PLAYFIELD AREA	95.73 acres
Neighbourhood Parks	
Assumption Park	
Lanspeary Park	
Mitchell Park	
Prince Road Park	
Reaume Park	
Riverview Park	
Rossini Park	
Willistead Park	
Wilson Park	
TOTAL NEIGHBOURHOOD PARK AREA	40.69 acres
TOTAL GREEN STRIPS AND BREATHING SPOTS AREA	3.92 acres

Large Parks

Jackson Park	
Memorial Park	
TOTAL LARGE PARK AREA	59.34 acres
TOTAL RIVERFRONT PARK AREA	31.25 acres
TOTAL PARKLAND AREA	261.07 acres

1944 population of Windsor 118,548

∴ 2.2 acres per 1000 population.

∴ Deficiency* in Parkland (%) is 77 per cent.

SOURCE: City Planning Commission, Windsor's Master Plan, 1945.

*Deficiency is calculated on the basis of the standard of ten acres of parkland per 1000 persons.

as it relates to the standard of 10 acres of parkland per 1000 persons in Windsor first mentioned in this Master Plan, but concern regarding the distribution of the parkland was also represented in this Master Plan. It was stated in this Plan that the park system in Windsor showed an unbalanced distribution of large parks and playgrounds and that many parks and playgrounds were disproportionate in size to the population that they served (City of Windsor Planning Commission, Master Plan).

The park supply in Windsor continued to grow over the years while the spreading concern for an adequate park system was evident by the many studies conducted. E. Faludi was engaged by the City of Windsor in 1947 to establish the Metropolitan Park System Waterfront Development Program. This program stressed the importance of securing river and lake front land for public use. In addition, a study entitled "Windsor Municipal Recreation Survey Report" was conducted in 1956. It is interesting to note that this report suggested that all park areas were appropriately placed in the community.

The Department of Planning and Urban Renewal in conjunction with the Department of Parks and Recreation prepared a report on Windsor's riverfront in 1963. This report helped to encourage the growth of the park supply along the river. It recommended that the City maintain its policy of acquiring

riverfront land for park purposes by acquiring waterfront lands as they became available.

A major plan for the provision of parks was completed in 1965. A Plan for Municipal Recreation Areas for the City of Windsor was prepared by the Department of Planning and Urban Renewal and the Department of Parks and Recreation. The inventory of park facilities which was done for this study is listed in Table 6.

It is interesting to note that in 1965, there existed a total of 433.20 acres of parkland in the City of Windsor. The population of the City of Windsor in that year has been estimated to be 113,947. Based on these figures, and as Table 6 indicates, in 1965 there existed 3.8 acres of parkland per every 1000 persons. The parkland supply as it relates to the population, has, therefore, increased over the years up to 1965.

The Municipal Recreation Areas Plan drew conclusions with respect to the parkland situation in Windsor and its relationship to the parkland standard of 10 acres per 1000 persons. It stated that "this optimum standard (10 acres per 1000 population) is incapable of being satisfied with respect to the City of Windsor as a result of its urbanized character and the substantial costs involved in acquiring improved properties" (City of Windsor, Department of Planning and Urban Renewal, 1965). The problem of acquiring

TABLE 6

PARK SUPPLY 1964

Neighbourhood Park Areas	Acreage
Dawson Road Playground	.50
George Avenue Park	6.03
Labadie Road Park	3.46
Westcott Road Park	4.20
Long Park	6.70
Factoria Park	2.20
Norman Road Park	2.20
Kinsmen Playground	.75
Begley Park	.47
Willistead Park	15.50
Stodgall Park	5.98
Gignac Park	6.07
Clay Park	.70
Parent Avenue Playground	.94
Garwood Playground	.84
Wigle Park	5.50
Broadhead Park	.59
Dougall Avenue Playground	.50
Mitchell Park	4.56
Atkinson Park	6.20
Straith Park	2.52
Bridgeview Park	3.00
Curry Avenue Playground	1.10
Bradley Park	1.70
Patterson Park	2.11
Malden Road Park	8.20
Crowley Park	3.70
TOTAL NEIGHBOURHOOD PARK AREA	96.22

Community Park Areas	
A.K.O. Community Park	16.30
Lanspeary Park	11.53
Memorial - Optimist Park	42.82
Jackson Park	60.00
Wilson Park	9.58
Prince Road Park	44.60
TOTAL COMMUNITY PARK AREA	184.83

Special Park Areas

Assumption Park	25.00
Centennial Park	6.00
Dieppe Gardens	6.60
Alexander Park	8.00
Reaume Park	4.35
McKee Park	2.20
Ojibway Park	100.00
TOTAL SPECIAL PARK AREAS	152.15
TOTAL PARKLAND AREA	433.20

1965 population of Windsor 113,947

3.8 acres per 1000 population

Deficiency* in Parkland (%) is 62%.

SOURCE: City of Windsor, Department of Planning and Urban Renewal, 1965.

*Deficiency is calculated on the basis of the standard of 10 acres of parkland per 1000 persons.

additional land for park purposes in areas which have already been well developed, such as the core area of the City, has been recognized.

Between the park studies of 1965 and 1971, the park supply in Windsor increased substantially. The population also grew quickly, however, resulting in less existing parkland per person than had prevailed in 1965. Table 7 shows that the parkland deficit in the City of Windsor in 1971 was 66 per cent based on the parkland standard of 10 acres per 1000 population. A total of 3.39 acres of parkland existed for every 1000 persons in the City.

In 1979, the total acreage of parkland in the City of Windsor was 1664.66 acres. This was more than double the park space of 1971. At the same time, the population of the City of Windsor actually decreased to 198,182. Although the parkland situation improved substantially, a deficit situation still prevailed in Windsor. Based on the parkland standard of 10 acres per 1000 population Windsor should have had 1981.82 acres of parkland. The City, therefore, had a parkland deficiency of 16 per cent of its required park space. As Table 8 reveals, 8.41 acres of parkland were supplied for every 1000 persons in the City of Windsor in 1971.

Map 2 indicates the growth of the park system in the City of Windsor since 1930. The increase in the number and

TABLE 7

PARK SUPPLY 1971

Park	Acreage
A. K. O. Park	16.30
Adstoll Park	4.00
Alexander Park	10.16
Assumption - Centennial Parks	25.87
Atkinson Park	6.20
Beals Street Park	12.00
Begley Park	0.50
Belanger Park	8.20
Bradley Park	1.70
Bridgeview Park	3.00
Bridgeview Subdivision	3.70
Broadhead Park	0.59
Broadway Park	3.00
Central Park	17.26
Chopin Park	4.25
City Hall Square	2.00
Clay Park	0.70
C. N. R. Park	2.75
Crowley Park	6.20
Curry Park	5.29
Curry Avenue Playground	1.10
Dawson Road Playground	0.50
Devonshire Court	1.50
Dieppe Gardens	6.60
East End Park	7.40
Edward Tranby Park	14.00
Esdras Park	1.00
Factoria Street Playground	2.20
Ford Park	0.15
Fountainebleu	2.30
Garwood Playground	0.84
George Avenue Park	6.03
Gignac Park	6.07
Glengarry Court Playground	3.55
Homesite Park	0.75
Horticulture Park	0.25
Huron Line Greenbelt	5.00
Jackson Park	64.00
Kennedy Place	0.25
Kinsmen Playground (Downtown)	0.75
Kinsmen Playground (Norman Road)	2.20
Kiwanis Park	7.50

Labodie Road Park	3.46
Lanspeary Park	11.53
Long Park	6.70
McDonald Park	9.32
McDougall Green Area	0.17
McKee Park	2.50
Optimist - Memorial Park	56.19
MicMac Park	44.60
Mitchell Park	4.56
Notre Dame Park	3.70
Ojibway Park	100.00
Parent Avenue Park	1.00
West Landfill	5.00
Partington Park	4.00
Paterson Park	2.11
Provincial Park	2.00
Pykes Park	5.00
Reaume Park	4.97
Remington Booster Park	11.00
Riverdale Park	3.00
Roseland Park	4.00
Russell Street Park	2.50
St. John Vianney	8.50
St. Rose Beach	0.64
St. Rose Park	10.75
Stop 26 Beach	0.75
Straith Park	2.50
Stodgall Park	6.00
Superior Park	7.85
Thompson Park	7.33
Titcombe Park	11.00
Armstrong Park	10.00
University Avenue Playground	1.00
Veterans Memorial Park	4.15
Vimy Park	0.50
Walker Homesite	10.72
Westcott Road Park	4.20
Wigle Park	5.50
Willistead	15.50
Wilson Park	9.58
Windsor Stadium	4.00
TOTAL PARKLAND AREA	678.00

1971 population of Windsor 200,000

∴ 3.39 acres per 1000 population

∴ Deficiency* in Parkland (%) is 66%.

SOURCE: City of Windsor, Department of Planning and Urban Renewal, 1971.

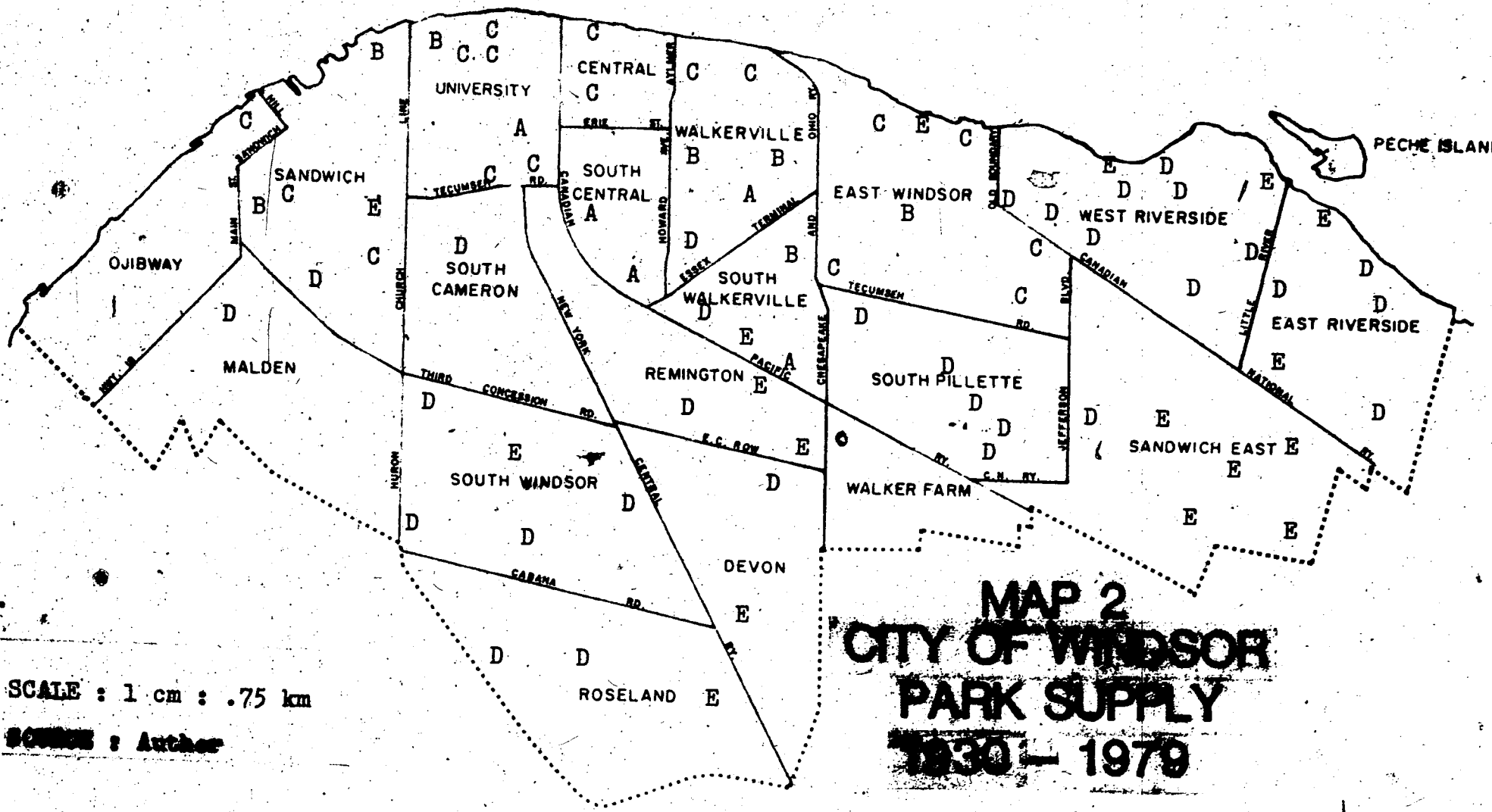
*Deficiency is calculated on the basis of the standard of 10 acres of parkland per 1000 persons.

area of parkland is obvious in the outer portions of the City. In addition, more parks have been provided in the core areas of the City, but this has occurred at a much slower rate.

Tables 2, 5, 6, 7 and 8 each indicate the parks which existed in various years in the City of Windsor. These Tables show the phenomenal gain in the number of parks which the City has experienced. In 1935, the City of Windsor had 11 parks. In 1979, 111 parks prevailed in the City of Windsor.

Table 9 and Graph 1 help to summarize the evolution of parkland supply in the study area. It is indicated in the Table that the percentage of parkland deficiency has decreased substantially since 1920. The deficiency should continue to decrease. At the same time, the supply of parkland per 1000 persons has increased. Although this increase is revealed in Table 9, it is best illustrated on Graph 1. On this Graph, we can see that the trend in parkland supply throughout the past sixty years has been more parkland per person. It can be expected that this trend will continue as the concern for park space continues to grow and as government legislation allows parkland acquisition on the part of the municipality to be more feasible.

It is important to mention that from this point on, all measures in this Study have been expressed according to the metric system. Thus, the transformations in Appendix 'A' may prove to be helpful in understanding the quantities



SCALE : 1 cm : .75 km

SOURCE : Author

MAP 2
CITY OF WINDSOR
PARK SUPPLY
1930 - 1979

LEGEND

PARKS PRIOR TO:

1930	A
1945	B
1960	C
1971	D
1979	E

PLANNING DISTRICTS

OFFICIAL PLAN

CITY OF WINDSOR PLANNING AREA

PREPARED BY

[illegible]

TABLE 8

PARK SUPPLY 1979

Park	Acreage	Hectares	N/Hood.	Comm.	Regional
Dieppe Gardens		2.81			2.81
C. N. R. Park		1.11			1.11
Pelissier Parkette		.04	.04		
Chatham St. Parkette		.04	.04		
Broadhead Park		.24	.24		
Glengarry Park		1.44	1.44		
City Hall Square		.81			.81
Provincial Park		.81			.81
Hall Farm Park		4.52	4.52		
Walker Homesite		4.34	.81	3.53	
Devonwood Park		44.53			44.53
Lakeview		4.05			4.05
Sand Point		1.21			1.21
Stop 26 Beach		.46			.46
East End Park		3.00	3.00		
Riverside Kiwanis		1.21		1.21	
East End Landfill		3.85			3.85
Alexander Park		4.11			4.11
Goose Bay Park		2.86			2.86
Reaume Park		2.01			2.01
Coventry Park		1.32			1.32
Chopin Park		1.72	1.72		
Dawson Park		.20	.20		
Factoria Park		.89	.89		
George Park		2.44	2.44		
Labadie Park		1.40	1.40		
Long Park		2.71	2.71		
Norman Park		1.36	1.36		
Pykes Park		2.02	2.02		
Westcott Park		1.70	1.70		
A. K. O. Park		6.60	4.05	2.55	
Drouillard Tot Lot		.15	.15		
Titcomb Park		4.45	4.45		
Ojibway Park		40.49			40.49
Prairie Provincial Nature Reserve		90.43			90.43
Broadway Park		2.63	2.63		
Remington Booster Park		5.98	1.21	4.77	
Udine Park		2.02	.81	1.21	
Roseland Park		1.62	1.62		
Veteran's Memorial Park		2.02	2.02		

Roseland Golf Course	50.61			50.61
McKee Park	1.01			1.01
Mill Street Park	.52			.52
Butler's Marina	1.86			1.86
Bradley Park	.69	.69		
Belanger Park	3.32	3.32		
Crowley Park	2.51	2.51		
Matchette Road Park	.40	.40		
Patterson Park	.85	.85		
MicMac Park	51.02	2.02	24.30	24.70
West End Landfill	67.61		4.05	63.56
Huron Line Greenbelt	2.02			2.02
Bush Park	2.23	2.23		
Roseville Garden	3.52	3.52		
Stillmeadow	2.61	2.61		
Forest Glade Park	6.28	.81	5.47	
Meadowbrook	1.56	1.56		
Seneca Park	2.44	2.44		
Superior Park	7.19	2.51	4.68	
Mitchell Park	1.85	1.85		
Wigle Park	2.23	2.23		
Jackson Park	25.91	.81	7.29	17.81
Windsor Stadium	1.62			1.62
Adstoll Park	1.62	.10		1.52
Armstrong Park	4.05	.81	3.24	
Shawnee Park	3.00	3.00		
Thurston Park	.93	.93		
McDonald Park	5.03	.81	4.22	
Parent Avenue Park	.40	.40		
Vimy Park	.20	.20		
Memorial Park	20.24	1.21		19.03
Stodgall Park	2.73	.20	2.53	
Optimist Park	2.51		2.51	
Curry Park	2.14	2.14		
Mark Avenue Park	.61	.61		
Partington Part	1.62	1.62		
Central Park	7.60	.81	6.79	
Oakwood Park	6.87	4.85	2.02	
Assumption Centennial	10.47			10.47
Atkinson Park	2.51	2.51		
Bridgeview Park	1.21	1.21		
Bridgeview Parkettes	1.50	1.50		
Curry Avenue Park	.45	.45		
Straith Park	1.01	1.01		
Wilson Park	3.88	.81	3.07	
Begley School Park	1.51	1.51		
Clay Park	.28	.28		
Devonshire Court	.61	.61		

Garwood Park		.34	.34		
Gignac Park		2.45	1.21	1.24	
Kinsmen Park		.30	.30		
University Park		.40	.40		
Lanspery Park		4.67	.81	3.86	
Willistead Park		6.28	.81	5.47	
Kennedy Place		.10	.10		
Bridges Bay		.40			.40
St. Rose B		.26			.26
Coventry Pa		1.32			1.32
Kiwanis Pa		3.79		2.68	1.11
No Name		.06			.06
Edward Park		6.18	6.18		
Esdras Park		.40	.40		
Homedale Park		9.29	.81	8.38	
Homesite Park		.30	.30		
Horticulture Park		.10	.10		
Little River Acre		2.03	2.03		
Riverdale		1.21	1.21		
St. John Vianney		3.44	3.44		
Thompson Park		2.97	2.97		
St. Rose Park		4.35		4.35	
Peche Island		45.26			45.26
TOTAL	1664.66	673.95	123.51	106.43	444.01

1979 population of Windsor 198,182

8.41 acres per 1000 population

Deficiency* in parkland (%) is 16 per cent.

SOURCE: City of Windsor Planning Department, Park Study, 1979.

*The deficiency is calculated on the basis of the standard of 10 acres per 1000 persons.

T A B L E 9

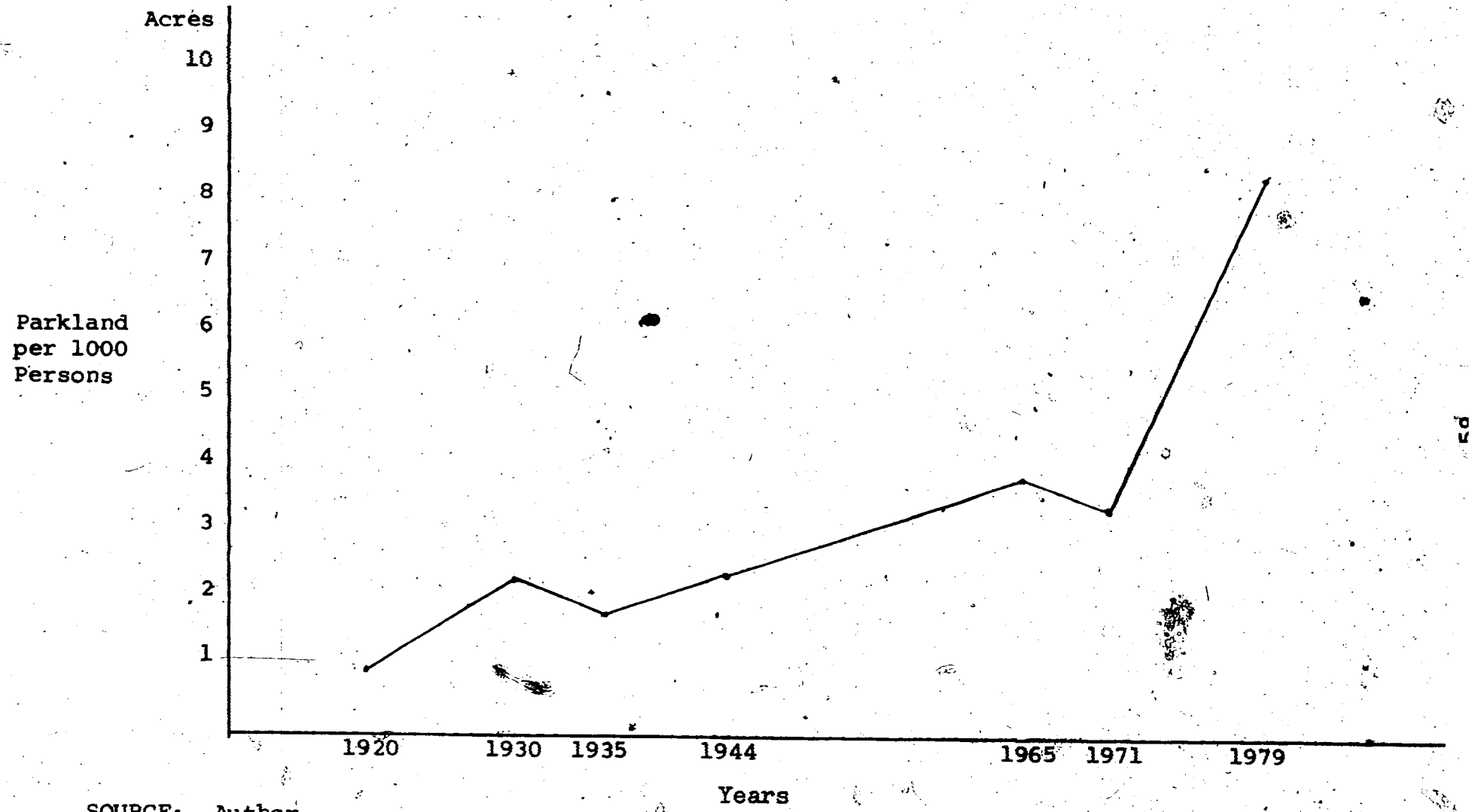
PARK SUPPLY 1920 - 1979

Year	Population	Parkland Area (ac.)	Parkland/ 1000 Persons	Parkland Deficiency
1920	46,000	41.6	0.9 ac./1000	90%
1930	85,100	182	2.14 ac./1000	78%
1935	101,157	197	1.95 ac./1000	80%
1944	118,548	261	2.2 ac./1000	70%
1965	113,947	433	3.8 ac./1000	62%
1971	200,000	678	3.39 ac./1000	66%
1979	198,182	1665	8.41 ac./1000	16%

SOURCE: Author

GRAPH 1

PARK SUPPLY 1920 - 1979



SOURCE: Author

discussed.

As mentioned previously and as indicated in Table 8, the City of Windsor, in 1979 had 1664.66 acres of parkland. In metric, the City had 673.95 hectares. According to the standard of 4.05 hectares per 1000 persons (10 acres per 1000), Windsor is deficient in parkland quantity by 16 per cent.

This research is particularly concerned with the provision of local parkland, that being neighbourhood and community parkland. Overall parkland quantities have been discussed up until this point because a break down of local parkland for past years was not available. The total neighbourhood parkland quantity in the City of Windsor, in 1979, was 123.51 hectares and the total community parkland quantity in the City was 106.43 hectares. The standard which the City of Windsor has adopted for neighbourhood and community park space is 2.05 hectares per 1000 persons. Table 10 reveals that based on this standard the local parkland quantity in the City of Windsor is deficient by 28 per cent. A total of 90.54 hectares make up the City's local parkland deficit.

The previously discussed information has revealed that the parkland supply in the City of Windsor has traditionally been deficient according to accepted parkland standards. The park system in the City of Windsor has improved over the years; however, the parkland deficiencies have been great and

are now difficult to overcome. As a result of the past deficiencies of parkland, and despite recent gains in the quantity of park space, the quantity of neighbourhood and community parkland in the City of Windsor is less than that which is required according to accepted standards. Hypothesis 1 is therefore accepted.

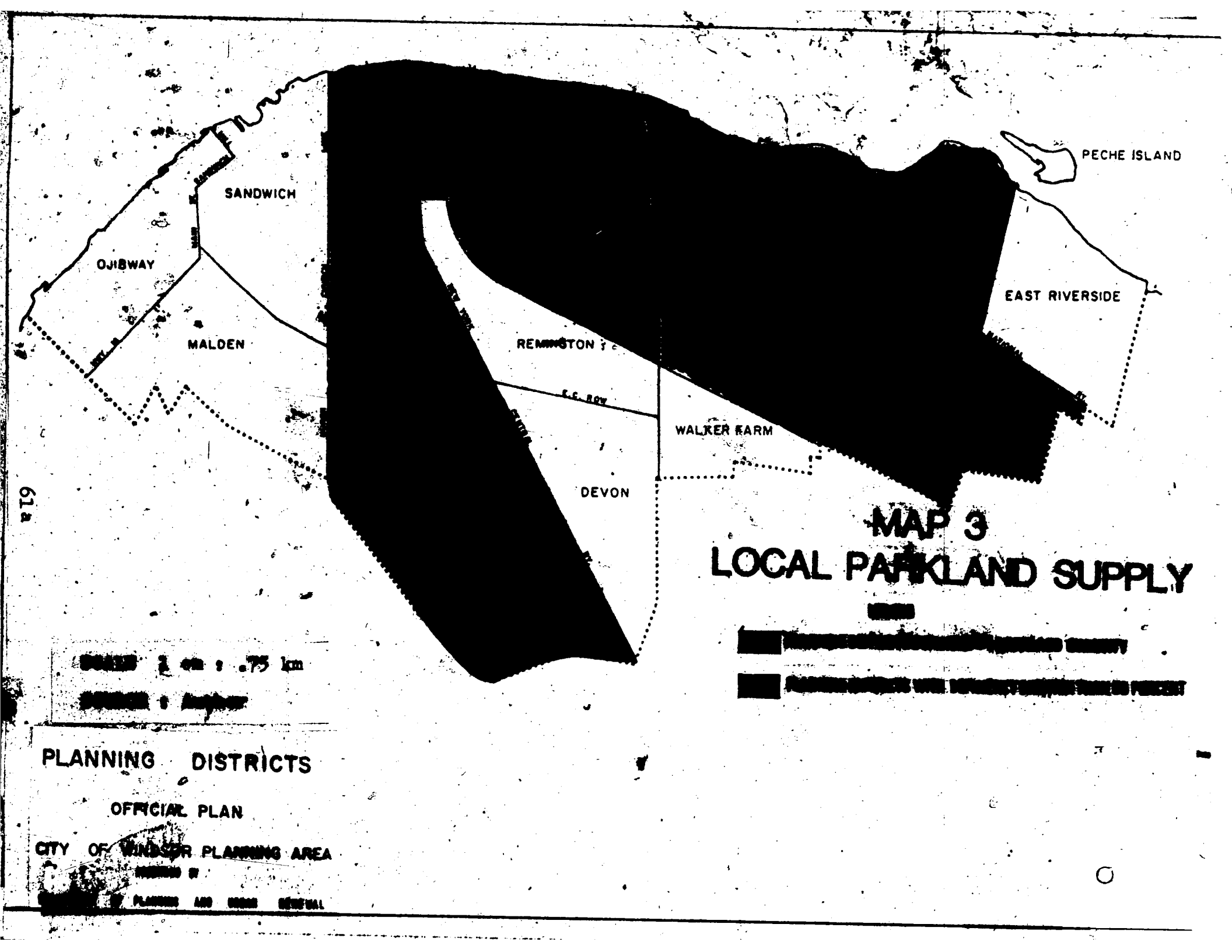

SANDWICH
OJIBWAY
MALDEN
REMINGTON
E.C. ROW
DEVON
WALKER FARM
EAST RIVERSIDE
PECHE ISLAND
MAP 3
LOCAL PARKLAND SUPPLY
PLANNING DISTRICTS
OFFICIAL PLAN
CITY OF WINDSOR PLANNING AREA

TABLE 10

NEIGHBOURHOOD AND COMMUNITY
PARKLAND ANALYSIS*

Planning District	Population (1978)	Parkland Required (hectares)	Parkland Provided (hectares)	Deficit (hectares)	Deficit (per cent)
Central	9,581	15.52	1.76	13.76	88.66
Devon	3,787	6.12	8.86	nil	nil
E. Riverside	1,087	1.76	4.21	nil	nil
E. Windsor	24,525	39.74	21.19	18.55	46.68
Malden	1,150	1.86	4.45	nil	nil
Ojibway	425	.74	2.63	nil	nil
Remington	3,612	5.86	8.00	nil	nil
Roseland	6,920	11.22	3.64	7.58	67.56
Sandwich	15,189	24.60	38.15	nil	nil
Sandwich E.	15,237	24.68	16.74	7.94	32.17
S. Cameron	4,567	7.40	7.19	.21	2.84
S. Central	10,435	16.90	16.86	.04	.24
S. Pillette	11,893	19.26	11.85	7.41	38.47
S.Walkerville	7,502	12.16	6.75	5.41	44.49
S. Windsor	16,073	26.04	18.84	7.2	27.65
University	17,588	28.50	10.56	17.94	62.95
Walker Farm	71	.12	0	.12	100.00
Walkerville	23,409	37.92	16.96	20.96	55.27
W. Riverside	25,131	40.72	32.87	7.85	19.28
City of Windsor	198,182	321.06	230.52	90.54	28.20

*Analysis based on the City of Windsor standard of 4 acres of neighbourhood and community parkland per 1000 persons as stated in the City's Official Plan.

4 acres per 1,000 is the same as 1.62 hectares per 1,000.

SOURCE: Author

HYPOTHESIS 2

> Local park density, which is the number of hectares of neighbourhood and community parkland per hectare of total area is related to the urban form of the City of Windsor.

The quantity of neighbourhood and community parkland in the City of Windsor in 1979 is indicated in Table 8 and Table 10. This quantity, which comprises all of the local parkland in the City, was used for purposes of testing Hypothesis 2. It was with this information that the dependent variable park density was derived. The density of local parkland in the City's Planning Districts is indicated in Table 11.

As mentioned in Chapter IV, the independent variables involved in testing this hypothesis included population density, density of housing units and average family income. The population density and density of housing units are indicated in Table 12, while Table 13 shows average family income.

A Spearman rank correlation coefficient analysis revealed that the population density and the density of housing units were significantly related to the dependent variables, parkland density. In addition, the correlations of these variables were greater than 0.70. These correlations were not only strong, but were very consistent as the relationships reported were significant at the .01 level.

TABLE 11

PARKLAND DENSITY

Planning District	Neighbourhood and Community Parkland Density
Central	.008
Devon	.012
East Riverside	.006
East Windsor	.025
Malden	.005
Ojibway	.004
Remington	.015
Roseland	.004
Sandwich	.052
Sandwich East	.016
South Cameron	.013
South Central	.056
South Pillette	.018
South Walkerville	.020
South Windsor	.022
University	.021
Walker Farm	0
Walkerville	.032
West Riverside	.040
CITY OF WINDSOR	.019

SOURCE: Author

T A B L E 1 2

DENSITY OF POPULATION AND HOUSING UNITS

Planning District	Population Density/ha. 1978	Density of Housing Units
Central	45.49	21.94
Devon	5.45	1.68
East Riverside	1.57	.35
East Windsor	29.46	10.38
Malden	1.39	.40
Ojibway	.72	.19
Remington	6.62	2.13
Roseland	7.21	1.97
Sandwich	20.72	6.59
Sandwich East	14.46	3.24
South Cameron	8.50	2.36
South Central	34.44	13.37
South Pillette	18.24	5.70
South Walkerville	22.26	7.76
South Windsor	19.02	5.26
University	35.33	12.15
Walker Farm	.22	.09
Walkerville	44.29	16.66
West Riverside	30.73	9.87
CITY OF WINDSOR	16.43	5.46

SOURCE: 1978 City of Windsor Assessment Data Statistics
Canada 1976 Da[illegible]

T A B L E 1 3

AVERAGE FAMILY INCOME

Planning District	Average Earnings
Central	$14,364
Devon	20,151
East Riverside	21,624
East Windsor	17,281
Malden	17,171
Ojibway	16,951
Remington	14,779
Roseland	22,658
Sandwich	17,005
Sandwich East	19,363
South Cameron	21,770
South Central	17,042
South Pillette	18,705
South Walkerville	21,094
South Windsor	24,472
University	15,403
Walker Farm	18,807
Walkerville	14,725
West Riverside	23,389
CITY OF WINDSOR	18,733

SOURCE: 1971 Census of Canada - average earnings of total family

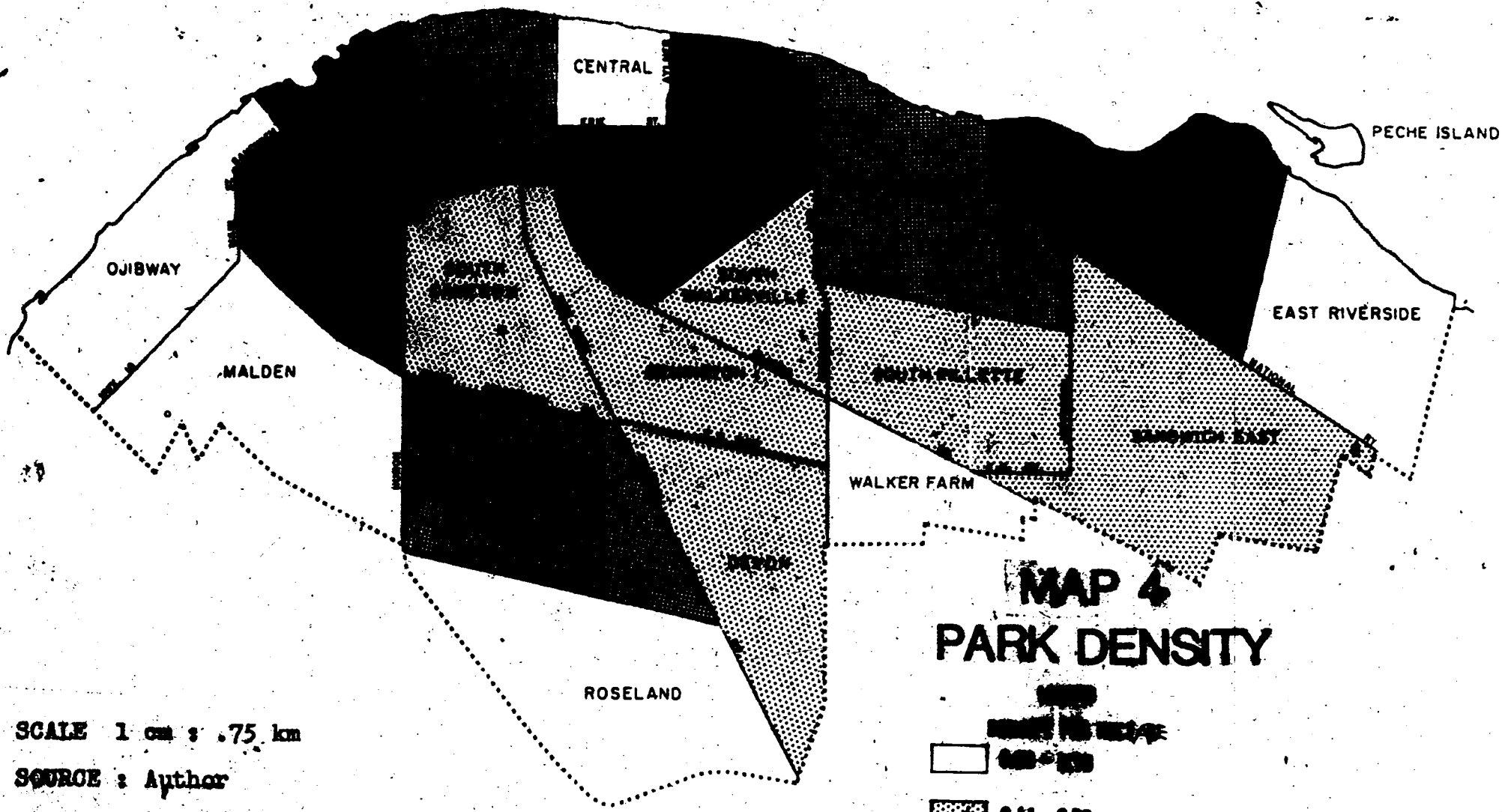
Average annual increase in Consumer Price Index of 11.27% between 1971 - 74.

FORMULA: 1971 Earnings Plus Cumulative Increase to 1976.

Table 14 indicates the relationship that was revealed between the independent and dependent variables.

It was assumed that local park density would correlate with the urban form of the planning districts. This assumption was proven sound. The data revealed that local park density was highest in those planning districts which had the highest density of housing units and the highest population densities. There was, however, no relationship between average family income and parkland density. This finding suggests that there is no relationship between parkland density and socio-economic status.

Map 4 illustrates the local park density in the various planning districts in the City of Windsor. The independent variables which correlated significantly with local park density, that being the variables of population density and density of housing units, are shown for each planning district on Maps 5 and 6. The visual correlation between the distribution of local park density and population density and density of housing units illustrated in these maps confirmed the previously discussed statistical findings. The hypothesis that local park density, which is the number of hectares of neighbourhood and community parkland per hectare of total area, is related to the urban form of the City of Windsor was, therefore, accepted. No relationship was, however, revealed between average income and parkland density and this suggests that no



MAP 4
PARK DENSITY

SCALE 1 cm : .75 km

SOURCE : Author

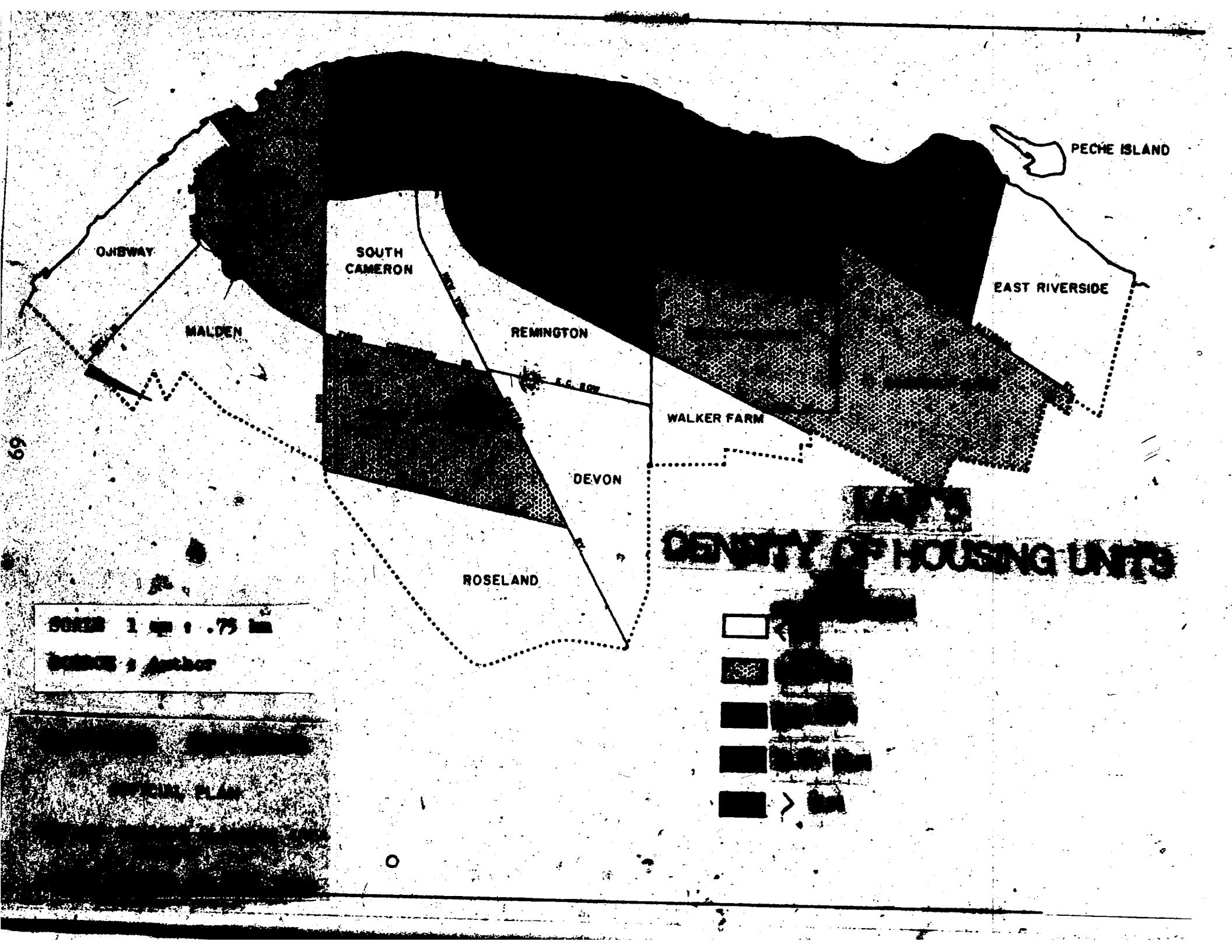
PLANNING DISTRICTS

OFFICIAL PLAN

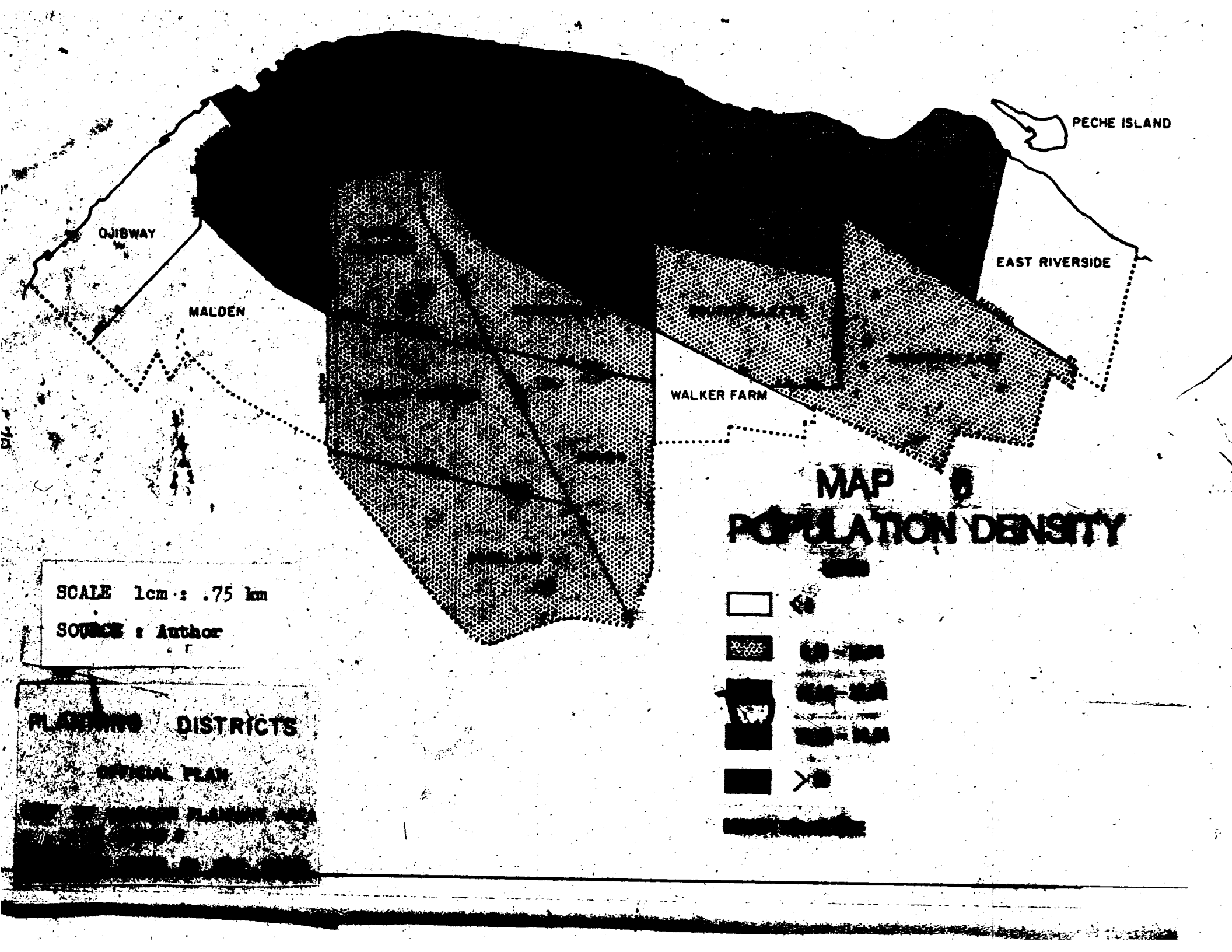
CITY OF WINDSOR PLANNING AREA

PREPARED BY

[illegible] OF PLANNING AND URBAN RENEWAL


PECHE ISLAND
OJIBWAY
SOUTH CAMERON
EAST RIVERSIDE
MALDEN
REMINGTON
WALKER FARM
DEVON
ROSELAND

69


PECHE ISLAND
OJIBWAY
MALDEN
EAST RIVERSIDE
WALKER FARM
MAP
POPULATION DENSITY
SCALE 1cm : .75 km
SOURCE : Author
DISTRICTS

T A B L E 14

RELATIONSHIP BETWEEN URBAN FORM AND PARK DENSITY

Independent Variables	r
Density of Housing Units	0.76
Population Density	0.75
Average Family Income	-0.08

NOTE: The Density of Housing Units and the Population Density Variables were significant at the .01 level.

SOURCE: Author

relationship exists between the socio-economic status and parkland density.

CHAPTER VI

CONCLUSION

The intent of this research was to investigate the adequacy of both the quantity and distribution of parkland in the City of Windsor. In order to do this, this study reviewed the historical development of the park system in the City of Windsor, identified deficiencies in neighbourhood and community parkland based on the City's local parkland standard, and, analyzed the relationship between the distribution of local parkland and the urban form of the City of Windsor.

The review of the development of the park system in Windsor through History revealed that the supply of parkland was very limited in the early 1900's. Just as the legislation providing for the acquisition of land for parks improved over the years, the quantity of parkland in the City grew slowly, and, in general, the number of acres of parkland per 1000 persons did expand. In addition, the deficiency in overall parkland quantity, according to the City of Windsor's parkland standard, decreased over the years. A deficiency in overall parkland quantity does, however, still exist in the City of Windsor.

The majority of the parks acquired since 1930 were located in the areas in the periphery of the City. The

supply of parks in the core of Windsor became increasingly more difficult as the central City was largely built up. This would help to explain why, in general, the provision of all parkland as it relates to population is more adequate in the planning districts furthest from the downtown area.

Based on the City of Windsor's standards for local parkland, it was determined that the City of Windsor is inadequate in parkland which serves a neighbourhood and community function. Once again, the planning districts, which according to parkland standards, had the lowest deficiencies in local parkland are, in general, those in the periphery areas of the City.

The findings of this research were similar to those which were expected with regard to the relationship between urban form and local park density. It was hypothesized that local park density is related to the urban form of the City of Windsor. In essence, the discoveries of this research suggest that there is more parkland per area of land in districts which are characteristic of a high population density and a high density of housing units. No relationship was found between the planning districts which have a high average income and the planning districts which have higher parkland densities. The spatial generalizations that park density is greatest in the planning districts which have the highest population densities and the highest densities

of owner occupied housing units was, therefore, formulated.

This research did not take into consideration a number of factors which were indirectly related to the hypothesis and which could have altered the findings of the author. One such factor is the concept of the quality of the local parkland. It is quite possible that the local parkland which is located closest to the areas of low socio-economic status is of poor quality. The fact that local park density is related to the urban form of the City means very little if this neighbourhood and community parkland is tiny, poorly maintained and overcrowded. It is a recommendation of the author that further research be conducted to determine the relationship between the quality of the parkland in the City of Windsor and the urban form of the City.

Apart from the fact that it was determined that because local park density is related to the urban form of the City of Windsor, neighbourhood and community parks are likely to be closer to the residents of the districts with high population and housing unit densities, the notion of accessibility of local parkland was not dealt with. The availability of parks to the population it serves is a key element to any park system. In order to further explain the relationship between the location of the neighbourhood and community parks to the residents, it is suggested that the entire concept of the accessibility of these parks be investigated.

The accessibility of a park, no doubt affects the use of that park and this leads the author to recommend another worthwhile area of study. The use, non-use notion of parks has recently been discussed in the literature. Few appraisals of the use of parks have, however, taken place over the years. The use of parks may be associated with the distribution, quality and accessibility of parks and this concept should be studied further.

Finally, the neighbourhood and community parkland was the parkland which was dealt with in this research. The open space which surrounds the schools in the City also very much serves a local park function. This open space cannot, however, be considered of a permanent nature and was, for this reason, not included in the statistical analysis. It is a recommendation of the author that the existing school property in the City of Windsor, the effects of this space on the park system, and, the implications of the loss of this space be investigated so that further understanding of the park system and the residents it serves can be gained.

A P P E N D I X ' A '

METRIC TRANSFORMATIONS

1 acre = .40 hectares

2.47 acres = 1.00 hectares

4.00 acres = 1.62 hectares (neighbourhood and community park land standard)

10 acres = 4.05 hectares

A P P E N D I X ' B '

DEFINITION OF TERMS

Parkland - Any area permanently dedicated to the recreation use and generally characterized by its natural, historic or landscape features; it is used for both passive and active forms of recreation and may be designated to serve the residents of a municipality.

Open Space - A general term used to designate land used by both public and private agencies where buildings cover a very small portion of the area.

Park Standards - A measure of the quantity of park a established or to be established in a municipality.

Official Plan - An official document prepared under the authority of The Ontario Planning Act, to guide the development of an area along the most desirable lines. It is a statement by the municipal council regarding the nature and form of development that are desired and includes, among other things, a program indicating the approximate amount and general location of land that will be required over the years for park purposes. Such a program must be related to financial capabilities of the municipality and the anticipated growth, distribution and characteristics of the population. It should establish the principles that will guide the sequence in which the various areas will be acquired and developed.

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