RECREATION AND CONSERVATION: A PROGRAMME TO PRESERVE OPEN SPACES IN THE EXPANDING METROPOLITAN AREA

by

THOMAS JENKINSON

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Department of

COMMUNITY AND REGIONAL PLANNING

We accept this thesis as conforming to the required standard

Members of the Department of
Community and Regional Planning

THE UNIVERSITY OF BRITISH COLUMBIA

April, 1961
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Department of Community Regional Planning
The University of British Columbia, Vancouver 8, Canada.
Date May 9, 1961
ABSTRACT

The purpose of this thesis is twofold; first, to focus attention on the problems presently confronting metropolitan area open space and secondly, to develop a programme of implementation that can be utilized within the metropolitan area's framework of administration. Over the last several decades a wealth of material has been published on parks, both from the conservation and preservation aspect; recently there has been a slight shift of emphasis towards a study of outdoor recreation in relation to user's demands and overuse. But, in most instances the focus has been on either a broader level, such as provincial, state, or federal parks, or a narrower level, as in the case of city or neighbourhood recreation facilities. Yet, the most important urban area in North America, the metropolis, is not receiving proper attention and treatment.

The second consideration, probably the most significant, is that nothing on a comprehensive basis is being accomplished to specifically alleviate the situation in the metropolitan area. To be sure, programmes have been suggested, and each separate governmental authority is aware of certain of these problems. Some people have suggested zoning, the use of taxation and easements to mention but a few examples, to solve the open space dilemma. However, these devices are not sufficient if any progress is to be made against the indiscriminate affects of the market.
The solution suggested in this study is the use of a financial implementation technique administered by a comprehensive metropolitan government body. Thus, a start could be made towards improving the relationship of parks and open space to the growing urban population.

The approach of the study is basically one of considering all the ramifications involved in the discussion of the metropolitan community and the utilization of parks and open space. The first step is to bring to the reader's attention the open space problems that are currently being created because of the population expansion outwards into the suburbs and beyond and the unchecked application of "highest and best use" theory to all types of land. Sprawl, scatteration and disorganized land speculation have caused a real crisis in available and potential outdoor recreation sites.

The second step is a general appraisal of the affects of our changing living pattern on the demands and uses of open space. Here, the assumption is that open space has been accepted as being for the public good. The increased amount of leisure, higher income and greater mobility have all played a vital role in influencing outdoor recreation characteristics. As a further consideration, one factor that has largely been overlooked until recently is the need for natural spaces to ease mankind's emotional and psychological experiences.

Next an examination is made of ways and means now available for a public agency to conserve open spaces; these could be divided into three major elements, taxing powers, police powers and those of eminent domain. In this evaluation particular attention is paid to agricultural zoning, conser-
vation easments, and metropolitan government. Based on this survey, it is concluded that none of these methods are sufficiently comprehensive enough nor adequate financially to alleviate the growing deficiencies of open space in the metropolitan community.

The proposed solution consists of three major elements; first, the need for some form of metropolitan government; secondly, the financial programme utilizing the sharing of gasoline tax revenue as a means of providing an open space development fund; and thirdly, a metropolitan development programme establishing open space goals and objectives within the framework of a metropolitan master plan. To bring out the highlights of such a proposal a case study of the Vancouver Metropolitan Area is utilized.

The value of this study may be summed up in adding further knowledge to the study and examination of metropolitan problems, especially relative to outdoor recreation and open space. In essence it is an extended examination of the possible devices which can be applied to achieve positive planned results; at this level, the thesis has attempted to furnish another possible means of implementing a comprehensive metropolitan open space development programme. If some stimulation is engendered amongst those people concerned with solving our urban problems, then this thesis may have had some value.

Today, the urban dweller is faced with a perplexing challenge, if he is to achieve a fuller, more satisfying life. Public effort must be enlivened to counteract the disturbing land forces that are at work. Allowing these pressures to continue will not only disturb and destroy the natural countryside but will totally unravel any sense of urban and rural balance. We will be left
with a monotonous patchwork pattern of tract houses, cement freeways, asphalt parking areas and geometrically designed buildings instead of selected areas of woodlands, streams, and meadows.

APPROVED:
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When first contemplating this study, it was realized that a wealth of material has been written on conservation and preservation of open spaces and parks. However, it was felt that most reports have tended to emphasize the need of general open space or refer specifically to the problems of over-use. The reason in writing this thesis is to focus the study on the most important urban area in North America: the Metropolis. The examination not only entails discussing the open space difficulties facing metropolitan citizens but proposing a reasonable means of alleviating a growing unsatisfactory situation on a comprehensive basis. Such a programme is envisaged, also, because of the shortage of time that is available to counteract the increasing losses of parks and open spaces to residential and industrial uses.

Before introducing the subject of the thesis it is necessary to qualify several important factors that may be misconstrued by the reader. In the first place, it is not proposed to discuss standards or dimensions of parks, playgrounds or other recreation areas, either from the point of view of neighbourhoods, city, provincial or federal levels. While such an investigation would be of significant value as a great deal of research is still required on the subject, this topic will not be discussed here. It might be added that there is a breadth of scope available for intensive examination of this phase of recreation planning, and any contribution towards a better understanding of this problem would be of immense value. Secondly, the theme of the thesis
is not to make a case for the preservation and conservation of open space as it has been assumed that such a point of view has met with general public acceptance. Experts in the field of recreation and conservation have published considerable amounts of worthwhile material bringing the situation as it exists today to light.

Before proceeding into the body of the study, it is necessary to preface the principal subject of the thesis by the following qualifying remark: it should be noted that much of the reference material used in preparing this dissertation has been drawn from American experience and sources. The lack of suitable Canadian data has made this action obligatory. However, it has been assumed, that the present conditions in the Canadian metropolitan urban scene are similar to those in the United States.

Finally, it would not be fitting if acknowledgment was not given to the various people who have made this thesis a reality. First, thanks are extended to Professor I. M. Robinson for giving his time, valuable and constructive advice, supervision and guidance; to Professor H. P. Oberlander for his interest, professional assistance and criticism; to Miss Melva J. Dwyer, the Fine Arts Librarian, who was most helpful in securing research material and sources of reference data; and finally to all the various city, provincial and state park, recreation and conservation agencies who provided a wealth of valuable reference material and positive suggestions for developing the particular topic.
INTRODUCTION

Over the last few years there has been a growing concern about the loss of open spaces and the overuse of existing parks and outdoor recreation areas. Many public spirited organizations have been formed to facilitate the acquisition of critical natural sites, historic places and other points of interest; as well these groups have spent many hours bringing the true picture of current open space and park problems in front of the public.

Since World War I there have been growing pressures on present recreation facilities in addition to losses of potential areas. The real causes have been the skyrocketing population growth, coupled with a shorter work week, a higher per capita income and the independence of travel through the use of the automobile. The changing characteristics of living have caused a crisis in open space in every part of the countryside, but more particularly in the metropolitan community.

Various methods have been proposed and tried to deal with the crisis in open spaces, but these are all found wanting upon examination. The purpose of the thesis is to suggest an alternative approach; one that provides sufficient funds to develop an extensive open space programme within the framework of a metropolitan government.

Throughout the body of this thesis certain terms and concepts will continue to crop up from time to time and for clarity sake these should be defined before proceeding into the principal discussion:
**Metropolitan Open Spaces:** are parks, both for active and passive recreation, as well as natural open spaces that are and can be used by people residing in the metropolitan area. These parks are generally large and offer a variety of facilities. Some recreation authorities feel a minimum acreage of 100 should be adopted. Many of these locations will include wooded areas and other natural physical features. These parks and open spaces are not city facilities, smaller neighbourhood playgrounds or parks, nor are they provincial or federal parks. Their specific requirements are part of the "new" urban governmental organization's needs which contains the many local administrative units contiguous to and part of the central city. Such locations may be considered as weekend facilities, but more likely are daily use areas that can be easily reached by all the citizens of the metropolitan area.

**Metropolitan Region:** is generally considered to be an area where there is a high degree of functional, interdependence between the physical economic and social aspects of the community, which ties together a number of separate administrative organizations into a cohesive unit. Further, there is a progressive scale of specialization by districts and by functions which resolves itself into a hierarchy of centers usually with the focus being placed on one of the dominant centers.

**Land Use:** refers to the use that man individually or collectively makes of his physical environment including the resources and space which it offers. It is assumed that as population grows land areas will be needed for a variety of purposes; food production, urban development, recreation, road construction (and other forms of transportation), water conservation and forestry to name
the most important.

Recreation: may be defined in terms of both users and resources. Usually the recreation expenditures of the users are the interests and activities that occupy some of people's leisure time. Their interests and activities are entered into voluntarily for social, physical enjoyment and relaxation in order to educate and develop skills, to inspire creativity, to cultivate cultural and aesthetic sensitivity, and to relieve tension.

Leisure: invariably associated with recreation and implies a freedom of choice. Leisure is a matter of an individual's bent or taste, the outcome of a whole series of fundamental personality traits. There is no uniformity in the way that people spend their leisure, in a heterogeneous population various cultural groups will have different interests.

Conservation: defined as the planned management and wise use of natural resources. The aim is to co-operate with science and nature to increase their quality, quantity and availability throughout the years.

With reference to the principal subject, the purpose in dealing with conservation and preservation of open spaces has been to bring out two facets that have not had full enough treatment in most studies; the metropolitan area and a feasible means of implementing an outdoor recreation planning programme.

The study is organized as follows: initially, drawing from primarily the American scene a descriptive analysis will be undertaken of conditions as they exist today; a picture of declining rural lands and potential park sites. The emphasis will be placed on the metropolitan community, the
problems of sprawl and scattering and the over-use of existing facilities. These data will bring out clearly that there is a crisis in present open space as well as in the furnishing of future potential park sites. From this point, the chapter will lead into a discussion of the ramifications involved in the conflict of activities for available land with particular regards to outdoor recreation.

The second chapter is designed to cover some of the key factors involved in our changing way-of-life and its effects on outdoor recreation demands. The principal objective is to point out some of the critical reasons why there is a need to conserve open space in and around our metropolitan communities. As further evidence, an examination of the impact of shortages of open space on the psychological and physiological state of man are described in some detail.

Next, an evaluation and analysis is made of current and past legal ways and means of preserving open space (in North America). This study is divided into three separate categories, police powers, taxing powers, and eminent domain with special emphasis on agricultural zoning and conservation easements. From this appraisal the evaluation focuses on the solution of initiating metropolitan government as a means of curing the park and open space deficiencies. Each of the more important aspects are critically examined to determine the particular reason for rejecting such solutions.

Chapter IV deals with the formulation of a suggested programme for preserving open space in the metropolitan area. First, by the application of metropolitan government with its associated public service departments, and secondly by devising a financial formula that will make potential park and open
space acquisition feasible. Coupled with these aspects should be a well conceived park development programme based on thorough and comprehensive research of the physical area and the residents' outdoor recreation demands.

In order to bring such a programme into focus, the Vancouver Metropolitan Area has been utilized as a case study. The objective of this analysis is to bring out the problems that exist in a specific metropolitan community, the corrective solutions that have been made and finally the actual applicability of the recommended method as outlined in Chapter IV.

By utilizing the above interpretation of the problems facing the urban community it is hoped to contribute further planning techniques that can be put to work in improving urban living conditions. The goal has been an attempt to add to a better understanding of the need to preserve and plan for open spaces as well as providing a feasible method of achieving this.
CHAPTER I

CURRENT METROPOLITAN SITUATION

Several major changes have been underway over the last few years in the North American landscape. Cities are growing at a rapid rate and are spreading out over the land surrounding the present urban centers. An extensive network of superhighways is transforming the rural countryside into a patchwork of concrete and farm areas as well as affecting land use over large regions. Finally, and of prime concern to the thesis is that larger areas of land are being utilized for recreation purposes.

Since the turn of the century there has been a rapid transition in the North American economy from one primarily dependent on agricultural pursuits to one dominated by industrial activities. The factory system has created a need for a mass labour force and as a consequence a stimulation to the movement of rural people to the cities. Thus, since the early 1900's the majority of the population increase has been in the urban concentrations. However, the real effects of this population phenomenon were not felt until the conclusion of World War II when the accelerated loss in land both for agriculture and other open space uses occasioned public and official alarm. Since then, open spaces of all kinds have been disappearing with increasing rapidity in and around the cities where the growth is the greatest and the outward expansion the strongest.
Two driving forces seem to underlie the outward thrust to the perimeter of urban areas; the population explosion and the search for less congested business and dwelling sites. The flight to the suburbs has been both an attempt to elude the congestion of the central city and also a response to the demand for extra space for additional population. The advent of mass commuting and the automobile has made such a movement both practical and possible. Suburban living has meant that many more thousands of people have been able to purchase single-family detached dwellings that are located on lots of a size large enough to provide outdoor space. The further out people have moved the more space they have wanted around them; for instance, a century ago a population increase of 1,000 people required ten acres; thirty years ago the requirements were thirty acres; today a space of 100 - 200 acres is needed.\textsuperscript{1} In this same time interval the size of the average building lot has steadily increased from about thirty feet in the early 1900's to sixty feet and even larger today. This recent growth of population has necessitated a re-evaluation of many of the subjects pertaining to natural resources.

This population growth has a complimentary demand for more outdoor recreation facilities and park lands yet here is where the choice sites are being lost to the residential and industrial inroads. To illustrate the magnitude of the problem it is proposed to examine the urban situation as it exists today in order to bring out some of the more pressing open space problems. In this manner, the reader will be able to judge for himself in an impartial manner the true impact of urban encroachment on all types of open spaces with particular attention to those pertaining to outdoor recreation.
In addition, while interpreting some of the relevant material, reference will be made to the loss of agricultural lands on the fringe areas of the urban communities. The application of this land use should be clarified as it is realized that there are two parts of this subject, one as a food producer and the other as a greenbelt or potential outdoor recreation area. Most discussions have tended to center on the question of food production, however, the objective of this thesis is not to appraise this condition. It is felt that not enough concern has been shown about the potential of agricultural lands as greenbelts and open spaces. Thus, when studied, agricultural lands will be thought of primarily in the context of potential or present open spaces.

**Trend to Metropolitan Growth**

Turning first, to population growth it can be seen that the trend has been firmly established in which metropolitan areas have continued to grow more rapidly than rural communities. The United States Census, in 1950, recognized this new urban organization and compiled statistics for the "standard metropolitan area" (counties or groups of counties surrounding cities of 50,000 or over). At that time these units contained fifty-six percent of the nation's population and by 1956 the proportion had grown to fifty-nine percent. Probably more startling are the figures produced by the American Institute of Park Executives in which metropolitan areas accounted for seventy-three percent of the total population growth between 1900 - 1950; eighty-one percent between 1940 - 1950; and ninety-seven percent between 1950 - 1955.

The central portions of most of the older cities can absorb population only through the slow and costly process of redevelopment, thus most of the
FIGURE 1. MAJOR URBAN LAND USE AREAS IN 1950 AND PROSPECTIVELY FOR 2000 - U.S.A.

Areas - most of the land was used for urban use - 1950
Areas - most expansion of urban land use by 1970

SOURCE: LAND FOR THE FUTURE, p. 113
growth must take place in the outskirts of the metropolitan areas. By 1975 it is estimated that about 60,000,000 more people will be added to the metropolitan communities, and of these about 10,000,000 will be absorbed by the central cities, leaving 50,000,000 further residents to locate in the suburbs. It might also be added that this phenomena is not limited to a few parts of North America, but is evident everywhere in the U. S. or Canada. Figure 1, illustrates the major urban land use areas in the U.S. for 1950 and for the year 2000.

The most relevant and up-to-date figures on the Canadian urban scene have been compiled by a Royal Commission studying Canada's economic prospects, known as the Gordon Commission. Two sets of figures were utilized; those compiled by the Dominion Bureau of Statistics and those from the Bank of Nova Scotia which were based on the census data. The major difference was in the allocation of areas to metropolitan regions, for example, the 1951 census listed fifteen areas, all but two of which had populations of more than 100,000 (fourteen if excluding St. John's). The Bank of Nova Scotia excluded Newfoundland covering the fourteen metropolitan areas plus twenty other major urban areas with populations over 40,000. The data shows that in 1921 thirty-eight percent of Canada lived in thirty-five metropolitan areas; by 1941 the figure had grown to forty-four percent; and by 1951 the total was forty-seven percent. By 1980, it was assumed that the total population of Canada, exclusive of the Yukon and Northwest Territories will reach 26,650,000, an increase of 12,666,000 over 1951. A more detailed account of the appraisal can be seen in the following table:
TABLE I

FORECAST OR URBAN RURAL DISTRIBUTION OF POPULATION

1. POPULATION IN THOUSANDS

<table>
<thead>
<tr>
<th></th>
<th>D.B.S.</th>
<th>Bank of Nova Scotia</th>
<th>Forecast</th>
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</thead>
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<tr>
<td>15 Metropolises</td>
<td>5,190</td>
<td>5,228</td>
<td>12,000</td>
</tr>
<tr>
<td>21 other major urban places</td>
<td>3,432</td>
<td>1,261</td>
<td>3,000</td>
</tr>
<tr>
<td>Other urban</td>
<td>(2,134) residual</td>
<td>(2,134) residual</td>
<td>6,010 res.</td>
</tr>
<tr>
<td>Rural non-farm</td>
<td>2,534</td>
<td>2,534 (D.B.S.)</td>
<td>3,294</td>
</tr>
<tr>
<td>Rural farm</td>
<td>2,827</td>
<td>2,827 (D.B.S.)</td>
<td>72,346</td>
</tr>
<tr>
<td>Total pop. of Canada (excl. Yukon &amp; N.W.T.)</td>
<td>13,984</td>
<td>13,984</td>
<td>26,650</td>
</tr>
</tbody>
</table>

2. PERCENTAGE DISTRIBUTION OF POP.

<table>
<thead>
<tr>
<th></th>
<th>1951</th>
<th>1980</th>
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<tr>
<td>15 Metropolises</td>
<td>37%</td>
<td>45%</td>
</tr>
<tr>
<td>21 other major urban places</td>
<td>25%</td>
<td>11%</td>
</tr>
<tr>
<td>Other urban</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>Rural non-farm</td>
<td>18%</td>
<td>12%</td>
</tr>
<tr>
<td>Rural farm</td>
<td>20%</td>
<td>9%</td>
</tr>
<tr>
<td>Total pop. of Canada</td>
<td>100%</td>
<td>100%</td>
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3. PERCENTAGE CHANGES 1951-1980

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<tr>
<td>15 Metropolises</td>
<td>131%</td>
<td>130%</td>
</tr>
<tr>
<td>21 other major urban places</td>
<td>163%</td>
<td>138%</td>
</tr>
<tr>
<td>Other urban</td>
<td>182%</td>
<td></td>
</tr>
<tr>
<td>Rural non-farm</td>
<td>30%</td>
<td>30% (1950 D.B.S.)</td>
</tr>
<tr>
<td>Rural farm</td>
<td>-17%</td>
<td>-17% (1951 D.B.S.)</td>
</tr>
<tr>
<td>Total population of Canada</td>
<td>91%</td>
<td>91%</td>
</tr>
</tbody>
</table>

Source: Housing and Social Capital, Jan., 1957, p. 32.

Even more startling are the figures breaking down Canada's urban growth by periods. These are shown in the table below;
TABLE II
FORECAST OF URBAN GROWTH BY PERIODS

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<tbody>
<tr>
<td>Urban population (000)</td>
<td>8,623</td>
<td>14,269</td>
<td>16,292</td>
<td>18,506</td>
<td>21,010</td>
</tr>
<tr>
<td>Rural non-farm pop. (000)</td>
<td>2,534</td>
<td>2,866</td>
<td>2,993</td>
<td>3,134</td>
<td>3,294</td>
</tr>
<tr>
<td>Rural farm pop. (000)</td>
<td>2,827</td>
<td>2,385</td>
<td>2,355</td>
<td>2,350</td>
<td>2,346</td>
</tr>
<tr>
<td>Total population (excluding Yukon &amp; N.W.T.)</td>
<td>13,984</td>
<td>19,520</td>
<td>21,640</td>
<td>23,990</td>
<td>26,650</td>
</tr>
<tr>
<td>Urban pop. as % of total</td>
<td>62%</td>
<td>73%</td>
<td>75%</td>
<td>77%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Source: Housing and Social Capital, Jan., 1957, p. 33.

The Commission's conclusion is worth mentioning here, in which it is stated that if more than half the people in Canada are going to live in the urban areas of 100,000 or more it would seem essential that the conditions of urban life be faced and that as much energy as possible be devoted to the improvement of the cities. The preservation and conservation of parks and open spaces certainly would apply to such decisions.

The pattern of this population growth has not been a uniform, systematic expansion of urban facilities outwards from the central city; in fact in many instances the opposite has happened: scatteration, leap-frogging and by-passed "dead" land. In most cases, the common term used to describe the occurrence is "urban sprawl". William Whyte portrays the scene as one in which huge patches of green countryside are being turned into vast smog-filled deserts at the rate of 3,000 acres per day that are neither city, suburb nor country. It is not merely that the countryside is receding, in the great expansion of metropolitan areas; what is happening is that the subdivisions of one city are beginning to meet up with the subdivisions of another. Land is being squandered because
of this pattern of growth in which urban development leap-frogs from one location to another. The result is an aesthetically unattractive city of row after row of houses with park and other recreation areas conspicuous by their absence.

**Urban Sprawl**

There are many varying opinions as to the ramifications and causes of urban sprawl. One, of particular interest, attributes the cause to the inability of the land developers to assemble at a profitable price the tracts they would wish to buy first, so they have to leap-frog out to find land cheap enough to build on, here, there and everywhere. The whole process negates and frustrates the basic purposes of the city which is to let more people live and work close together utilizing and enjoying the maximum efficiency of the community. One of the greatest criticisms is related to the future of such developments and to what they will be like in twenty to forty years. The question is: how fast will these communities deteriorate and become obsolescent and potential slums? Unlike the present day slums of the central cities, the outlying districts do not have the advantage of being close in towards the focus of the metropolitan structure.

On the fringe of the community the "conflict" between the suburbs and the farms is most acute. Here, the farmers are in a precarious position, in that they own the most desirable open spaces that are left near the metro areas. However, they are beset with a host of problems from an increasing tax rate required to provide the urban services that are needed by the new subdivisions; services which the farmer does not require or want but must help to pay for.
When the tax assessor begins to consider the farmer's land as potential urban real estate the assessed value is boosted. As farmers are enticed by the high bidding prices and begin to sell off parcels of land, the checkerboard pattern of land becomes more difficult to farm effectively.

The Lower Mainland Regional Planning Board of B. C. in a recent study came to certain conclusions pertaining to urban sprawl. In an analysis of one of the areas in which rapid growth has been experienced their study revealed that sprawl density was 2.3 persons per acre as compared to 5.7 persons per acre for suburban land use and 14.4 persons per acre for urban use. What was even more critical in this area was that in 1954 there were 8,500 unoccupied lots of less than one acre in size, sufficient in themselves to accommodate estimated future growth for ten years hence. The result, from a purely urban viewpoint, is that to develop such areas on an economical and efficient manner would be out of the question. Here, the public body would be faced with inflated costs to provide the "necessary" urban services at densities that do not warrant such high level type of services. What is even more severe, is that much of the arable farmland is removed along with its valuable attribute of providing "breathing space" for the metropolitan residents. Such figures are not uncommon for many other communities throughout North America and yet here is where the need for natural areas and outdoor recreation spaces are the greatest.

The leading example of the problem of urban encroachment is in the State of California where some of the most fertile lands in North America are being lost to population growth. This case will be described briefly in order to
bring out the impeding diminution of two valuable resources, greenbelts as open spaces, and space for the valuable source of food for the entire nation.

In California, the problem is accentuated because of the limited amount of agricultural land and the types of high-quality specialty crops which are grown. An estimate in 1955 by the Soil Conservation Service found that a total of 2,500,000 acres (15.9% of all available cultivable land) had been converted to urban uses. More impressive is the land conversions related to the population growth. During the period 1940 - 1951 (land conversion) and the period 1940 - 1950 (for population growth) the state as a whole lost 142 acres of cultivable land for every 1,000 population increase. Even more significant is the relationship of agricultural land losses when compared to the two large urban complexed where almost two-thirds of the population reside. About twenty-five percent of the land in Los Angeles County (excluding mountains and desert areas) has shifted from rural to urban use between 1950 - 1954 while the population doubled from 2,650,000 to 5,000,000. By 1975 it is estimated that approximately fifty-eight percent of the agricultural land will be converted to urban uses.

Spatially, urbanization has made its greatest gains in the areas where the environment is most favourable for agriculture, for example, the central and south coast, Sacramento Valley, and the eastern San Joaquin Valley, and of course, the Los Angeles and the San Francisco Bay regions are the most critical. By 1957, almost eighty percent of the Los Angeles metropolitan area covered the Class I and Class II grades of soils (best quality); and in the Santa Barbara Valley, seventy percent of the available Class I soils were already in
urban use.

Even more startling is the figures used by Howard Gregor to illustrate the loss of croplands in California. In these calculations he has estimated a total "reservoir" of farmland at 8,000,000 acres and has applied to this total certain population adjustments to arrive at a usage of these areas for urban population. These adjustments were based on Professor Wendt of the University of California's quotation of 3.3 persons per household and Erling D. Solberg's 1.4 acres of living, transportation and working space for urban people and farmers. When these factors are related to the population estimate of California of 17,800,000 for 1965 almost 3,000,000 acres will have been taken over for urban purposes. If the current rate is extrapolated to 1975 practically all of the 8,000,000 acres will then have been absorbed by urban uses.

The objective of the above material is not to outline the losses of agricultural land pure and simply for the purpose of indicating the shortages of food-producing land that is becoming evident in some places. Rather the documentation has been proposed as a means of illustrating the amount of suitable open space (greenbelts) and possible outdoor recreation areas close to urban concentrations that is being overrun by residential construction.

The actual displacement of agricultural lands still does not give the whole picture about the potential reduction for the future. As already seen, the expanding urban areas prejudice agricultural land use beyond the actual built-up area. The more numerous and dispersed the expanding urban areas become the more land will be converted to urban uses and the faster will be the rate of urbanization. Such activities as peripheral expansion of the cen-
tral city, urban encirclement with the resultant formation of agricultural islands, leap-frogging of subdivisions, industrial dispersion, radial expansions along major avenues of traffic, and the growth of widely dispersed suburban tracts all play a role in the accelerated reduction of agricultural open spaces.

Outdoor Recreation Areas

At the present time very few studies have attempted to analyze the metropolitan outdoor recreation aspect with particular reference to losses in existing or potential land areas. However, it would seem reasonable to assume that much the same is happening to outdoor recreation sites as is occurring with agricultural open spaces. One of the leading authorities in recreation, Marion Clawson, has done some work in this field and for the purpose of this section his findings will be drawn on extensively. These studies are as follows: The Crisis in Outdoor Recreation, a reprint from American Forests; Land for the Future, published by Resources for the Future Inc., and The Dynamics of Park Demand, published by the Regional Plan Association.

In his analysis, Clawson studied each type of recreation area to ascertain its present acreage and then related to these figures an estimate of demand in order to arrive at the required number of acres. From the point of view of the thesis this data will be meaningful in assessing the problems that are being faced in providing satisfactory park and open space sites, especially near the metropolitan communities. In the city and county parks (user-oriented recreation areas) it was estimated that for the U. S. a four fold increase in demand would be forthcoming by the year 2,000 or approximately
5,000,000 acres. See Figure 2 for graphical presentation of relevant comparisons. His conclusion, that if the present rate of acquisition is carried out less than one-fifth of the necessary new land would be acquired. In Intermediate type recreation areas, mostly state parks, and federal reservoir areas, approximately 5,000,000 acres are needed now to meet the present potential demand and by the year 2,000, 35,000,000 acres would be considered as a minimum. \(^{15}\) The feeling here is, that the primary deterrent will be the cost of purchasing the necessary locations.

Turning specifically to urban concentrations, Clawson's findings indicate that municipal and urban parks in 1955 were probably less than one-half as large as was needed and even still smaller when compared with future needs. In this regard, the deduction was that park expansion in relation to growth of urban population since 1940 and the scarcity of parks in the growing new suburbs were assuming alarming proportions. \(^{16}\)

Some idea of the extent of usage and the demands that are being imposed on park facilities can be seen in Clawson's following conclusions. All forms of outdoor recreation are being used heavily today, more so than any other time in the history of the U. S. With specific reference to data on municipal parks, a result of four percent has been arrived at for a rate of new demand almost twice the rate of increase of population in some of these towns. For other types of recreation, the rates are faster. In most cases, there is insufficient acreage, the units are not properly located, or the site is inadequately improved. The most disquieting aspect of the situation is that inadequate provisions are being made for the future. In almost every case, the rate of ac-
Figure 2. Acreage, Facilities, and Other Data for Municipal and County Parks, 1910-1955 - U.S.A.

Source: Land for the Future, p. 162.
quisition has been definitely slower than the rate of growth of population to say nothing of the rate of demand.\textsuperscript{17}

In the above evaluation, an attempt has been made to consider the outdoor recreation situation as it now stands. The objective being to indicate some of the problems that are facing many growing urban communities. In a sense, the difficulty is similar to the loss of agricultural open spaces in that there is a definite need now but the shortages are growing as population and demand increases. In the future the discrepancies will be even larger between existing and required. Part of this difference will be the failure of the public bodies to secure the necessary sites now at a lower cost.

\textbf{Highway Rights-of-Way}

Another important influencing factor affecting open spaces will be new highway rights-of-way. The latest figures in the U. S. disclose that 41,000 miles of new interstate highway systems will be built. Although, estimates vary as to the amount of acres of land that will be taken up by this programme a total of between 1,500,000 and 2,000,000 acres appears to be a reasonable forecast.\textsuperscript{18} Almost two-thirds of the highway network will cross in locations where no highway exists, and in many cases the probable route chosen by the highway engineers will be through an area selected by planners for parkland in the built-up sections of the country or in flat or rolling countryside. The principal reason for the location selection is the lower land costs. A critical feature of the design aspect will be the location of the various interchanges which will have a marked effect on future establishment of communities. There could, also, be a detrimental effect on the towns and cities
formerly on the main roads but now being by-passed. A further complication from a planning point of view, will be the dispersal of factories, stores and people along these routes. The difficulty, both in the U. S. and Canada, is that very little local control is permitted in the routing of state or provincial highways. In the U. S. the Federal Highways Act leaves the routing of highways in the hands of the state highway officials, subject to federal acceptance. These people are concerned with efficiency and cost saving in a particular route not in the preservation of open spaces. There are many tragic examples in which the possible saving of money has prompted highway engineers to select rights-of-way that cut through metropolitan park sites. For example, in Portland, Oregon, it has been estimated that over the next twenty years, the city will lose twenty-one parks as a result of the new federal-aided highway programme. Similarly, in Los Angeles, one of the larger parks, Griffith Park will have 206 acres of usable land removed from park purposes by highway construction. 19

How do all the above activities affect open space needs? As everyone knows, recreation groups cannot invoke the economic rationale in defence of conservation of natural beauty areas. In the market it is extremely difficult to assess the dollar value of recreational areas in comparison with other land uses. Of course, what has happened in the metropolitan areas is that the once natural, rural scenes have now been enveloped by the metropolis. Resort areas have been overrun and river valleys and streams have been so badly dispoiled that much of their aesthetic qualities have been lost. The same occurrence has happened along miles of scenic shorelines and beach areas
where either public property is unavailable or the waters off the beaches have been polluted and made unfit for swimming and other water activities.

The examples that have been mentioned are not isolated cases, but only a cross-section of the events that are taking place all across the continent. These have been used merely to illustrate the magnitude of the problem when seen in greater detail. Other such occurrences are happening in any urban community where population is expanding towards the periphery of the core cities. The social cost is extremely high and will become steadily greater as time passes. Once removed, natural areas are difficult to restore except after years of time and careful park management. To meet the growing user's needs and recreation demands we cannot afford to wait, or pay the high cost of such inefficiencies.

This destruction of natural open spaces and agricultural greenbelts is of real concern to the community at large. It is even more crucial when considered within the metropolis where the majority of North America's people live. What has happened? We as citizens of these communities have permitted the real estate market to operate indiscriminately, thus, it is inevitable that open space will go into urban uses rather than be retained as natural areas.

The whole method of allowing urban growth to take place as it has, in a disorganized inefficient and costly manner to say nothing of the aesthetic destruction of the landscape reflects in some cases the lack of concern for open space in the metropolitan area. The inter-action of the real estate market with all the various variable forces at work has played havoc with the surroun-
ding countryside. The way that urban development is taking place is in a sense a sprawling of residential construction outwards in such a manner that choice recreation sites are in jeopardy. What is left is a pattern of mis-used land, inefficient for urban development and inappropriate for outdoor recreation and open space. Not only has the natural form of the land been destroyed but further complications are created such as flood run-offs caused by the unthinking builders cutting down stands of trees almost at will. Thus, in our emphasis on accommodating population growth we have put a lower value on open space.

From the standpoint of the agriculturalist the scatteration of urban sprawl is destroying any real chance of economically operating a farm unit. The stream valleys instead of serving as a natural flood control device become, unwittingly to some householders, a periodic flooding and drainage problem. On the hillsides, instead of natural open spaces, the land becomes denuded of natural foliage and is quickly replaced by houses constructed on "scenic" lots.

**Competition of Land Uses**

In order to fully appreciate the inter-play of the real-estate market and the application of the highest and best use principle to competing land uses it is proposed to discuss in some detail several of the aspects involved in considering open space in relation to other conflicting elements. Once the appraisal has been carried out we will be better able to understand the reasons for some of the difficulties that are presently facing rural lands and other natural open spaces.
Land economists such as Renne view each parcel of land as occupying a unique physical relationship with every other parcel of land. If in each community there exists a variety of land uses, each parcel is a focus of a complex but singular set of space relationships with the social and economic activities that are centered on all other parcels. The market attaches to each set of space relationships a special evaluation which largely determines the amount of money that will be bid for a particular site. Thus, certain sites will be more highly valued, for example, residential, because of certain space relationship such as convenience to shops, transportation, schools and so forth. To the economist, land will be pressed into use by the existence of a value, and the use of a particular plot of land will be finally determined in the operation of the market forces by the price paid and the decision as to what alternatives will yield the highest return. Most land economists, agree that the desire for the kinds of recreation that various types of land may provide is a natural and legitimate one and amply justifies public and private agencies as well as individuals owners assigning land to recreation uses. In many cases recreation lands are considered as being important because of the revenue that is derived from their use as well as making use of idle, or sub-marginal lands. These lands may be considered as complementary to forestry or agricultural uses, although in some instances the particular excellent scenic or location quality may even overrule the productive capacity of the soils.

One of the principal characteristics of recreation land is that it can act as a partial or non-competing land use. Probably the best example of
such a case would be the construction of trails through natural forests for
the use of hikers, hunters and horseback riders. Such recreational facili-
ties do not appreciably reduce the timber yields or the value of the forests.
A similar situation would exist in the use of water reservoirs for boating,
and other water sports. In other instances, waste and sub-marginal lands
are often used for recreational purposes, under such circumstances, the
physical nature of the terrain makes it impossible to effectively utilize the
area for agriculture or forestry.

Within the metropolitan area there are and will be times when open
spaces will be in direct conflict with other land uses. We have already seen
the competition that becomes evident when highway rights-of-way are imposed
on land either in parkland or considered as future greenbelt sites. A similar
case occurs when agricultural land again considered as open space is en-
croached upon by an expanding urban community. Within the present real es-
tate market the economic goals of the private individuals are expressed in
terms of the "highest and best" use that can be made of the land. As long as
this principle guides the transactions that are carried out in the market place
the overwhelming odds are in favour of urban development infringing on fur-
ther rural districts and open spaces.

An additional complication enters into any appraisal of the potential
market value of recreational open space in that the benefits to the individual
or the public from wise utilization of land for recreation purposes are ex-
tremely difficult to measure in terms of dollars and cents. Some recreation
experts feel that the provision of adequate recreation facilities reduces the
cost of police, prisons, courts, and the maintenance of hospitals and mental institutions because of better physical and mental health resulting from adequate recreation. However, it is impossible to measure such benefits accurately especially when these are combined with the prevailing American notion that outdoor recreation facilities, such as camping, hiking, fishing, hunting and picnicking should be free. This point of view restricts the operation of such recreation activities through private ownership on a cost-charge basis.

Marion Clawson has spent considerable time analyzing this whole subject and has derived a method of measuring the demand and value of outdoor recreation. His view has been, that if recreation is to play its proper role as a land use, and if it is customary to measure the economic or monetary gains and costs of each use of land or water, then recreation should be considered in the same manner as alternative uses of the resources. If so, then a value should be placed on the amount of recreation provided, and in this way a means will be available for comparing the importance of recreation with that of other uses of the same resources. In his approach he considers basically a "value added" concept and the use of demand curve analysis. The "value added" approach attempts to deduct from recreation spending what the supplier of vacation service would have to spend to get the materials to make such a service possible. Such figures would indicate the volume of business within a local area or larger political unit and would be comparable to similar data from other economic activities. However, it fails to answer the question how much is spent for the provision of recreation opportunity. The
Demand analysis really goes a step further in deriving useful material for measuring the value and demand.

In the final analysis, taxation also has a major influence on the use of land. In the case of farming, agricultural endeavours cannot be carried on economically once taxes rise much above the average of those in the total farming community. As has already been described, the advent of sprawl into rural areas, with its consequent demands for new schools and other public facilities results in an inevitable higher taxation rate for the farming community and with it a decline in agricultural activities. Most experts feel that if the land is to remain in agriculture, serving as a "greenbelt" near the large cities, and especially in metropolitan areas, there is a definite need for tax stability. If the tax level threatens to become too high the land is either forced into idelness, condemned to exploitation farming or is divided into parcels of land to be sold for residential lots. Thus, in most instances open space cannot compete with other land uses in the real estate market. Under such circumstances especially as at the present time it would seem highly unlikely that a great deal of open space, either potential parks on sites or greenbelts will be preserved if the market is left to act in an independent way, and is shaped mainly by economic forces, such as, premature sub-dividing, and land speculation in which large acreages are held off the market awaiting still higher prices.

From a planning point of view the above results are truly unsatisfactory. In this regard a recent workshop of the American Institute of Planners answered the question whether public open space should be considered as vacant
land subject to "higher use" in the following manner. When land is used for beneficial public purposes, or held for use in the near future (required for open space) it must not be considered as open space because there can be no higher use than out-of-doors recreation. This whole spectrum of study will be studied and evaluated in Chapter III where a complete appraisal is made of planning techniques used to conserve present available open space and the creation of new open space.

Most authorities in the field of recreation and park development feel the general situation in the future will be even more severe than at the present time. All areas will not be affected equally, the crisis will be most acute where the population increases in the metropolitan areas are growing the fastest. The American Institute of Park Executives estimate 48,000,000 acres as the amount of public land in the United States that might be available for recreation purposes. However, these sites are so distributed that only a small minority of the people in the U. S. will be able to derive much benefit from them. The general pattern is "the more the people the less the open space".

Turning specifically to the metropolitan area, Marion Clawson has calculated that less than one-quarter of the cities have enough nearby open space, and further, that a great many of the states do not even have enough intermediate recreation areas. He goes on to forecast that by the year 2,000 there will have been a westward movement of population, most of the increase will be urban, and in the east the large cities from southern Maine to northern Virginia will be strung out in an almost continuous zone of heavy settlement.
Other heavy concentrations can be expected around the Great Lakes, along the Gulf of Mexico and on the Pacific Coast.

Homer Hoyt, in discussing the changing pattern of urban growth, has developed projections up to the year 1975. Using the same year as the U. S. Census, and their middle estimate of population growth, 225,000,000, he forecasts a gain of 50,000,000 households or approximately 14,000,000 homes requiring about 10,000,000 to 14,000,000 acres of land (including schools, churches and other related areas. Hoyt also shows the likely effects of shopping centers and factory expansion on land needs in the suburbs. Such a demand as predicted will have a direct bearing on the various metropolitan suburban and fringe areas. If the real estate market is left to run its course the conservation and preservation of open spaces in and around the metropolitan communities will be a difficult task indeed.

Although the bulk of the data is American in origin, the same conclusions can be drawn for the Canadian scene, especially in regard to the growing urban complexes of Montreal, Toronto and Hamilton in the east and Vancouver in the West. Urban encroachment, with its associated "sprawl", the advent of the freeway and other road construction, have all tended to reduce Canada's metropolitan recreation facilities. The seriousness of this problem should not be taken lightly as these losses that are occurring today are prejudicing the future welfare of the people who will be residing in the urban complexes. Morally, we who are living today have an obligation to those who will follow to create the type of physical environment that will provide not only the basic needs but also the extra benefits so essential to
achieving a fulfilling and rewarding life. Open spaces and outdoor recreation certainly should rank high on such a programme.

The following chapter will contain a discussion of the public need and benefits to be derived from open space. Some additional time will also be devoted to a general examination of the changing characteristics of the urban way-of-life and its effect on the demands and needs for outdoor recreation.
REFERENCES

1 American Institute of Park Executives, *The Crisis in Open Land*, Oglebay Park, West Virginia, p. 12.


11 Ibid., p. 18.


13 Ibid., p. 316.


15 Marion Clawson, "The Crisis in Outdoor Recreation", Reprint from *American Forests*, March and April, 1959, p. 15.

17 Ibid., p. 184.


19 Ibid., p. 11.


22 Ibid., p. 472.


CHAPTER 11

THE NEED TO PRESERVE METROPOLITAN OPEN SPACES

In past civilizations, leisure, learning and sports were primarily reserved for the few idle rich, the masses of poor people had little time for such things. Even in the early pioneering days of North America the rigors of the environment impeded any activity other than working long and hard for both economic and physical survival. The early settlements had little spare time for any type of activity that did not add materially or economically to the well-being of the community. As a consequence of these beliefs, leisure and its pursuits were frowned upon and idleness was considered a moral sin. To be sure there were occasions when leisure was practiced and some people pursued tasks that were possibly thought of as not being materially productive, i.e., teaching, preaching and schooling. Enjoyment for the sake of fun, however, was either non-existent or tended to be carefully cloaked.

This situation has only been altered during the last century with the rise of rapid technological development throughout North America. The widespread enjoyment of both higher incomes and more leisure has been made possible because the output of goods and services has risen faster than the population. Most reliable statistics indicate that the real net
national product in the U. S. grew thirteen times between the decade 1869 - 1878, and the decade 1944 - 1953, while during the same period population grew only three times. The real product per capita of population therefore increased about four times in a little less than eighty years.  

In addition, the labour force expanded faster than the population, helping to raise the total output and also the level of living.

In the first three decades of this century leisure was looked upon mainly in terms of recreation. Recreation meant the physical reconditioning of an individual for the purpose of returning him in a refreshed condition to pursue a normal work day. These activities were directed towards a sublimation of impulses which were not purged at work or disapproved by society.

Margaret Mead in her analysis of the patterns of leisure, develops this same line of reasoning. Her conclusions were that within the typical American culture, leisure was something that had to be earned and re-earned, thus the cycle of activity followed a rhythm of work, virtue, and leisure. Within the model week, Monday to Friday were characterized by work; meals were for sustenance, and sleep was to prepare a person for work again. Saturday fell between the rhythms and was for fun and recreation and especially for getting fit so a person could work the following week, Sunday was truly a day of leisure, its purpose was either to make up for the fatigue of the week's work, the excess of the weekend, or to get ready for the following week. There was the feeling that if more
than the normal need of recreation was taken it was "unearned" time. Miss Mead's view was that a relaxation of this relationship between time spent in work and time spent in leisure often resulted in boredom, apathy and frantic attempts to fill up the spare time.

In the last twenty years there has been a material change in the role of leisure in the lives of people brought about by major economic and social changes. To begin with, life expectancy has been substantially increased, through the lowering of the death rate of small children to the lengthened life of older people. Concurrent with this fact has been an improvement in the health of all ages. Accompanying this rise in life expectancy, was the vast increase in man's productivity in an economic sense. This achievement of better health, greater energy, more physical capital and more knowledge has greatly increased man's output. The end result has been divided between higher income on the one hand and more leisure time on the other.

The financial surplus remaining after essential needs are met has brought recreation activities within reach of a great many of the people. There has been, as well, a changing attitude towards recreation, in fact, a direct break with the past traditions in which leisure and "idleness" was scorned. Today the mass of people are determined to raise their standard of living to the extent that they are able to participate in recreation and leisure-time activities.

In discussing recreation and leisure it must be remembered, as has already been implied, that these activities are not synonymous, though they are closely related. Some forms of leisure may be classified as
mere idleness, others may go so far as to be regarded as anti-social, for example, juvenile delinquency. Recreation has become today socially acceptable and is considered a constructive activity for the individual and the community. In satisfying recreation, the individual or group find interests and satisfaction which give expression to his or their talents and interests. The essential element is not what a person does, but rather the spirit in carrying out the activity and the satisfaction that is derived from it. In this regard, the nature of the recreation activities will vary depending on the family, age, income, health and many other factors.

**Changing-Way-of-Life**

Turning specifically to the changing way-of-life, a definite picture has unfolded especially in the era since the conclusion of the Second World War. Never in the history of the U.S. or Canada has so much interest been shown in recreation and the pursuits of leisure. The significance of this phenomena can best be explained by considering the major factors that have aided in affecting the demand for recreation. In line with the focus of this thesis, attention will be primarily directed to outdoor recreation specifically in relation to metropolitan areas, although other types of outdoor recreation will be referred to.

One of the measurements that has been used to judge the demand for outdoor recreation is "population changes". Researchers such as Marion Clawson have used census data to develop some very interesting
statistics which can be related to present and potential park needs. The general population data have been divided into three principal areas of study; total number of people, changes in age distribution, and internal population shifts.

In studying the demography of the United States the major question that needs answering is the problem of projecting the total population to a future date, taking into account the future development in the birth rate and the number of births. The history of the U.S. has shown an uninterrupted increase in total population since the late 1700's; however the percentage rate of growth has gradually declined from over thirty percent per decade at the beginning of the nineteenth century to approximately seven percent in the 1930's. The recovery from the depression years was slow until the onset of World War II, and by the close of the war the number of births had reached an all-time high of 3.8 million in 1947. Instead of dropping back to earlier levels the number of births has continued at a relatively high level and in 1956 the figure reached was almost 4.2 million births. Most demographers have explained this population increase in part by the lowering of the age of marriage and of childbearing, the increased proportion of women who now marry, the catching up in marriage postponed during the depression years, and the increase in the average fertility of married women.

Turning to the actual population projections, many authoritative forecasters have set 1975 as the target date, and have qualified their
estimates by assuming there will be no major war or other catastrophies, a death rate approximately the same as for 1956 and a level of immigration similar to present conditions. In order to arrive at a final estimate the trend curves are qualified by certain other assumptions pertaining to the rate of increase or possible decrease over the period up until 1975.

Whether the total population of the U.S. in 1975 will be 207 million or 228 million will depend how closely demographic developments correspond to the assumptions used. Marion Clawson in his evaluation of population growth uses the year 1985 as a target date and he predicts a population in the U.S. of 285 million based on similar assumptions.

The second major factor in the population analysis is the change in the distribution of age groups. Population distribution has shifted towards the older ages. This occurrence has been brought about because people are living longer, the death rate is declining and more children are living and reaching adulthood. The decrease in the birth rates during the depression, coupled with the rise in birth rates since World War II has created, also, an abnormal population distribution. The result of this phenomena has been a smaller proportion of the population in the most productive period of the work force between twenty and forty years of age. In comparison there are a disproportion share of the people in the younger and older categories. The relevant statistics show that in 1955 there were nearly twenty-five million teen-agers yet by 1975 this total will increase by another ten to seventeen
million. Another important element in the same examination, especially related to open space requirements, is the formation of households. Most authoritative projections, using the husband and wife, with or without children as a base estimate that the household formations will increase more rapidly after 1965; in this regard the data compiled show these were thirty-six million in 1955 with a forecasted total of forty-six to fifty million by 1975.

Such a trend in the distribution of population and the sharp rise in households will tax the recreation resources of the country as well as those located specifically in the metropolitan areas. The impending age distribution is particularly significant in determining the various types of future recreation needs.

The hours of work, with all its ramifications, have been a decided influence on recreation and outdoor space demands. This factor cannot be appraised entirely alone but must be associated with the consideration of real income per capita. This latter subject will be described in the following section. The technological advances coupled with increased productivity have had a decided bearing on improving the personal satisfaction of people in society today. An outgrowth of this economic advancement has been the steadily diminishing number of hours that are required for work during an average week. Since the turn of the century the average work has declined from about sixty hours a week, until soon after World War I when it reached fifty hours. It wasn't really until the depression years, with the large amount of unemployment and the emphasis on work-sharing that the
hour week became a reality. At about the same time another important element in the work cycle was introduced, the paid vacation. Although it did not gain wide acceptance until some time after, the initiation of such a practice had sweeping affects especially with reference to recreation and leisure. In 1931, over three quarters of all office and retail employees were receiving paid vacations. The biggest boom since then has been in the production workers field. An example of the increase can be seen in the gain in paid vacations, in which the whole of the U.S. working forces received in 1953, over 60 million weeks of vacation with pay as compared to less than 18 million in 1929. Of course, the major impetus came after the war when numerous labour agreements and legislation contained allowances for paid vacation periods ranging from one week to four depending on the length of service.

At the present time a considerable amount of study is being devoted to the subject of the optimum length of the work week. One of the primary objectives is to determine the point at which a worker would rather have more leisure than more money. The problem is exceedingly complex with a host of social and economic ramifications. However, many of the findings from U.S. plant studies indicate that most of the workers prefer a work week that is near to forty hours. Today, other qualifying influences have been brought to bear on the work week; such factors as automation and other advanced technological techniques will certainly affect the hours of work, the productivity of manpower, and the size of work force needed. Such factors
cannot be overlooked in any future consideration of the potential of leisure or recreation needs. Another associated and extremely disturbing tendency in present economic conditions is the substantial amount of unemployment that has been steadily growing since the Korean War. In part the decrease in the total employed population can be explained as being the result of the accelerated business management programme of mechanization and automation. The consequences, of course, are only a matter of conjecture; however, there does appear to be a possibility that public opinion will demand a sharing of the available work among more people by decreasing the work week. The future trend is somewhat uncertain, although there would seem to be every indication of an inevitable decrease in the hours of work. Marion Clawson, in assessing the future demand for leisure, has estimated that by 1985 the average length of the work week will be thirty-two hours and by the year 2000 the hours will be further reduced to twenty-eight. Most experts are of the opinion that there is little expectation that a further reduction below twenty-eight hours will take place.

In considering the future work schedule there are a variety of choices available, although three might be thought of as being the most acceptable: a shorter work week; a shorter work day; or a longer vacation. If a thirty-two hour work week is approved by both management and labour, by 1985 the reduction of eight hours from a forty hour week could result in either one hour and thirty-six minutes less per day (same number of days); a possible six and one-half hour day; four days instead of five days; or the
present hours and days per week and fifty-two more paid vacation days (including the present two to three weeks). In practice there will probably be some change of form in all three factors.

The real problem, from the point of view of providing recreation activities is what will be the extent of each of the above possibilities. Certainly, technical consideration will tend to limit the length of time any skilled or highly qualified employee may be away from his job. There are family considerations that will tend to impose restrictions on certain lengthy vacation periods, as will the school function for the children. In addition, some firms cannot spare employees for great lengths of time during the summer period.

A consultant from Victor Gruen and Associates has developed an interesting proposal by suggesting an eight hour day, five days a week with one week paid vacation for every three months worked; one month for every year; and six months for every five years. Whatever the final distribution will be the effect on recreation and open space needs will be varied and of considerable magnitude.

An extremely important aspect in the changing North American way-of-life has been the increase in the average per capita real income. The rate of growth has been somewhat irregular, as there have been periods of decline, such as the depression, but the trend has been generally upward. Since the successful culmination of the Second Great War the gain has been more profound, even with the rise in the cost of living and the diminution of the purchasing power of the dollar. Cumulatively the effect has been a steady ex-
pansion in per capita income of a considerable value when viewed on a long-term basis. For example in 1955, personal income was $1,865 per capita, and at a long-term rate of one and nine-tenth percent per year by 1985 the figure reached would be $3,285 in terms of the same prices. Possibly more spectacular are the figures that show the total increase in consumer's income up from $160 billion dollars to $170 billion dollars just after the war to $250 billion dollars in 1953, even though about one half of the increase was due to price rises.

It has often been said that the share of the consumer’s income devoted to recreation and leisure behaves as no other major consumer market does. Most studies on the subject reveal that the share of recreation and leisure start rising at an average income of between $3,000 to $4,000 and from this point it keeps steadily climbing. Fortune Magazine’s evaluation in 1953 brought out that over forty-five percent of the family units in the U.S. made over $4,000 and garnered over seventy-two percent of the nation's income. A further statistic indicated that nearly one half of the U.S.'s fifty-one million family units and nearly three-quarters of the income were on the up slope of the leisure market curve. In this regard there are really two qualifications that should be kept in mind; first it is generally agreed that as people achieve higher incomes all indications are that they will spend a larger proportion (absolute sum) on recreation. The real difficulty lies in the relation between recreation and income because of the varied definitions pertaining to recreation. Thus, any data on recreation will tend to have
certain deficiencies because of the lack of agreement on which activities are to be grouped under this category. The other aspect is related to leisure spending not reaching its full potential as would have been presumed. The partial answer lies in the general income shuffling brought about by taxation and other factors that has somewhat retarded the recreation spending of people in the upper income brackets.

Even with the general disagreement as to which activities should be allocated to recreation, there is merit in studying the recent trends and their potential affect on outdoor recreation demands. Since the beginning of the 1950's the total admissions to all spectator sports and amusements has declined, figures for period between 1947 - 1953 indicate a drop in admissions from $2 billion to $1.6 billion at the same time that population fourteen years and over increased by seven percent; prices by sixteen percent and consumer's by almost one-half. The trend definitely appeared to be towards active participation in various activities rather than as a spectator. This premise is further strengthened by data that pertains to the sale of various types of sporting goods equipment as well as other leisure-type facilities. From the point of view of this study the figures that are of principal significance relate to a classification of goods known as "wheeled goods"; these according to the Fortune Magazine Report, include cameras, sporting arms, fishing rods, reels, golf clubs and so forth. For the time interval 1947 - 1953 the expenditures for the above items grew from $820 million to one billion dollars; at the same time, boating expenditures increased from $510 million to $800
While this material does not reflect completely the total expenditures these figures are indicators of what outdoor recreation of all types can expect from the public in the future. See Table 3 for a more complete description of personal consumption expenditures.

The last element of importance in studying the changing pattern of living relates to the expansion of travel and mobility. Since the turn of the century the average citizen of North America has become increasingly mobile and less attached to the local area around his home and work place. Statistics disclose that in 1922, the average per capita travel was 1600 miles of which the automobile provided one-half of the total transportation; during the ensuing twenty years the improvement in quality and lowered cost of cars resulted in greater mobility and by 1941 the per capita annual travel had reached 4,660 miles of which eighty-six percent was by automobile. Since the end of the war and as of 1956 the average annual travel per capita was up to 5,087 miles of which eighty-seven percent was automobile travel and three percent air. Although, it is difficult to judge how much of this accelerated travel was devoted to recreation, it can be safely assumed that a good proportion of it would be for this purpose. The future outlook, from authoritative sources will be for more widespread use of the automobile, as well as car ownership and more families owning two vehicles. Coupled with the expansion of vehicular traffic will be the enormous enlargement of airplane service and travel.
TABLE 3
PERSONAL CONSUMPTION EXPENDITURES FOR RECREATION
ACCORDING TO DIFFERENT DEFINITIONS - U.S.A.

(million dollars)

Expenditure (in current dollars) as estimated by:

<table>
<thead>
<tr>
<th>Item of Expenditure</th>
<th>Dewhurst(^1) (1952)</th>
<th>Department of Commerce(^2) (1952)</th>
<th>Fortune Magazine(^3) (1953)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports equipment</td>
<td>2,153</td>
<td>2,279</td>
<td>3,330</td>
</tr>
<tr>
<td>nondurable toys &amp; sports supplies</td>
<td>1,284</td>
<td>1,164</td>
<td></td>
</tr>
<tr>
<td>wheel goods, durable toys, etc.</td>
<td>790</td>
<td>1,115</td>
<td></td>
</tr>
<tr>
<td>boats &amp; pleas. craft</td>
<td>79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio, Television &amp; Musical Instruments</td>
<td>2,800</td>
<td>2,576</td>
<td>2,710</td>
</tr>
<tr>
<td>purchases</td>
<td>2,324</td>
<td>2,100</td>
<td></td>
</tr>
<tr>
<td>repairs</td>
<td>476</td>
<td>476</td>
<td></td>
</tr>
<tr>
<td>Participant Recreation</td>
<td>867</td>
<td>839</td>
<td></td>
</tr>
<tr>
<td>parimutual net rec's. &amp; coin machines</td>
<td>419</td>
<td>4</td>
<td>327</td>
</tr>
<tr>
<td>billiards &amp; bowling</td>
<td>129</td>
<td></td>
<td>2,200</td>
</tr>
<tr>
<td>golf</td>
<td>169</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spectator Amusements</td>
<td>1,876</td>
<td>1,691</td>
<td></td>
</tr>
<tr>
<td>motion pic. theatres</td>
<td>1,134</td>
<td>1,284</td>
<td></td>
</tr>
<tr>
<td>legitimate theatre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>miscellaneous</td>
<td>474</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>spectator sports</td>
<td>268</td>
<td>222</td>
<td></td>
</tr>
<tr>
<td>Organiz's. &amp; Clubs</td>
<td>556</td>
<td>511</td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>888</td>
<td>2,120</td>
<td></td>
</tr>
<tr>
<td>books &amp; maps</td>
<td></td>
<td>504</td>
<td>3,280</td>
</tr>
<tr>
<td>mag., newspapers, sheet music</td>
<td></td>
<td>1,616</td>
<td></td>
</tr>
<tr>
<td>Flowers &amp; Plants</td>
<td>836</td>
<td>641</td>
<td></td>
</tr>
<tr>
<td>other</td>
<td>513</td>
<td>717</td>
<td></td>
</tr>
<tr>
<td>Dining Out</td>
<td></td>
<td></td>
<td>1,030</td>
</tr>
<tr>
<td>Alcoholic Beverages</td>
<td></td>
<td></td>
<td>8,860</td>
</tr>
<tr>
<td>Vac., weekends &amp; foreign travel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10,489</td>
<td>11,374</td>
<td>9,190</td>
</tr>
</tbody>
</table>

4. Parimutual only.

Source: Land for the Future, p. 128.
Table 4 indicates in a more detailed manner certain factors relative to recreation.

One of the most significant aspects, especially relative to planning for metropolitan open spaces is the changing attitude of the average North American citizen towards moving. Where in prior years, most families were deeply rooted to the community, at the present time families will move from suburb to suburb or from one community to another without hesitation. This kind of space mobility, has probably partly been made possible because of a diminishing friction resistance, and by the ease of transportation means, however, the changed attitude towards life and the dominant vocation goals and social drives have certainly played an influential part. Today the younger people in search of promotion towards a better job will tend to accept transfers anywhere in the country. Similarly, in regards to moving within a specific community, the particular neighbourhood or suburban ties are not strong enough to influence a family against moving several times into different other suburbs.

In the same manner this attitude towards personal mobility will affect the citizen's approach to recreation. He will be prone to travelling in a considerable radius to reach desired open spaces, or recreation facilities. This frame of mind will be prevalent not only for vacation periods, but also for weekends as well as for daily trips or evening car rides. This physical mobility will add another strain on the resources of outdoor recreation to provide the necessary needs of the public, especially in the general metropolitan area.
TABLE 4
FACTORS RELATED TO OUTDOOR RECREATION IN THE FUTURE

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>1956</th>
<th>Index</th>
<th>1980</th>
<th>Index</th>
<th>2000</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>Million</td>
<td>170</td>
<td>100</td>
<td>240</td>
<td>141</td>
<td>310</td>
<td>182</td>
</tr>
<tr>
<td><strong>Per. Income:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per capita</td>
<td>1955</td>
<td>1,630</td>
<td>100</td>
<td>2,525</td>
<td>155</td>
<td>3,660</td>
<td>224</td>
</tr>
<tr>
<td>total</td>
<td>Bil.$</td>
<td>269</td>
<td>100</td>
<td>605</td>
<td>225</td>
<td>1,135</td>
<td>422</td>
</tr>
<tr>
<td><strong>Expend. on all recreation:</strong></td>
<td>%</td>
<td>5.2</td>
<td>100</td>
<td>6.6</td>
<td>127</td>
<td>7.8</td>
<td>150</td>
</tr>
<tr>
<td>total</td>
<td>Bil.$</td>
<td>14.0</td>
<td>100</td>
<td>39.9</td>
<td>285</td>
<td>88.5</td>
<td>632</td>
</tr>
<tr>
<td><strong>Time:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>avge. workweek</td>
<td>Hours</td>
<td>40</td>
<td>100</td>
<td>32</td>
<td>80</td>
<td>28</td>
<td>70</td>
</tr>
<tr>
<td>discretion, leisure per week</td>
<td>Hours</td>
<td>30</td>
<td>100</td>
<td>38</td>
<td>127</td>
<td>45</td>
<td>150</td>
</tr>
<tr>
<td>paid vac. per worker</td>
<td>Weeks</td>
<td>1.0</td>
<td>100</td>
<td>2.5</td>
<td>250</td>
<td>4.0</td>
<td>400</td>
</tr>
<tr>
<td>total</td>
<td>Mil. Weeks</td>
<td>70</td>
<td>100</td>
<td>240</td>
<td>343</td>
<td>496</td>
<td>709</td>
</tr>
<tr>
<td><strong>Travel:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per capita, total</td>
<td>Miles</td>
<td>5,000</td>
<td>100</td>
<td>7,000</td>
<td>140</td>
<td>9,000</td>
<td>180</td>
</tr>
<tr>
<td>per cap. for rec.</td>
<td>Miles</td>
<td>2,000</td>
<td>100</td>
<td>3,500</td>
<td>175</td>
<td>5,000</td>
<td>250</td>
</tr>
<tr>
<td>total</td>
<td>Bil.Mi.</td>
<td>340</td>
<td>100</td>
<td>840</td>
<td>247</td>
<td>1,550</td>
<td>456</td>
</tr>
<tr>
<td><strong>Recreation visits:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>user-oriented:</td>
<td>Million</td>
<td>1,000</td>
<td>100</td>
<td>2,000</td>
<td>200</td>
<td>3,750</td>
<td>375</td>
</tr>
<tr>
<td>total</td>
<td>Visits</td>
<td>5.8</td>
<td>100</td>
<td>8.3</td>
<td>143</td>
<td>12.1</td>
<td>209</td>
</tr>
<tr>
<td>intermediate:</td>
<td>Million</td>
<td>312</td>
<td>100</td>
<td>1,200</td>
<td>384</td>
<td>5,000</td>
<td>1604</td>
</tr>
<tr>
<td>total</td>
<td>Visits</td>
<td>1.8</td>
<td>100</td>
<td>5.0</td>
<td>278</td>
<td>16.1</td>
<td>894</td>
</tr>
<tr>
<td>resource-based:</td>
<td>Million</td>
<td>116</td>
<td>100</td>
<td>750</td>
<td>647</td>
<td>5,000</td>
<td>4310</td>
</tr>
<tr>
<td>total</td>
<td>Visits</td>
<td>.7</td>
<td>100</td>
<td>3.1</td>
<td>443</td>
<td>16.1</td>
<td>2800</td>
</tr>
</tbody>
</table>

1. 1955
2. Using Dewhurst definition of recreation.
3. Assuming 8 hours for sleep and 6 hours for eating, miscellaneous personal activities, and travel to and from work in 1956. Similar assumptions in 1980 and 2000, but some reduction in travel time as work days per week are reduced.
4. Dividing total paid vacations by total labor force.
5. In 1957 approximately 40% of all trips were for vacation and pleasure, U.S. Bureau of the Census, September 1958.
6. To public areas only.
7. Incomplete estimate all years, chiefly an index of actual use.

One area of study that requires further investigation is the present day consequences of the changing way of life, with particular reference to leisure and recreation, on society as a whole in North America. This appraisal of current conditions will aid in understanding the role of open spaces in the expanding metropolitan community. Figure 3, on the following page compares income, leisure and travel factors by way of a concise summary of the preceding discussion.

As previously discussed, the alterations in the pattern of life has had a marked effect on the attitude and relationship of leisure and recreation activities to work. Margaret Mead relates this change to the breakdown between "earned" and "re-earned" limited pleasure since the end of World War 11. The depression brought a slackening of the whole system, with its unemployment, little money, and therefore no symbolic right to play. After the war, people wanted to regain these losses and achieve some sort of happiness. At this time a change took place in the North American society, the rising standard of living, accelerated wage rates, inflationary trends, easy credit terms and heavy installment purchasing coupled with the emphasis on mass marketing and general reduction in work proficiency in almost all fields of endeavour had their affect on the people's work and leisure attitudes.

This transformation has led to the generation that has married since the war responding to these conditions by shifting the balance from work in which excellence was a matter of pride to the home. Home, in which one was formerly allowed a limited amount of recuperative recreation in reward
FLIP FOR THE FUTURE, P. 130.
for hard work now became the reason for existence. Margaret Mead proposes that good work in the form of community services, also has been moved into the home life. The real quandry is whether or not this new approach to home life can be classified as play or whether it is something else. The outcome may be that the job is transformed into recreation in the physical sense, a relief from the exactions of close personal life at home.

Other interpretations have been put forward as to the relationship of leisure, and recreation in our technological civilization. Living in an age of transition, technical changes have brought about everywhere spare time which is available for all the possibilities of leisure and the pursuit of happiness for a "good life". Certain conditions already indicate that there is an increasingly urgent and feverish pursuit of happiness by the twentieth century masses, one that is probably a major sociological fact of our epoch. This quest has by no means been satisfied and is largely explained by the fact that modern society does not have enough institutions conducive to the realization of happiness. The usual explanation is that individuals cannot transform their free time into genuine leisure unless they are able to dominate and control these countless institutions, machines and gadgets for their own ends. The problem is that the values of mass leisure are not yet capable of filling the void created by the many social benefits that have been introduced by the technical advances. There are other handicaps, also that have further weakened the wise use of leisure, such things, as the increasing distances
between the suburbs and the work area, resulting in increased time wasted in travelling; the attributes of certain types of work which influence the potential benefits of free time in advance because of their affect on the personality to name but two. Mental strain produced by the operation of high-speed routine jobs can also detrimentally influence free time.

Some people probably supposed that the increased spare time would be used for self-improvement and social betterment by the bulk of the workers. It was felt that leisure would mean additional beneficial recreation and use of the natural resources; such as parks and open spaces. However, it cannot be assumed that all people or classes of people have made full use of it. Many sociologists and other social scientists in the U. S. have written on the "decay of leisure" and the effects of idleness on the deviation from social norms by crime and delinquency. These are the extreme cases but there are others that are within the bounds of social mores, a spare-time job, odd jobs for money or a definite second job. The example of the rubber industry in Akron, Ohio is a case in point, in 1958 a study in the industry showed approximately seventeen percent of the workers held a second full-time job in addition to a factory job, while another forty percent had part-time second and even third jobs.

What do such actions imply? In most cases authoritative writers feel that it is a struggle between free time, the economic structure and the behaviour pattern of such an industrial society. The efforts of "big business" to produce more and more are co-incident with the average citizen's ability to
increase purchases of consumer goods. The extreme selling pressures that are brought on the consumer's market are well known in North America, the enticement becomes so great that many working class families succumb to the suggestions for new needs. The price, even with the aversion to the fatigue and regimentation of work, is a disputed practice as shown in the Akron rubber industry study.

The speed of modern living has caused nervous tensions and pressures to which people have not been accustomed and for which they are not prepared. Urban life has brought with it an added strain of crowding, noise and the ever presence of haste in all our daily activities. A great deal of the citizen's strength is used up without giving the body adequate time for recovery. Under such conditions the need for positive recreation is extremely critical. Thus, the preliminary material pertaining to leisure is an important aspect, especially when modern society is considered from a sociological viewpoint. Newmeyer, in his evaluation of leisure and recreation feels that recreation cannot be understood without considering the significance of leisure. Both, leisure and recreation are affected by geographic and ecological factors, the population situation, political and economic organizations, science and technology, education, culture and community life. He concludes that there are many social affects of leisure but the most immediate influence is exacted on the human personality. In this regard, recreation has its physical, mental, emotional, moral, social and civic benefit and is extremely important in the development of a well-balanced personality.
Psychological Needs

A primary factor in discussing the preservation of open space, is one which is related to the psychological and physiological need of the human being for a landscape that contains large areas of natural surroundings. This is one segment of the study of man in his physical environment, especially related to urban living that has not had the proper degree of emphasis. Most authorities concerned with the city and its problems have made passing reference to parks, playgrounds and other forms of recreation and leisure as a need for improving and adding to the qualities of life of the urban dweller; but they have rarely went deeper to evaluate the ramifications of nature in the "inner self" of the human being. In other words the warnings of the conservationists on the one hand or the psychologists, biologists and natural scientists have largely gone unheeded. It is just lately that studies are beginning to delve into the relationship of man and nature to determine the influence of the natural environment on the human's emotional well-being.

The divergence of opinion becomes clearer in considering the definition of a city in its total environment. Many economists, sociologists or professionals state, and local authorities in the U. S. view the city as a social institution; in the words of Le Corbusier as a subjugation of nature by man, a human action against nature, in essence a human organism for work and protection. The biologists, psychologists or natural scientists do not dispute the definition of a city as a social institution but they think
of it more as an environment where certain relationships evolve not only between men and men, but also between men and the forces of nature. In essence, it is a symbiosis in which two dissimilar organisms live together in close association and for mutual advantage. The symbiotic approach is a simple and familiar premise; man in addition to his spiritual identity is part of nature. The implication is that, being a biological organism man is subject to the laws of nature and is therefore constantly affected by the physical environment. In any such evaluation, most of these people do not infer that the city is not important, or that the man-made environment is unnatural but simply that man's subjective relationship to the environment affects the senses and ultimately his emotional well-being.

The problem, in many people's minds is quite clear: the onrush of urbanism, with its bulldozers, tractors, and mile after mile of tract housing has defaced the landscape, uprooted trees, polluted streams and generally played havoc with the natural setting. One author goes as far as to say that within many people is the feeling that the miracle of the lush grass, tangled undergrowth, a running brook and an exhilarating view should somehow be preserved for future generations; it is a deep need, a respite against the concrete, angularity and aridity, long recognized by poets and painters.

A research project conducted by the Massachusetts Institute of Technology in the summer of 1955, dealing with the students childhood
memories, tempted Alvin K. Lukashok and Kevin Lynch to undertake a similar study by means of a series of interviews. All in all, forty people were interviewed, between the ages of 18 - 32 years old mostly from Boston, although some were from as far as New York. The study rested on the assumption that the memories of childhood are important emotional underpinnings of modern man's life. Some of the findings are of great interest especially in light of the previous description of man and nature. These people remembered most clearly those elements of their childhood which involved the landscape. Lawns gave them a sense of spaciousness, and as a floor covering it was liked the best, followed by dirt. The surfaces disliked the most were asphalt on open space or gravel, brick and cobblestone. Trees were mentioned with great warmth as were the overgrown lots that contained thick bushes and wooded areas. On the whole people remembered the pleasure of viewing the hills that were in the vicinity, and none complained about too much open space. The key elements in the study were the childhood memories pertaining to an awareness of lawns and floor surfaces, the delight expressed in foliage, woods and green areas, as well as a strong and pleasant rememberance of hills, and water in the natural landscape. The results of this study although only from a small sample clearly gives an insight into the close relationship of the human being and the need for natural open space.

Another interesting conclusion dealing with urban living relates to the basic concept of the world, of our environment through our senses. In
this case the premise is that the environment must be designed to promote our physical well-being as well as to promote social relationships. A life of sensory joy in a sensory world must be able to stimulate the human's sight, hearing and sense of touch and smell. Unfortunately the tendency, especially since the war has been to eliminate every natural sight, sound and colour from the urban scene, and replace it with crowdedness, noise, uniformity, monotony and geometric perspectives of man-made objects. Thus, another avenue of the human's emotional well-being is frustrated by the current design of urban living.

Conservationists have been speaking and warning society, for many years, about the danger in destroying natural resources that cannot be replaced. Their views being future-oriented are pointed towards maintaining a balance between nature and the onrushing industrial societies encroachment. The increasing population is putting annually more pressure upon the living space of North America. In addition, the continued existence of our civilization depends on keeping the natural environment productive of the essentials of life.

There are certain critical regions around the metropolis which are essential to the life and death of plants, animals and even humans. These are the natural spots that contain the watersheds so necessary to urban living as well as those in nature. Today the watershed has become a problem of the first magnitude, especially in that many of the renewable natural resources such as forestry, farming, hunting, fishing and the
economics of production are tied up with it. Other problems exist in the wasteful destruction of the forest cover so necessary in flood runoffs and moisture containment. The "tragedy" of human expansion may be related to the poisoning of the rivers and streams adjacent to urban living. The fisheries of the many lakes, streams and rivers are amongst the most important forms of recreation resource, yet these are wantonly destroyed by industrial and domestic sewage and pollution.

Conservation aims at a planned management and wise use of nature's resources. Its goal is to co-operate with science and nature to increase their quality, quantity and availability through the years. In this manner the beauties of nature will be available for a wide variety of human activities, as already mentioned for recreation activities which have become increasingly more popular. A further element in the discussion is that the untouched elements of the natural community offers the only true background against which we can measure the changes which civilization has wrought. The regions needed to preserve are the sandy shores, the last remaining nature forests, the streams and even the marshes. These areas provide an invaluable teaching facility, where man can unravel the complicated relationship between plant and animal life.

Open spaces, therefore, play a key role in society as it exists today. Especially when reviewing man's ability to control and overcome
the physical and mental pressures that are part of his very existence. The human being now needs more than just food, clothing and shelter if he is to enjoy a full and normal life. Open spaces provide the link that is so necessary to furnish a life of happiness and mental contentment. It is within the confines of the natural setting that one achieves restful and healthful inspiration in being exposed to fresh air and the soothing influence of the natural habitat. The more complicated our lives become and the more elaborate the machinery of living is made, the more necessary it will be to create this temporary retreat from reality. An integral part of this achievement will be the use of open space for recreation and for "re-charging" man's physical and mental capacities.

The dominant need will be in the metropolitan area where the demand will be the greatest. It is within this growing urban complex that proper planning and conservation of natural resources can achieve its most worthwhile results. However, here is where the "conflict" is the most severe and where external pressures are the most powerful opponents of open space. People in order to receive the full benefit of natural surroundings must be exposed to them. Thus, to destroy open space closer in where it is essential for physical and psychological stimulation to satisfy some immediate shortrun economic goal, is a false saving. The replacement of such space miles out will have little salutory effect on most of the urban residents.

In the following chapter, an evaluation and description will be undertaken of the various police power and eminent domain proposals recommended as means of containing and counteracting the diminution of natural areas.
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9 Taeuber, op. cit., p. 29.

10 Taeuber, op. cit., p. 30.


12 Marion Clawson, The Dynamics of Park Demand, Regional Plan Association, New York, April, 1960, p. 21.

13 Ibid., p. 22.

14 Ibid., p. 22.

15 Ibid., p. 18.

17 Ibid., p. 228.

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CHAPTER III

WAYS AND MEANS OF OPEN SPACE CONSERVATION

We have seen that there has been a loss of valuable potential recreation lands as a result of recent accelerated urbanization around our larger cities, and that the pressure for other more intensive land uses will likely be even greater in the future. This is an unhappy prospect because open space will play a key role in society as it exists today. It is the link that is critical in providing a life of happiness and mental contentment. Thus, people to receive the benefits of the natural setting must be exposed to it. The need, therefore, is in the metropolitan area where the open space and recreation demands are the greatest.

Given this situation, we shall turn next to an examination of the legal means that are available to public agencies and various levels of government in conserving and preserving parks, recreation areas and open spaces. Along with these methods will be discussed several of the leading proposals that have been put forth as solutions to the ever pressing problem of urban encroachment on open spaces. While it is realized that many of these legal techniques are not particularly adaptable to recreation and open space planning they are in themselves complementary to land use planning.
To begin with, it is advisable in such an appraisal to qualify the material to follow with a general investigation of the justification for using certain public powers. It is imperative in employing particular legislation and legal actions that the purpose is for the public good, otherwise it will not stand up in the court of law. Public power, what can and may be done, functions at two levels, first, the reservoir of power in the provinces or states under the constitutional system, and secondly the power delegated by means of the legislature to the local or municipal political unit or public agency. Such power is capable of infinite variations from the ability to acquire property rights by purchase, lease or condemnation to the acceptance of gifts. The taxing powers, police powers, and eminent domain powers represent the leading sovereign powers. Public purpose has generally been defined in terms of the law of eminent domain which holds that the intention of securing property or property rights must be public and not primarily for a private interest. This does not mean that there is anything wrong with a landowner benefiting also, nor does it mean that the public has to have public access to the property because it is now generally agreed that the public can enjoy a property benefit without physically going on it.¹ Most experts in the field seem to feel that the courts are becoming more responsive to the enlarged and growing needs of the communities in North America and are tending to expand the definition of the public purpose. This practice usually means that the courts will tend to go along with many of the policies that have been acceptable to the elected representatives. Most authorities stress the fact that any open space programme
must be designed to serve a public need or benefit; failing this the plan will meet with bitter opposition and probable ultimate rejection.

**Taxing Powers**

Property tax concessions have been considered for a great many years as a means of alleviating some of the pressures on open spaces. However, most of the time this practice was viewed in the short range and as a result this instrument of social policy comes in direct conflict with the community's need to raise revenue. In contrast, over the long term this exercise of restraint may actually improve and enhance the values in the community and therefore increase the potential taxable value. The problem is that if a landowner is asked to keep his land open for the public benefit, the landowner should receive some compensation in return. The most suitable answer is a fair tax treatment, generally at the level of a fair market value. The solution from many experts' point of view is to discover ways of using the taxing power to make it possible for open spaces to continue without so-called improvements. Most proposals stress that the local assessors should give preferential treatment to agricultural and other open spaces; in this regard zoning restrictions should be considered as affecting potential use. In California, the use of exclusive agricultural zoning was seen as a means of controlling the ever-increasing assessments because of the use of the land in farming enterprises. While Santa Clara County does appear to have a better chance of controlling the higher assessment rates through stricter legislation, the other counties, such as San Mateo do not. In this case the question of lower taxes was found by William Whyte not to be that zoning had prevented additional charges but the fact that development hadn't reached the zoned
areas. Experience shows that there is a real need for a closer relationship between zoning and taxing policies instead of both working at cross-purposes.

Valuation of Farms at Present Use Basis

In her analysis, Shirley Siegel has found this technique to be legally feasible. Under such a scheme the farm is taxed on the total acreage rather than on a lot basis. In essence, the proposal is to assess the farm at less than the market value, thus excluding the factor of the increment in value resulting from potential development for more intensive use. The merit in this plan becomes more lucid when U.S. Census Bureau statistics show that farm property taxes have been going up since 1940 and are presently rising at six percent per year. Several states, such as Maryland, have enacted legislation related to present use valuing of farms.

Land Restricted to Park Use

Land that is utilized as a park for the use and benefit of the surrounding owners is considered to be non-taxable. If a sub-divider has been induced to leave a portion of land, indicated on his subdivision map, this park area is considered to be non-taxable.

Hunting or Fishing Rights in Return for Tax Reduction

In some states in the U.S. the law provides that if a landowner grants the public recreation rights over his property he may be entitled to a tax abatement. For example, Minnesota accords such a tax reduction upon such lands comprising principally swamp and marshy areas for a period of not less than fifteen years. These areas are then reserved for development as wildlife habitats and public hunting for the full time of the tax reduction.
Severance Tax

Initially, this possibility was related primarily to the growing of trees with regard to the tax assessment. It has been proposed as a means of preserving open spaces, in such a manner that the landowner would pay a low tax rate as long as he kept the land open but if he exploits the land he must pay the accumulated difference between the low rate and the full one. Such a tax scheme has been practiced for some years in several states, such as New Hampshire and Wisconsin, as a means of encouraging reforestation and preventing wasteful cutting. The tax is deferred until the timber is cut when it is payable at the same time as the capital gain is achieved. Charles W. Eliot of Massachusetts has prepared a bill whereby land which is registered as "classified open land" could claim partial deferral of taxes, analogous to the forest yield tax. The owner may apply to have his land listed on the master plan, or approved subdivision plat as park or public way. If accepted, he is entitled to a rebate on his property taxes in the order of: ninety percent for the first three years; seventy percent for the succeeding seven; and fifty percent thereafter. On the relaxation of the restriction all rebated taxes would become due. In the state of Indiana a legislative proposal has been brought forward in which rural area conservation would apply the severance tax procedure to forestall premature development. Under such a programme the planning commission would be able to designate uses for particular areas, for example, farming, recreation, flood plain, industrial, residential and so forth. On obtaining agreement from the landowner that the land will remain undeveloped the local taxing body could grant an annual deferral of from ten percent to thirty percent of the property taxes due. If the land was later
developed the owner would be obligated to pay the accumulated taxes that would be owing.  

Tax Concessions to Encourage Gifts for Individual Exemption

This proposal has been frequently suggested as a means of acquiring large estates, and open spaces. At the present time it has not been used a great deal but it appears from authoritative sources that such action would constitute a valid classification. In order to encourage donations of such land the donor would be offered a reduction in property taxes, and if the arrangement was to deed the title of the land to the public, the donor would be allowed a life estate during which time no taxes would be paid.

Exemption of Public Land in Public Use

In this case the situation may appear somewhat ambiguous that a municipality owns the land but still has to pay taxes on it. The fact is, in the U. S., once a gift is effectively made, the public body has title to the land, and if the donor is still living on the land as a tenant, it is the character of the use not ownership that determines the taxability of the land. The law in the State of New York signifies that public land whether state or local owned must be in public use to benefit from tax exemptions.

Exemptions for a Term to Satisfy Social Policies

Certain option procedures have been applied in several different states to overcome taxes for a short length of time in order to decide whether or how much of the particular land area should be acquired for public use. In some cases, a period of three years has been stipulated with an additional renewal
for another three years. In New York State delinquent land, recovered by the municipality may be exempt from taxes for a period up to three years. This interval is presumed to be sufficient to allow the public agency time to decide the park use or other public uses. 9

**Other Tax Enducements**

The incentive under such proposals is the reduction in federal income tax applicable if a parcel of land or particular estate is given to the public as a gift from a private landowner. This financial inducement would have greater acceptability in the U. S. because of the additional burden of the capital gains tax on income. However, the application of such a principle does bear mentioning in relation to the Canadian scene. Although, the approach is purely not one that would be employed by a metropolitan planning agency the procurement of such properties would be of immeasurable benefit to the community as a whole. Such a plan would tend to supplement the planned recreation areas and help to improve the land ratio of open spaces to total population.

As previously mentioned, the stimulus to a United States' taxpayer is he would be free from the capital gains tax that would apply should the landowner sell his residential estate. The other two pertinent taxes applicable in both Canada and the United States involve Estate Taxes (payable on the fair market value of the property at the time of the death of the landowner), and Property Taxes which are affected by the spread of urbanization into the hinterland. These are serious considerations that may influence a property owner, or estate owner to make a gift to the public. Shirley Siegel in her
report cites several instances where such a programme would enhance the financial well-being of an individual landowner. If a man wills his estate upon his death to a public agency for a park or open space reserve, a deduction for federal estate tax purposes in the amount of the fair market value at death is permissible. Similarly, if an owner wants to make a gift during his lifetime he is allowed to deduct at once the amount of the gift from his federal income tax up to the ceiling price allowance for charitable donations. \(^{10}\)

The tax question has been covered not by reason of being truly a planning device but because it is a further means of securing open space. Any technique that has justifications both legally and socially is another opportunity for a public body to achieve the goals of securing a better community to live in. From the viewpoint of the thesis the primary lesson to be learned is the relationship of taxing powers to the other forms of preserving open spaces. The conflict between the agriculturalists, as a source of open space, and the assessor is a serious one, especially when the primary economic motive of the community is raising the necessary revenues required to provide public services. The objective of an equitable tax programme must be directed towards relieving some of the pressures off the owners of open spaces which are now causing them to ask for such things as zoning changes to convert the land to more intensive uses. What is needed is ways to curb speculation and to return to the community a fair share of the unearned increment in value which has been created by the growth of investments in the facilities of the community as a whole, and to which the owners of individual property have made little contribution. \(^{11}\) In the end, the solution appears to be en-
veloped in a balance between property taxes and the necessary revenue returns needed to operate the local governmental body.

**Police Powers**

This is the power that is inherent in all governments to protect the rights of the individual. It has many manifestations of which the two most important are the zoning plan and zoning ordinances. During the last few years zoning has gained wider acclaim as a means of controlling the future course of development of private lands, especially because of the financial economy in its application. The objective in using such a tool has been to restrict development in certain areas and to regulate the location as well as the timing of urban construction so development will proceed in an organized fashion. Zoning has been successfully employed to prevent future development where a strong stand can be made for public health, safety or preservation of natural resources, the best case in point, is the flood plain. A similar case can be made for zoning to preserve scenic amenities, possible when the public can demonstrate these amenities are a factor in holding up the real estate values in the community. Most authorities feel that the public should be made aware of the deficiencies involved in zoning and therefore guard them against over reliance on the police powers of such ordinances.

**Large Lot Zoning**

Under such a proposal the objective is to set a minimum acreage per lot high enough to discourage the mass developer. The trend towards one acre minimum lot sizes, doesn't provide greenbelts. However, as the minimum increases the by-product may be larger tracts of open spaces.
The dominant trend is clear in that there is increasing approval of minimum lot zoning and a growing acceptance to approving higher minimums. The opinions of a group of Massachusetts Institute of Technology Specialists working on such a project for the Urban Land Institute was that nothing less than five to ten acre lot zoning has any real significance as a technique in achieving open space. One suggestion proposed to insure the success of large lot zoning is to incorporate this method as part of the master plan for the metropolis.

This technique of zoning appears to be helpful in maintaining the integrity of different kinds of residential communities and is useful as a stop-gap but not as an end-result. As a defense against sprawl instead of diminishing the scatteration it tends to accentuate the effect by demanding larger lot sizes and as a result the developer is forced to attack more open space to fulfill his needs. In many instances it is the multitude of small developments that are the main problems, these builders are not concerned with minimum lot regulations and will have a tendency to build where land is cheap, usually far out in the countryside. An additional ramification is the growing population of the urban communities that will add to the residential pressures on the available land and therefore probably limit the potential of large lot zoning.

William Whyte suggests a possible solution in that communities should temper their ordinances so that subdivisions could make better use of the space they develop. In essence, the same ratio of houses to the total acreage could be used, but rather than fill all the available land, the houses could be grouped more tightly leaving usable space left over for parks and open space.
One of the valid criticisms of the handling of this type of zoning is that some communities have attempted to use the powers granted by the higher-level government to exclude a large percentage of the population from having an opportunity to reside within the district. Many feel that in order to prevent communities from employing this type of exclusionary practice, through means of taking land out of potential development, in essence, for the purpose of preserving open space, these communities should demonstrate that this policy would not have such exclusionary effects.

**Official Map for Parks other Options and Reservation**

The Official Map has been used as another important application of the police powers of the community. In previous years such a device has been employed chiefly as a means of charting the future location of streets, as well as the widening of present ones. The premise is that if the community can prohibit people from building on land needed for streets, it should be possible to apply such powers to sites needed for parks. The states of New York, Pennsylvania and Wisconsin have passed enabling legislation for preemption by which if the landowner finds his property has been zoned against development because of a planned park he will be unable to build on the land unless proof is forthcoming that he is unable to earn a fair return on the value of his land.

An important ruling by the U. S. Supreme Court in Berman vs. Parker stipulated that the constitution could accommodate a wide range of community planning devices to meet the increasing demands of community expansion, deterioration and change. This finding was further to a previous decision where the protection of the economic interests of the general public fell within
the sphere of the promotion of the general welfare and thereby afforded the basis for the exercise of the police powers. 15

Many, including Shirley Siegel, feel the device is limited in its application. The reason is that in the case of the Official Map related to future streets the landowner would eventually benefit by being connected to street system without which he would be unable to procure the necessary public services. However, such is not the case for the Official Map of parks; the land may only be a small portion of a substantial tract and may not be used for many years, meanwhile the owner is still taxed on the land. Because of this functional difference between mapped parks and mapped streets, owners are not denied the right to erect buildings. There have been attempts to initiate programmes along these lines in some states, i.e., Maryland, New Jersey and New York. However, the procedure is still very new, and from a legal and legislative viewpoint little precedence has been set.

"O" Zones

Charles W. Eliot presented a report to the National Capital Regional Council, in the U. S., in which he recommended that special zonings be applied to existing parks, public open spaces, stream valleys, flood plains, watershed protection areas, and golf courses where such open spaces were shown on the master plan and considered as desirable and permanent. 16

Some authorities are of the opinion that this expostulation may be overstepping the limits of police powers. Exclusive "recreation" districts have succeeded in California where the court upheld the zoning of a certain beach frontage for recreational purposes. However, it would appear that the
legality of such actions will be achieved only on a case by case basis.

**Exclusive Agricultural Zoning**

This practice has probably been the most successful of all the zoning devices in retaining open space. Most of the pioneering in this field has been done as a direct solution to the on-rush of urban encroachment on the specialized croplands in Santa Clara County, California. By 1954 the scattering of groups of development had created such chaos with the farming enterprises that the agricultural element in the county petitioned to have the exclusive agricultural zone act passed which provided for any kind of farming enterprise but specifically excluded subdivisions, factories or stores. The weakness became readily apparent by using the annexing procedure the adjacent cities could remove farmland from the "A" zone without the farmers consent because the "uninhabited territory" provisions of the California Annexation Law required only fifty percent approval. As a corrective measure a "consent" proviso was added but it has now become the weak link in protecting the agricultural lands. The reason is that soaring land prices have brought with them increased temptations for speculative gains, and with the new proviso the farmer can release himself from the zone simply by annexing to the nearest city.

There are some sobering lessons that can be learned from the Santa Clara experiment. In this respect most of the adjoining city officials have shown a great dislike for the device. They have felt that agricultural zoning is being used by the farmers as a means of preventing sign boards and other unwanted urban trappings as well as having the advantage of lower taxes until they want to cash in and sell to the land developer. In Santa Clara County
most experts feel that the zoning regulations are much stronger than in any other area and therefore pose a much more difficult problem in absolvement.

William Whyte in his evaluation of this technique concludes that it has helped to keep assessments low, although there has not been any direct cause and effect relationship. Therefore, zoning may have been co-incident with low valuation, but it did not insure them. Its greatest effect has probably been a psychological one, in rallying a group of people together to recognize their common stake. 18

The real significance of Whyte's argument is that the people who have tested the agricultural zoning practices are now pressing for a more all-encompassing programme because of the objections that have been found to the zoning technique.

From the standpoint of the law, zoning appears to offer a relatively simple administrative technique in preserving open space. There are serious defects which has tended to reduce its value, one notably the lack of any real protection from rising assessments. Zoning may temporarily delay the development pressures but the market place and the zoning board have made zoning yield too easily. Another aspect has to deal with the local government's attitude towards open space, really a distinction between police powers and eminent domain. It is a basic question of whether the public wants to prevent something harmful from happening or is prepared to secure a benefit. This distinction comes to light in considering the case of land that is zoned, here the landowner gives up a chance to make a profit in his land by sub-dividing thus he bears the whole cost of the benefit while the public pays nothing. This
action is contrary to the English planning statutes where the public will not compensate an owner when it restricts his privileges of ownership in order to prevent him from imposing a cost upon others, but when the state takes his property rights in order to obtain a public benefit it must compensate him. Properly used, police powers, can compel an owner to refrain from building on open spaces when such actions are considered harmful to the public. Thus, with certain types of lands, for example, stream valley or flood plains there would be no dispute over the public exercising its powers for the public good. When the public administration extends its authority to the point where there is some doubt as to whether there is public benefit, the law is very clear, if wanted by the public the land must be paid for.

From the point of view of metropolitan park planning, zoning of the variety mentioned appears to have little value. At best, most of the techniques could serve as stop-gaps until a more positive planning steps could be initiated. The most benefit would be derived in the case of a master development plan of the total metropolitan area where each land use would be set in its proper perspective. Under such a programme areas allocated as park sites and open spaces could be zoned with a good chance of remaining in that land use. The key is really that zoning is a negative approach to planning and as such does not give enough scope to the agency in analyzing the future needs of the metropolitan community. The tools that are essential to any development plan are those that will make implementation of the open space and park goals not only feasible and possible but also permanent.
Eminent Domain

Today the public purpose in providing adequate parks and recreation facilities is so clear that there is no issue as to the fundamental legal power of the public treasury to spend money acquiring land for such purposes. Certain problems may arise out of the meaning of enabling statutes and for this reason most legal experts recommend careful drafting of the particular law. For example, in the U. S., the State of New York's statute outlines the general powers of the cities, towns, and villages, conferring authority on them to purchase or condemn property for parks and playgrounds. In addition the framework of the statute provides for the creation of park districts which are vested with the power to establish public parks; the recreation commission, under the same provisions, may establish playgrounds and neighbourhood recreation centers including swimming pools. An interesting proposal has been brought forth in New York that legislation should be drafted to make it possible for the public agency to have the opportunity to bid and meet the sales price of a specific class of property. The size of the property would be of the order of one hundred acres for such present uses as golf, waterfront properties and other recreation activities as well as water bodies measuring at least ten acres in size.

Shirley Siegel has prefaced her analysis dealing with the use of the power's of eminent domain to secure parks and open spaces, by referring to several of the important public rights that are related to the field of recreation. Although it is not proposed to discuss these in any detail because of their relative minor influence on the subject at hand. It is necessary to touch on them
to review all the many statutory remifications. The most pertinent ones are those dealing with foremost rights, fishing and hunting rights, and swimming rights. In each case the public purpose is clearly indicated. With reference to shorefront rights the law is applicable to the foreshore (beach between the high and low water mark) and of the conditions of public and private ownership of the beachfront. There are various differences in certain states as to the rights of the riparian owner (owner adjacent to the beach), however the important aspect is the public's right to exercise public ownership by reacquiring shorelines that have previously been granted to private citizens. Fishing and hunting rights are usually considered as public rights in all navigable waters. There are certain restrictions, for example, where rights of navigation may be leased or in the case of private land where trespassing can be denied. The swimming right has an important influence on recreation potentiality especially when related to the question of diverting water from a stream into a private pool or public pools adjacent to the stream. Coupled with this practice is the rules governing swimming in fresh water lakes utilized for public water. Both these aspects have been handled somewhat differently in many of the states.

One device that has been suggested, a favourite type of government unit in U. S. to overcome constitutional debt limitations and taxing limitations, is the public authority or special district. Although this quasi-government unit has not met wide acceptance in Canada the United States has established a multitude of special districts each one organized to solve one particular public service problem. It is only natural that a public authority would be suggested as a park and recreation device in which revenue would be raised to.
meet the financial obligations on repaying the bonds originally floated to initiate the authority’s programme.

Another possibility, again not really a planning technique but still a useful means of adding to the community’s source of recreation and parks lands is the use of tax foreclosures. There is a wealth of possibilities to obtain, in many instances, vacant land if an energetic foreclosure programme is carried out on tax delinquent properties. These parcels of land can be almost promptly converted into much needed park and recreation land. New Jersey’s courts have accepted as constitutionally valid a statute which provides the power for a municipality acquiring vacant land by tax title foreclosure to exchange such lands for others that may be more suitable. The question of whether a municipality may go into the real estate business, however, has been a sensitive one in many parts of North America. Most legislatures and courts feel that such an approach is tending too much towards socialism.

Other possibilities for acquiring additional parks and recreation areas are to be found in land filling programmes and street closing ordinances. Many municipalities have gained a considerable amount of land by merely filling low lying areas or by laying topsoil over old garbage dumps. Another local resource is the closing of streets that are no longer needed. In the last few years the construction of new housing in the pattern of superblocks in some of the older areas of cities has aided to reducing the number of streets required; these may be relinquished to local recreation organizations or park administrations.
There is an additional possibility of creating new parks and open space through the processes of urban renewal. During the last few years the scope of these activities have greatly enhanced the feasibility of supplementing park and recreation facilities in some of the more densely settled parts of the metropolitan area. One of the problems is the high costs involved in such projects and even in the U. S. with federal government aid on a 2 to 1 basis it still leaves a great deal for the municipality to absorb. Since 1954 when the tools of redevelopment were broadened, to include a variety of non-residential projects, several cities have relied on federal urban renewal funds to create recreation facilities, for example, Philadelphia is using such funds for a large proportion of its long range park acquisition programme.  

Purchase in Fee Simple

This method is probably the most widely used throughout North America to procure the required sites necessary for park and open space uses. By this means the public agency buys the particular property from the private landowner at a price considered to be the fair market value. The advantage of such a procedure is that the title of ownership is then vested with the park authority, who may then develop the site according to its long rang park plans. The park department does not have to contend with private restrictions which could hinder the ultimate development of the locations as under other tech­niques. The principal disadvantage is the high cost of buying suitable land within urban areas. This cost in many instances impedes a very broad prog­ramme because of the limitation of acquisition funds.
Excess Condemnation

This technique has been used in several different ways to augment open space lands in both Canada and the U.S. In one way the park area may be excess to the public improvement, the best example, is the acquisition of highway rights-of-way where the agency does not have express authority to acquire land for open spaces. However, both the park’s authorization and financing may be able to go hand in hand with the major improvement as an incidental feature. The other aspect is where more land is purchased than required, the surplus is sold off, subject to restrictions, to achieve a planned area around the park. The object is to gain additional increments in the value of property by the adjacent location of parklands.24 For years the courts have held that such a practice is not for the public purpose; the report, "The Law of Open Space" concludes that to circumvent such decisions the enabling legislation in the state constitutions must be specific enough to allow statutory authority for such procedures. In New York State as one example, a park programme may be authorized by the legislature to employ excess condemnation in a limited manner; or park and recreation purposes may be met in conjunction with highway or housing improvements.25

Dedication or Contribution from Land Developer

The tremendous expansion of housing and tracts of subdivisions has led to serious municipal considerations as to ways and means of providing sufficient open spaces and recreation areas amongst the masses of dwelling units. The problem appears to begin at the time the raw acreage is ready to
be divided into lots. This point is the last chance the public has to set aside sufficient acreage, unless the developer in assessing the amenities and enhancement that might be derived indicates a desire to set aside a portion of the site for a park. At the present time, interest has risen to the point that communities do not want to wait for the developer to decide whether land will be made available. In many locales the practice is to require a contribution of land for park purposes; some community's yardstick which is uniformly imposed by ordinance amounts to five percent of the tract for recreation. This fraction may vary but usually bears a reasonable relationship to the density pattern of the subdivision.\(^{26}\)

**Parks Restricted to Residents**

In the U. S. this procedure has been a fundamental question of public power as to whether or not a community may condemn land for parks recreation or open spaces and then restrict the use of the area for the exclusive benefit of the residents of that community, or for the benefit of the families whose property adjoins the particular area. Expert opinion feel, the law is not clear in indicating whether such a practice is possible or not.

**Open Space as a Conservation Measure**

From a legal standpoint the objective of a conservation programme is to acquire undeveloped open space as a natural resource for watershed protection, flood prevention, wildlife preserves, and recreation purposes. The public purpose in this case is rather broad in its approach and possibly from a strict planning sense may even be to all-encompassing, however, the principal elements are relative to the topic of open space. Legally, the opinion
is that if many public uses and purposes are being served concurrently it will reinforce the public's interest in having the programme proceed without the possibility of deterrent action from the courts. A further U. S. suggestion is that if the highway planners were aware of such implications they could utilize these perogatives in creating needed open spaces; under such a plan there would be a legitimate right to acquire drainage areas on both sides of the right-of-way as eventual open spaces. California has just passed an enactment that could be of major significance; its main purpose being to authorize both cities and counties to purchase or otherwise acquire rights in real property in the interests of conserving and preserving open spaces.

Land Reserved for Public Use

The lack of metropolitan government with its associated metropolitan departments has brought in the U. S. a different tact in an attempt to procure open space for future use, in essence, a land bank. This plan would provide sites for future parks, schools, and other public needs in advance with the hope of avoiding rising land costs. Legally it has been held that public agencies may acquire real property for public use if a particular purpose is specified such as parks. There is some doubt whether the courts would be amenable to allowing a blanket proposal for any public purpose, although a liberal view has prevailed in cases involving public buildings, schools, and other public institutions.

Before proceeding on to discuss probably the most important proposal, "conservation easement", it might be well to summarize the previous pages pertaining to taxing powers, police powers and eminent domain. This app-
raisal has been evolved to describe in a brief manner some of the implications, procedures and proposals that have been offered and the legal considerations that in many cases were set down by authorities in the field of law. These techniques have primarily been drawn from American experience; however, this in itself should not destroy the usefulness of the evaluation when applied to the Canadian scene. This list is not an exhaustive tabulation of the methods that are available, nor is it completely comprehensive in covering all the aspects of parks, recreation and open space administration and planning. The intent has been to draw on the pertinent data and extract relevant legislative material that would apply to the subject of this thesis. In this manner a broader background would be created to judge the thesis that is to be postulated.

Most of the methods as discussed are useful in themselves. They suffer, however, from a major drawback of being too compartmentalized and narrow in viewpoint to be applicable to the job of metropolitan park planning. Zoning has played a worthwhile role in stirring public opinion and delaying urban encroachment. Certain aspects of the problem of relieving the assessment pressures on open spaces also have merit, as do several other statutory means. Each method, then, in its own way will add to the total strength of the public administration, but a more powerful legally acceptable implementation tool is needed over and above these if an adequate park planning programme is to be carried out in the metropolitan community.

**Conservation Easements**

William Whyte, after a great deal of consideration and study has come forward with a future oriented proposal which he has aptly named "conser-
vation easements". He has used as a basis for his premise the view that open space programmes are for the public benefit and public purpose. His thesis is to conserve key portions of the countryside by means of purchasing from the landowners their rights to develop the site into a potential subdivision. Such a practice is thought to be of real pre-emptive value in providing future options as well as still keeping the land in productive use while the community is deciding on the particular function that is suitable for the land in question. To be more specific: the areas of activity felt to be most important relate, first of all, to the preservation of watershed areas, generally thought of as the key areas by conservationists for both beauty, flood control and a source of drinking water. Another factor is the use of conservation easement in areas where prime farming lands are suffering from urban inroads. In this instance, the plan is really a step beyond the exclusive agricultural zoning devices. Easements will be exercised as a tool for protecting parklands, and potential recreation areas in a manner complementary to the outright purchase of necessary areas. Another of the primary benefits derived would be in controlling urban sprawl by means of channelizing and concentrating population growth. The view also is that purchasing rights are less expensive than acquiring fee simple.

As a precedent, the principle of eminent domain conveys to the public administration the right to acquire property if such procurement is for the public good and the owner has received just compensation. In this case the objective in the easement plan is to purchase from the landowner one or more of the rights in land so that the public interest may be served without having to
secure the entire bundle of rights. As a means of substantiation the suggested programme has drawn on particular kinds of easments which have met legislative approval and have behind them a successful body of court experience. These have been classified as: scenic easements for park purposes, scenic easements for parkways and highways, right-of-way easements, airport easements, and easements for water control.

Perhaps, one of the strongest justifications in such a programme lies in the suggested payment of just compensation to the landowner for giving up his property right. This compensation has been estimated as what the property is worth with the easement and what it is worth without it. The difference is the damage which the owner suffers. The best estimate in calculating the loss to the owner usually involves a consideration of the fair market value of the property.

At any given moment the market value of an interest in land is the price reasonably expected to be realized when sold by a willing seller to a willing buyer after adequate time and exposure to the market.

How much an owner will be giving up will depend on the time and the place, for example, if the property owner is in the midst of a suburban development, and is faced with rising assessments and sky-rocking land prices the amount could be a great deal. Mr. Whyte in assessing the merits of his scheme lists as well as the public benefits those that would be applicable to the individual landowner. These advantages are presumed to enhance the possibility of the owner relinquishing his property rights to the public agency. Rather than waiting for a possibly hypothetical return there would be immediate compen-
sation. Coupled with this factor is the uncertainty in the market that the trend will continue towards higher prices. In any consideration serious thought must be given to the replacement costs, if the land were sold, especially since the market is currently in an inflationary state. The protection to be achieved under the proposal is garnered at a low cost with the added likelihood that there will be a possible increase in the property's potential as estate land. Not all the property may be needed and if not the non-injured remainder will become more valuable.\(^{34}\)

A critical aspect of the easement question is the need for a fair tax treatment. The problem at the moment is that the legally constituted uniform taxation clauses in the U. S. gives the municipal assessors considerable leeway in interpreting the regulations. The premise in the case of easements is that if the land isn't available legally for subdivisions then it cannot be comparable to properties that are and therefore should not be assessed on the same basis.\(^{35}\)

There are three areas in the easement programme where certain practical questions remain to be answered: the cost to the public, the means of financing, and the agencies capable of administering such a plan. In these three aspects there is still some doubt as to whether the complete answer have been made by William Whyte especially if the metropolitan area is evaluated in light of his proposals. The report by William Whyte speaks of assessing the matter of costs in terms of its close relationship to the public purpose. It goes on further to state that the "direct costs" will depend on the size of the condemnation awards, the number of gifts, the particular physical
area and the time period involved to name but a few. The crux of the matter is the reference to the deducement that only a relatively small portion of the area will be subject to development rights purchase, in many cases on the edge of metropolitan areas (a figure presumed to be less than five percent of the total). Such an evaluation still obscures the potential cost advantage in relation to outright purchase of selected critical open space sites in the metropolitan areas, where urban pressures in a great many cases would have substantially increased the market value of property. The advantage of easements would seem to bear a direct relationship to the distance from the densely settled urban communities outwards into the hinterland.

Even though a series of alternative propositions are put forth for handling the financing of an easement programme, they in themselves do not appear to be comprehensive enough to aid in the implementation of such a conservation policy. The real need is a source of revenue that will be recurring on a regular basis, and is thought of as serving the particular purpose at hand: conservation and preservation of open spaces. Not only is this to be a prime objective but the goals in view of this thesis must relate to the metropolitan region specifically. The methods outlined by William Whyte generally do not meet such requirements, for example, an adjunct to other public programmes, in which the provision for open space may be financed out of appropriations made available to other public improvement programmes. A further recommendation conceives open space benefits accruing from an expanded concept of highway use whereby certain roadside rest areas are acquired. Additional suggestions propose the issuance of general obligation
bonds that would be backed by the state, or federal participation by means of
direct contributions. Other alternatives ranged from attempting to obtain a
legislative appropriation from the general funds of the state to the charging
of a special benefit assessment to adjacent owners.

The required organizations needed to implement the programme vary
from the state levels to local agencies and special districts as well as pos­
sible federal and private support. It is contended that many of the local
governments do not recognize how much authority many of them have been
given; in some areas the local government has been empowered with the re­
ponsibility of purchasing rights in land as well as fee simple. The role of the
state in this case is critical in guiding the local constituencies as the local
government, after all, is a creature of the higher level of government. The
problem from a metropolitan standpoint is that none of the mentioned forms
of government suitably apply directly to the case of the metropolitan area.
The local municipalities are restricted to their own political jurisdictions;
the state or provinces therefore leaves the general metro area's adminis­
tration to these disjointed units, and as a consequence the comprehensive app­
roach is discarded.

The key question is the real applicability of such a scheme as a means
of planning for open spaces, parks, and recreation areas in the metropolitan
region. The claim has already been made that easements will channel develop­
ment but there is no mention of what method will be decided upon to ascertain
where such development should be located. It almost appears feasible to
conclude that wherever there are no easements on land that is the acceptable
location for development. From a planning point of view this presumption is obviously inadequate. Any over-all programme for open space acquisition should conform to the goals and objectives set forth in the metropolitan area's master plan. Under the development plan measures could be adopted to prevent urban sprawl and encourage orderly growth of urban functions and activities. In this manner, the form of the metropolis would be given a structure and shape, and at the same time a balanced relationship would exist between urban and rural land uses. The planning of a regional setting in a metropolitan area requires the choosing of the right place and use for forests, park, scenic reservations, crops, pasture, watershed protection, wildlife reserves, and golf courses to name but a few. In other words, open space planning is not what to do with the left-overs.

The other facet of the same question is related to the particular suitability of the sites where easements may be secured and the cost involved in securing such rights especially within the metropolitan community. If a large sum of money has to be expended to procure easements in general locations, where the open space is thought of as suitable and the owners are willing to give up their property rights; a better solution would be the direct purchase of sites which are considered the best from the objectives of the development plan. The higher costs of obtaining property rights within the expanding metropolitan region would greatly detract from the advantages to be gained by its application. This factor is especially true if the difference between the cost of property rights and cost in fee simple is relatively small and if the purchased sites selected will be in conformity with the development
Another point in dispute is the rationale of grouping together in an open space programme such separate and distinct objectives as the acquisition of parks and recreation land with the control of urban growth, and watershed conservation. The claim is that each aspect to be socially desirable must relate to other environmental conditions. Thus, the motivation of each objective requires its own acceptance on the ground of a public need not merely as part of an overall combined programme for open space. The assessment in every case, could then be made on the basis of the public advantages and disadvantages.

Another practical consideration is the question of to whom the development value, if any, should accrue if and when development becomes timely. The answer would seem obvious because if the owners are to share in the increment of value they could become a pressure group for development. In addition it would be very inequitable to provide for their sharing unless the pertinent real estate taxes saved were paid back. 38

In the evaluation of the principles of conservation easements it is not meant to be implied that this technique is inappropriate for preserving open spaces. As a general means of protecting open spaces this public tool holds great promise. However, from the point of view of this thesis it is maintained that rather than easements becoming the leading force it should supplement the more comprehensive metropolitan park planning programme. It is envisioned that many of the previously referred to methods will be utilized wherever they are thought to be legally feasible and valuable for the public good.
Principles of Compensation and Betterment

Another aspect which bears mentioning in the discussion of the various legal and public acquisition techniques applicable to an open space programme is the principles of compensation and betterment. It is generally agreed that land required for public purposes should be bought at fair market value. The ironical fact about the higher costs of present day land acquisition is that a substantial portion of their value is due to public works and amenities which serve them. In paying for these lands, even in the case of expropriation, the public is in fact being charged for additional value which the public itself has conferred upon them. The arguments has been advanced that the state has a right to recover part of the value of the property, that part of the value which has accrued to the land as a result of the public works installations.

These considerations have an important bearing on the purchase of private land for public use. In this regard most of the experience has been in Great Britain where there has been a long history of legislation with respect to these concepts. The Uthwatt Report published in 1942, studied the subject of development rights, the payment of compensation and the recovery of betterment in respect to the public control of the use of land. In evaluating the concept of compensation, the English common law was quite clear, that an owner of property does not have an unlimited right to with his land as he sees fit. The growth of land-use planning and zoning has gradually widened the principle with particular regard to protecting the society at large rather than individuals. However, the well established principle of the common law
states that if the state deprives a man of his property, compensation should be allowed. If the state uses powers to limit the owner's rights but does not deprive the property holder of his ownership then there is no reason for compensation.  

The other part of the question was that pertaining to the principle of betterment, in which the value of land increased because of government action either in a positive (public works) or negative (restrictive) manner. It was further understood that betterment meant the money that was recoverable from the owner in respect to the increase in the value of the land through public endeavours. This committee in making their analysis identified two factors which affected land values and therefore needed to be considered with compensation and betterment: "floating value", and "shifting value". Floating value was defined as the value that the land possessed due to the expectation that it may be needed for development. This value is speculative since the anticipated development may or may not occur, and it would be difficult to predict where or when such development would take place. The shifting value was thought of in terms of where the land is taken out of the open market either by public acquisition or by prohibition of its development then the value of other land not so restricted is increased. Thus, the value lost by the restricted land is shifted to the unrestricted and therefore on the National level the gain balances out the loss.

The recommendations proposed were qualified in that they were split into two categories, those pertaining to undeveloped land and those to developed. In undeveloped land the proposal was to prohibit development of
all undeveloped land outside the built-up areas and to pay compensation to
the owners for loss of the development value. On developed land, the public
powers for purchasing land was widened and simplified. In addition it was
suggested that the periodic collection through tax levies on the increased
values remaining in private ownership would secure the betterment.

The Town and Country Planning Act of 1947 incorporated many of the
ideas of the Uthwatt report, with one major change, the application of develop­
ment rights to all land rather than just undeveloped land. The act further in­
troduced a development charge whereby if permission is granted to develop,
the resultant increase in value of the property involved is paid by the
developer to the state in the form of a development charge. The problem even
with a type of central government such as Great Britain is in the complications
involved in ascertaining the values of compensation and betterment. Many of
these difficulties have still not been fully resolved in the administration of
such payments.

In the case of North America, and especially Canada, even though the
common law is based on the English system there are still further problems.
The federal form of government would mean that the principles of compen­
sation and betterment would have to be dealt with by the provinces. Such a
radical departure from present government administrative devices appears
highly unlikely. Thus, from a Canadian viewpoint it would appear that the
approach as taken in Great Britain is not totally applicable. The concepts
appear more appropriate when viewed in the context of paying compensation
for the acquisition of development rights as per William Whyte's treatis.
Betterment, in essence, is then collected through the increased taxation of the land as its valuation increases.

In either case, the whole subject is extremely complex when studied in regards to public needs and wants for open space and park lands. Further, from the point of view of the thesis, it is proposed that the utilization of development rights is not the answer to the problem of preserving open space. Hans Blumenfeld, in appraising the use of development rights, is also doubtful that the public could save much by acquiring merely development rights rather than full title. 42

**Metropolitan Government**

No examination would be complete until the role of metropolitan government was studied in relation to the problem of conservation and preservation of metropolitan area open spaces. Today there is a growing public awareness that the present structures of local government are inadequate to cope with the increasing number of problems that are evolving in the expanding urban communities throughout North America. Most well-informed people as well as leading political science and planning authorities feel the only answer is a level of government whose jurisdiction would encompass the relevant municipalities which are linked socially, economically and physically with the core of each region. "Metro", as it is colloquially referred to, would be responsible for a number of important public service functions, one of which would be parks.

It could be argued that the formation of such a jurisdictional body in the metropolitan area would solve all these difficulties that are occurring in
diminution of open spaces and park lands. The truth of the matter is that although such a government is a progressive step it is not in itself the total solution to the problem at hand. It is one thing to organize an efficient and all-encompassing department that is responsible for the planning, acquisition and maintenance of park lands and recreation areas, it is another to have the financial assets to be able to carry out the future planning programme.

It is the premise of this thesis that without the power of implementation, in this case, the necessary funds, all the well-planned and well-conceived recreation areas in the metropolitan region will only amount to so much waste paper. Under the usual conditions of metropolitan government there is a severe restriction on the amount of money that can be allocated to park development. This statement is not meant as an argument against metropolitan government but rather as an expression of the pressing urban conditions that have forced all local governments into large expenditures and public concentration on water, sewer, traffic and transportation facilities. Much farther down the list of priorities is the public agency's responsibility for park and recreation facilities. Yet, here in the expanding metropolitan area is where one of the leading crises in open space conservation is to be found, and time is running against the community.

The whole subject of metropolitan park planning will be discussed in the next chapter in association with the plan proposed to rectify some of the present open space problems in the metropolitan area. The general programme is envisioned as being contained within the framework of a metropolitan government structure, but containing a specific provision for securing
adequate revenue.
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CHAPTER IV

PROGRAMME FOR PRESERVING METROPOLITAN OPEN SPACES

During the previous chapters an attempt was made to briefly sum up the situation as it exists at the present time. Initially, the metropolitan area was described in light of the problems that are confronting the total community relative to providing open space for the expansion of the population. The ramifications of such needs are tied in with some of the difficulties that have been encountered, for example, urban sprawl, the loss of agricultural land and overuse of recreation resources, to name but three. Much has been written on the subject, a great deal of publicity has been given to it, but really no permanent practical solution has been devised that can be instituted on a comprehensive basis.

From this point, the whole field of recreation, conservation, and open spaces was described with the objective of bringing together all the factors that have influenced our society and have drastically affected the demands on leisure pursuits and recreation activities. The outgrowth of these human drives was further related to conservation of natural areas and the physiological and psychological wants of each individual citizen.

The preceding chapter was devoted to an examination of some of the
leading proposals pertaining to the legal ways and means of securing and preserving open spaces. Two of the principal techniques were studied in greater detail, that of exclusive agricultural zoning and conservation easements. An additional step was taken in evaluating the role of metropolitan government in procuring open spaces.

The Problem

The objective in each case was to cover all the aspects of the field of recreation, parks and open space in order to understand the concept that is to be employed in developing a definite programme for the metropolitan community. The reiteration of these before-mentioned facts has been to emphasize the conditions as they do exist and to draw attention to the judicial tools that are applicable. The difficulty in deriving a satisfactory answer is really two-fold: first, most of the solutions that have been put forth are too narrow in scope, focussing mainly on only one particular segment of the problem, for example, exclusive agricultural zoning, sprawl conditions, outdoor recreation, subdivision control, air and water pollution and the preservation of existing parks. For planning purposes a more all-inclusive programme is needed, one covering all the aspects that could have an affect on the development of the metropolitan area. Within the general framework of such a plan, the various techniques of preserving parks and open spaces would function on a more efficient and realistic basis.

The second problem that has limited any comprehensive approach has
been the lack of any organization whose jurisdictional authority encompasses the socially, economically and politically related areas of the core cities. The present disjointed political structures are unable to cope with either the jurisdictional or financial requirements of such a large area. In the main, the municipalities contiguous to the principal core city find it difficult to keep abreast of public service demands for water, sewers, police and fire protection, as well as roads and garbage collection, without extending themselves further to provide general open spaces and parks for the total metropolitan area. The problem is that no overall political body, outside of three or four cases, is made responsible for the administration of the metropolitan community and without this organization there can be no long-range, well-planned programme to meet the growing open space needs of the metropolitan area’s citizen.

As already stated, an important if not the most important part of any proposal must be that the objectives are justified as being for the public benefit and will therefore meet with the approval of both the legislature and the courts. Over the last few years a backlog of legal precedents has been accumulated pertaining to the use of various techniques to preserve open space for the public’s need. Fortunately, the courts have been more responsive to the needs of the growing community and to the enlarging concept of our society as to what is the appropriate role of government in the case of open space. This responsiveness is shown in the steadily expanding definition of public purpose. As already mentioned in Chapter III, there
is no issue as to the fundamental legal power of the public administration to spend money for land acquisition or to condemn land for such programme. It is, therefore, envisioned that the forthcoming proposals will be thought of in terms of the public benefit and will not be in opposition to the general views of the courts. This assumption is extremely critical in assessing the feasibility of any programme that is expounded because if a particular plan runs afoul of the courts the whole approach would collapse before getting started.

The first stage of our analysis is to ascertain the best public administration organization that will function within the metropolitan area. The structure of this particular political unit is of primary significance in carrying out the proposals later discussed for the conservation and preservation of open spaces. There is little doubt that such an all-encompassing role can only be performed by a metropolitan government administration whose authoritative jurisdiction would cover the disjointed political units which are either socially or economically related to the central city.

The particular design of the "metro" administration will depend on many local factors in the particular area where such an organization is recommended. The political climate as well as local public opinion and interest will affect the final design that is decided upon. In this regard, two of the leading types which have been already utilized are the borough system (Great Britain) and the federated system. Another important aspect is the number of functions that are the responsibility of this new level of government. These,
again, will vary depending on the general agreement of affected municipal bodies and the pressures that are brought to bear from the higher levels of government. One function that will be of primary concern to metropolitan parks and open space will be the department of land use planning. Really the answer will be more than just land use planning as there will be a need for an enlightened metropolitan council upon whose shoulders rest the decisions for the physical development of the metropolis. These public servants will be in a vital position to guide the development of the community in the best possible manner.

A major task of the Planning Department will be to draw up a Master Plan for the metropolitan area in conjunction with all the other departments. This development plan must not only be devised in association with the other affected departments but must adhere to the objectives of the policy-makers. An extremely important phase of such a plan is the need to have the policy body, the council, reach certain decisions on the future goals and objectives of the total community so that the general master plan can be completed and approved in principle as a guide for future development. Once the metro council has committed itself to a policy line the other metropolitan operating departments will be able to direct their attention to achieving the particular goals and objectives that have been set out by the decision-makers. Under such a programme there will be a definite possibility of working towards a balanced community that contains a structuring of the various urban as well as rural activities on the fringe areas.
It is contemplated under the programme envisioned here that a Metropolitan Park Department will operate within the framework of the Metropolitan Government and be responsible for those park and open space locations that are considered to be metropolitan in scope. (See earlier definition of metropolitan parks, open spaces and recreation areas). The function of this department will be very much like any other park authority working inside a large municipal region; thus such tasks as administration, maintenance, supervision, programming and many other responsibilities will be part of its work load. Such a department will have one advantage in that the use of an overall development plan will aid in park and open space planning. At this level the park administration will be able to adapt its particular objectives to dovetail into the Master Plan as construed for the metropolitan area in total.

It is from this point that the problem arises, once the main obstacle of gaining overall political jurisdiction with its complementary public services functions has been accomplished. The initiation of a vigorous park planning and development programme is still a further step in fulfilling the goals necessary for a better community in which to live. The source of public administration difficulty is the transition from the actual planning, programming and design stage to the implementation stage. Here, is where most of the afore-mentioned schemes and proposals fall down. It is fine to draw up elaborate reports and substantiating evidence to back up certain goals for ways and means of securing and preserving open spaces.
but if these objectives cannot be fulfilled then this concerted effort hasn't really achieved anything. Similarly, in the case of a metropolitan park agency, within the framework of metropolitan government, if this department is unable to expedite various projects and plans for parks and open spaces then it too will be handicapped in performing the duties originally assigned to it under the charter of the metropolitan government. Once the possible internal conflict and the political decision-making aspect has been consummated within the structure of "metro", the causes of difficulty in most cases are relatively straight-forward; first the lack of sufficient funds, and secondly the shortage of enough trained and experienced personnel to carry out the programmes to their successful fruition.

The key rests with the metropolitan park authority obtaining a steady source of funds necessary to carry out the long-range plans of the department. This revenue must be of a continuous nature, as well as having the assurance that such money will not be withdrawn. In this manner, the parks department will be able to devise a capital budget programme possibly on a five year basis and will be able to programme its activities along the same lines. Thus, a systematic appraisal can be initiated of the total area establishing a schedule of priorities that could be used as a guide in policy matters pertaining to future acquisition of required sites.

Financial Implementation

The proposal advanced here is relatively simple: in order to accu-
mulate an equitable and sufficient sum of money for the "Metropolitan Park and Open Space Development Fund" a proportion of the gasoline tax collected in the metropolitan area would be paid into this fund. Each particular metropolitan area would receive an agreed upon percentage of the revenue from the gas tax collected from its own area and only its own area. Such technique should be applicable with possible modifications to other parts of Canada as well as the U.S.

Before outlining the method in detail it would be wise to mention the justifications of such a proposal. Many public improvement programmes in the U.S. permit, at least partly, the use of their funds for open space development. The expanding concept of "highway use" allows the use of highway funds for roadside rest areas in such States as California and Ohio. The "Oil and Gas Lease Funds" in California are available for park and open space programmes. In Pennsylvania, the Department of Forests and Waters convinced the legislature to establish an "Oil and Gas Lease Fund" and stipulated that all royalties from state-owned gas and oil lands were to be utilized by the Department of Forests and Waters.¹

In prior chapters an attempt has been made to describe the present day situation in order to elucidate the changing conditions relative to the demands for outdoor recreation and leisure time pursuits. There are many indications around the countryside of North America as to the consequences of such increased heavy demands on our outdoor recreation,
park, and open space areas. One of the primary factors causing the changing way of life has been the advent and acceptance of the automobile by the average North American family. The outgrowth of the fantastic increase in car ownership, in all walks of life, has meant a heavy demand for more highways and roads to facilitate the movement of such vehicles. Since the end of World War II a tremendous building programme in both the U. S. and Canada has seen thousands of miles of new highways being constructed all across the country. These travel facilities have made it possible for families to drive practically anywhere throughout the whole land. What has happened is that with increased leisure time, people have taken advantage of these opportunities to see and enjoy the countryside. Not only have they driven into the rural areas, to the state, provincial or federal parks and other recreation facilities, but they have become increasingly aware of the areas that are closer in towards the core of the metropolitan regions. The result, as already described, is a substantial pressure on all types of facilities to provide the satisfactions that the public is striving for.

Another aspect, already discussed, is that the automobile, with its mobility, has permitted the average citizen to live farther and farther out in the fringe areas of the metropolis. The impact of scattering has further strained the economics of each separate local government in the metropolitan area and has played havoc with potential open spaces as well as creating shortages in park and recreation sites in the surrounding areas.
Thus, it would seem only logical that such an instrument of public demand should help to alleviate some of the problems that its accelerated use has helped to create. If there are to be more vehicles, more highways, and greater and easier means of travelling to and from the natural landscape, then, for the public good some of this money should be used to develop in a more intensive manner additional outdoor recreation areas needed to fulfill the increasing demands being placed upon such facilities. It should be funnelled into the treasury of an agency that is capable of providing additional locations so desperately required in the regions where there is the most urgent need, the metropolitan community. Not only would such a plan be serving a public purpose but it would be providing a worthwhile land use function where the majority of the people live. The programme would therefore be accommodating a large percentage of the population and yet would not be taxing any activity or citizen who was not a part of that politically administrative territory. In addition, people who did not live in the area and who would not directly be contributing to the tax could still enjoy the extra benefits that would be provided.

Turning specifically to the proposal itself several facets of the method would need further clarification before being made operational. The main problems in this regard would pertain to the proportion of the gas tax that would be allocated to the fund; the separation of the gasoline users into those residing in the metropolitan area and those who do not; the level of government that would collect and distribute the required share to
the fund; and the public agency that would administer the fund and be responsible for the budgeting and spending of such revenues.

There are several difficulties involved in ascertaining the proportion that would be transferred to the "fund" from the gasoline tax. The first would be determining the exact ratio of each participant's share of the total amount. It is envisioned that the specific figure would be agreed upon only by negotiation and consultation between the metropolitan agency and the provincial government. The accepted percentage or ratio could be applied in a number of different ways, for example, as a "cent" share of each gallon of gasoline; or as a percentage of each month's total receipts applicable to the metropolitan community.

The simplest and most economical means of distributing the tax revenue would be to apply a single percentage ratio to the total gas tax chargeable to each metropolis. It would be extremely hazardous to arbitrarily select an overall rate which would be thought of as equitable in any metropolitan community because of the number of variables that are present. Each metropolitan community differs in physical size, in population, in per capita income, in public service requirements, in public responsiveness and demands, as well as in total vehicle registrations and volume of gas consumed. The formula developed would need to be tailored to suit the conditions prevalent in each particular area. It should be emphasized, however, that the funds must be of sufficient size to satisfactorily finance a programme of park and open space planning and development on a
continuous basis.

A legitimate statistical formula would need to be devised to divide the gasoline users into metropolitan and non-metropolitan. It should be possible to sample the gasoline consumers over a reasonable period of time and arrive at an average figure for both the metropolitan and non-metropolitan regions. Once computed, this formula could be applied against the total gasoline tax returns in order to obtain the correct division between the two areas; from this stage the "approved" ratio would be applied to obtain the final annual allocation of revenue to the "fund". Under such an arrangement it is presumed that for the sake of accuracy this statistical formula would be revised periodically in order to account for any marked fluctuation in consumption of gasoline in the metropolitan community.

Inherent within the programme is the assumption that in the case of Canada, the province, would continue to levy the pertinent rate of tax on gasoline and would still administer and collect the revenue derived from such taxation. As this function is a higher level of government's perogative there is no suggestion that the proposal run contrary to such constitutional powers. In addition, the handling of the tax completely by the province would overrule any chance of duplication or error in collection, administration and tabulation of gasoline tax revenue returns. In other words, the provincial authority would have a complete record of this tax factor.
The new step in the operation is the distribution of the "Approved" Budget to a metropolitan area agency for administration and spending. This procedure would be an innovation, in relation to the gasoline tax, but is not really new in governmental procedural technique. At the present time, the provincial government allocates annual grants to municipal bodies as part of their respective public budget for operating each particular municipality. There is legislative precedent in the sharing of tax dollars by each level of government so there is really nothing drastic in the proposal as outlined. The procedure, as developed, would add very little extra work load on to the provincial administrative staff, and yet full control would still be retained in their hands.

It is presumed that the financial handling of the distribution will differ little from what is presently being employed in the provincial financial department. Thus, the incorporation of an additional municipal tax-sharing programme would dovetail in with other dual agreements between local governments and the provincial government. In this manner there would be no discrepancies in the accounting techniques utilized nor would there be any overlapping on the closing of the province's books, the period used for the fiscal year, budget procedures or time of payment to the metropolitan agency. The only financial change would be a reduction in the actual revenue applicable to the provincial government operations and a provision for such a decrease in the forecasted budget of the provincial revenue and expenditures.

Once the programme has been publicly justified, corroborated, and
ratified, the last remaining key link in the chain of public responsibility is the local agency needed to undertake the administration of the "fund". As already stated, the political structure is to be a metropolitan government divided into various operating departments to administer the many public service functions of the new level of government. From the point of view of this thesis, the parks department is of major concern here.

This department will be in charge of the revenue allocated by the province from the share of the gasoline tax. It is assumed that as a control measure the department will enter into a long-range capital budgeting programme. In this manner present revenue will be forecasted into future totals for the purpose of planning future acquisition schemes and park development undertakings. It is further suggested that a separate section within the department will be established to handle future park planning and land acquisition. The operating budget for maintenance, repairs and upkeep of any present metropolitan park and recreation areas would receive its appropriate share of the metropolitan government area's public funds. It might be added that this sum would in all probability be less than would normally be the case because the share of the gas tax revenue would relieve the need for including funds for land purchases in the metropolitan government's budget.

The Programme

The metropolitan park department would take on a new role as well as serving the usual functions that are generally considered as part of its ad-
ministration and authority. It is envisaged that a special section would be created, possibly known as the "planning, development and land acquisition section", whose responsibility would entail the study, selection, and planning of future sites for parks, outdoor recreation areas, and natural open spaces. The long-range planning would be done in conjunction with and relative to the master plan for the community as a whole. Further, the work of this section would be co-ordinated with the work of other functional departments, where applicable, so that there would be no overlapping or conflict on land acquisition for the variety of public purposes.

The financial method recommended would lead to the procurement of selected sites by means of purchase in fee simple. In this manner, the public agency would buy the property from the respective private owners or other public agency for a price considered to be the fair market value of the land. The actual setting of the accepted price would depend on the seller's floor price, the buyer's (public) ceiling price, and the valuation set by a qualified land appraiser in assessing the "true" value of the property in the market. It must be emphasized that the bargaining arrangement and resultant agreement must be fair and equitable to both parties concerned.

Selection of the particular areas to be acquired would depend on the long-range study of the community's needs, set down on a priority list, and included as part of the parks and open spaces development plan. A further stipulation is that such a land acquisition programme adhere to the total master plan for the whole community. The park department's plan
should be the catalyst for all the objectives that are felt to be a part of the function of the agency. In this case, it is proposed that a comprehensive approach be taken in relation to the scope of the metropolitan area's public need, thus, not only would parks and recreation areas be secured, but also reserves for natural open space, wild life, possible flood control and stands of trees (not for commercial exploitation) as well as agricultural lands for future potential sites and general open spaces.

It is felt that the high level of land values in and around the metropolis would almost assuredly detract from any proposition other than fee simple. As previously mentioned, the conclusion reached was that the cost of conservation easements would almost amount to the same total as if the land was bought outright from the private landowner. Also, any other present suggestions, would seem to be too short-range or not all-encompassing enough to fulfill the real needs of the community. Of primary concern in any development programme would be the perpetuity of use. Unless the land is positively preserved as public domain there will always be the chance that the land may be lost to a more intensive development.

There are three important aspects of the programme that need to be analyzed in order to appreciate the true implications of its general objectives. Each one, in its own right, is extremely important and without its successful culmination the plan as construed would lose public appeal. Two of the three phases are internal functions of the parks department, the other is an influential external factor.
Internally, the department's development section must initiate a comprehensive analysis of the metropolitan area's outdoor recreation needs. To secure such information, a thorough study of all recreation demands must be undertaken. From this detailed investigation the general development programme may be drawn up in a logical and systematic manner. Each future land acquisition transaction will be able to follow a laid down pattern established by the administration in which the staging of each purchase will aid in forming an integral part of the total of all the forecasted recreation needs.

One of the most salient features of the studies would be the ascertainment of the needs of the people within the metropolitan community for outdoor recreation. Such an analysis should examine the population in detail in order to discover the age distribution, sex, cultural background, education, capabilities and interests, to name but a few of the characteristics. Other factors are also important, for example, the affect of increased leisure time, mobility and additional income on resident's demands and preferences for outdoor recreation.

Not only must the people in the area be considered but also those who will possibly visit on pleasure trips. In the one case the requirements will be on a year-round basis while those of the visitors will be mostly seasonal. The impact of this demand will depend somewhat on the size and makeup of the two groups, although in most instances the majority will be local citizens; the time at their disposal, and how and where these people spend their time.
Before any projections and forecasts are developed as a means of planning for future outdoor areas, a comprehensive and thorough evaluation of existing areas and facilities should be undertaken. Along with this examination should be an accompanying study of facilities and services which are provided by private agencies, institutions and commercial enterprises. In this manner, the total existing recreation services in the community would be ascertained.

Utilizing these statistics as a base, the demand trends could be projected into future requirements for the physical areas, resources, facilities and other elements necessary to provide the optimum in quantity and quality of outdoor recreation. The final step, and a critical one would be the completion of an intensive and extensive survey of the areas to discover the amount of suitable land that is available, or is potentially ready for use as outdoor recreation areas.

Turning specifically to the future needs and demands of the metropolitan citizens, certain activities necessitate being studied in some detail to analyze their affect on land uses for recreation. The first one of consequence is recreation travel; even though in the metropolitan community the distances will be relatively short, there still will be a heavy volume of traffic and a need to provide sight-seeing attractions along specific routes. These scenic spots will provide aesthetic relief for families and people who are taking a "drive" with no particular destination in mind. In addition, the increasing use of the auto will add materially to the pressures
for such natural locations. Part of the same aspect is the provision of
facilities for sight-seeing and study. Here, the prominent group will in
all likelihood be the family and the most intensive use will be weekends
and possibly weekdays, moderated by weather conditions and seasonal
variations. Landscape along the highways and roads is needed, together
with access roads to any other attractions that are designated as scenic
landmarks. The danger in this case is that any natural and wilderness
lands so designated in the metropolitan region will become over-used.

Picnicking is another leisure activity that requires space for in­
creased utilization in the metropolis. Most picnics are held during the
summer months, and on weekends with Sunday being the most popular day.
Again, the family is the most important user of such facilities and should
be planned for as such. Within the region there will be a call for facil­
ities necessary for picnics, for example, a natural setting, which includes
tables, benches, nearby water supply, cooking and sanitary facilities as
well as auto parking space and proper access.

Riding and hiking are other facets of outdoor recreation that should
be planned for in the metropolitan community. Hiking could be questioned,
depending on the particular physical terrain, but if the metropolis is situ­
ated in a relatively rugged physiographic region such an activity should be
included. It is generally recognized that the most common riding and
hiking groups are families who usually go out for the day (Saturday or Sun­
day), weekdays being far less popular. In most metropolitan communities
today there are serious deficiencies of trails close enough in to the urban areas. The California Recreation Committee has stated that the greatest need for riding and hiking trails and facilities lies within the day-use range of the metropolitan centers. The trail system should be well planned with numerous access points and interconnecting links, so that either short or long trips can be planned. At major access points there should be equestrian assembly areas with ample parking, loading ramps and corrals for stock.

Swimming has become an increasingly popular outdoor activity in the metropolis. It is often considered in really four categories; public pools, private pools, along the shoreline of the seas, lakes, reservoirs and streams, and more recently as skin diving. Generally, there is a separate age or family group, that participates in each area of the sport; thus children more frequently swim in public pools, families use the shoreline and young adults engage in skin diving. There is a decided seasonal implication to the activity as well as a strong bias for day to day use with a heavy accent on weekend participation.

Boating has also gained in public interest since the end of the Second World War and, therefore, requires consideration in the development plan. Again, a pattern of participation is evident, most boating is done on a day-use basis, usually on Saturdays, Sundays and holidays. Normally boating is not the sole activity carried on, but is most likely associated with fishing, sight-seeing, picnicking; speedboating may be accompanied by water
skiing or swimming. Some reports specify that the average distance from home to water for a day-use boater is about 25 miles. There is then a definite need to appraise all bodies of water within the region to ascertain the feasibility of constructing new public and private boat facilities.

Fishing is another outdoor form of recreation that has increased greatly in public popularity. It is mostly engaged in by men in small groups who generally go out for the day on the weekend, although there is an increased tendency for overnight stop-overs. Future growth of the sport will largely be dependent on the preservation of natural streams and lakes, free from pollution, and additional harbour launching and docking facilities on the seacoasts.

Hunting is worthwhile mentioning even if it will probably be of minor importance in the metropolitan area. In all likelihood any real significance of this sport will depend on the natural surroundings within the particular metropolis. If the location is near the sea coast, and there are excessive areas of swampy and marshy lands some duck and geese hunting may be quite feasible. If so, then such lands would need to be preserved for not only hunting but as potential breeding grounds for various species of birds and winged fowl.

Winter activities also could play an important role in planning for future outdoor recreation facilities and land areas. There are several reservations and qualifications necessary because the climate and local
physical setting will greatly affect the potential of snowplay, skiing, and sight-seeing which all depend on snow. However, in climatic areas where snow is available there is an increasing demand by groups, usually families, on the weekends for winter sport facilities. Two of the biggest problems are the provision of adequate parking space and the removal of snow for access to the sites. Many recreation experts are of the opinion that capital from private investors should continue to be the primary means by which skiing resorts are financed; the public agencies could cooperate by providing consistent snow removal service on any roads leading to the areas.

The above is merely a general tabulation of some of the primary outdoor recreation activities that should be considered by the parks department in the metropolitan area. There are many other activities that bear mentioning and should also be given proper weighting in planning for potential future needs. These include the study of flora and fauna, rocks and minerals; visiting zoos, museums, historical and archeological sites; mountain climbing; row boating, water skiing, boat racing and sailing; ice skating; and camping.

The second internal factor is one that has financial implications. This principle would be closely associated with the process of fee simple; namely, the leasing back of property after it has been purchased by the public agency. This objective would be extremely relevant if potential outdoor recreation areas were secured in locations presently being used
as farm lands. If such land is not required for some time then it would be inappropriate to take the land out of productive use; also there is the factor of reducing the taxable income of the government administration. For these two reasons alone, it would seem advisable to allow the land to be utilized for economic pursuits. In this way neither the public agency nor the private individual would suffer. In addition, the selected sites would not be left vacant and unused until the time when park or recreation development was to take place.

In other locations, where there is presently no economic activities being carried out the approach would have to be somewhat different. If the required site contained large patches of forests and difficult terrain, but unproductive, it would be hard to imagine any private individual leasing the land for any economic endeavours. In this case, there would be little chance of providing a productive use and the land would have to be maintained by the public agency. The natural amenities and social benefits would more than make up for any loss in revenue on the tax rolls.

There is bound to be some dispute over such public practices by people who would claim that to exercise such public powers is turning too much towards socialism. While there cannot help but be differences of opinion, depending on the viewpoint of the individual, the overriding concern should be the public good. Other countries, such as Sweden, utilize public power to achieve more planned and systematic development on the fringes of the urban community. In Scandinavia the public cor-
porations move ahead of the urban development using established planning principles and objectives to guide physically the expansion of the city out into the country. To be sure, we in North America have not the same philosophy or political approach to the role of government but that does not mean that such a recourse is wrong. What is desperately needed in North America is more progressive thinking towards possible solutions that can be applied to the urban way-of-life to make it a "better place to live in". We have experienced the chaos of urban scatteration and sprawl, the wanton destruction of nature's wildlife and locales of scenic beauty, all caused by the unchecked interaction of the real estate market. We have not a moment to lose, as the time is drawing short in which to arouse a more enlightened approach in attempting to preserve some of the amenities and influences of nature in and around the metropolitan areas. The objective should be to create a balance between the urban scene and that of the rural countryside; not the enveloping and overwhelming of anything and everything that is not city life.

The external aspect has to deal with the problems involved in achieving a general fair tax treatment. Under present assessment practices, the owners of open space are at the mercy of the tax assessors. Thus, as urban development expands outwards land values soar and land, even though still in other uses, is faced with rising tax assessment. The use of a uniform approach in ascertaining the tax rate penalizes the landowner who is being encroached upon and yet who wishes to carry on with his
agricultural pursuits. A similar case can be made for open spaces such as golf courses and private greenbelts which are within the urban complex, yet are not urban activities nor is the land being held for speculative purposes. Even though there is no thought of selling for a financial gain such activities face a mounting tax assessment.

It is within this segment of the metropolitan community that easements can relieve some of the pressures on existing recreation lands such as golf courses, riding academies, and private greenbelts to name but a few. The key would be the decision that such facilities are serving a public purpose, if legally it was concluded that the public was benefiting from such green areas, then the use of easements would seem feasible. In this manner, the metropolitan agency would purchase the particular rights of selected lands for a reasonable sum, and in return these locations would be assessed on the basis of present use not on the basis of adjacent or surrounding property.

On the fringe sections of the metropolitan community the use of a fair tax treatment would aid in conserving natural open space in conformity with the master plan. While this land may not be allocated for future purchase it would add to the balance between the urban and rural setting. It is assumed that contained within the objectives of the development plan would be an attempt to achieve some sort of relief for other types of open spaces. The same principle would apply in this case, for the procurement of rights the landowner would be paid an equitable sum of money as well
as receiving a tax assessment rate based on the present use of the land not as potential subdivision tracts.

One important qualification should be made that the utilization of easements would be a minor part of the total programme. The emphasis would continue to be on the plan as outlined in the preceding paragraphs of this chapter. What is really necessary is a reappraisal of the property tax question in light of the goals and objectives of the community as a whole. A careful study must therefore be undertaken of the total assessment procedure and property tax question that would affect the programme of development within the metropolitan community.

Cost to the Public

Before discussing the costs, if any, that would have to be borne by the public at large in the metropolitan region, some mention should be made of the benefits that will be accruing. The public stands to gain a great deal if the development programme is a success and the various aspects of the needs and demands of the inhabitants are met. Physically the community will be richly endowed with expanses of natural wooded landscape, stream valleys, protected places for wild flowers, and other forms of vegetation. These will be aside from the park lands and areas developed for more active outdoor recreation pursuits. Here, the objective will be to meet the needs of the community through space, time and facilities consistent with the general recreation habits and desires of the people. Further, every effort will have been made to provide the optimum in quantity and quality.
The supply of suitable sites will be affected by the particular physical setting but all efforts will be directed towards attaining the maximum consistent with the goals of the parks department development plan. In the final analysis, and of primary concern, will be the attainment of a place for healthful living with the optimum amount of open spaces provided for all ages regardless of race, creed, colour, or economic status.

What will be the costs of the programme? The gasoline tax is already being collected by the provincial government. Such a proposal does not mean an additional levy on the taxpayers but rather a sharing of part of the revenue by the two levels of government: provincial and metropolitan. It is assumed that the tax rate will remain static and will not be increased to recoup the sum of money allocated to the new metropolitan government. This statement is based on the premise that the provincial government will act in good faith in such an arrangement. In this regard, justification for the tax-sharing has already been discussed at some length in the beginning of this chapter.

The recommendation is constructed in a manner that will not infringe upon the operation or authority of the provincial's recreation and conservation department. There is no thought that this tax-sharing arrangement will mean a reduction in the budget of this department. Again, such actions would be contrary to the objectives of providing responsible government.

The proposal as described will relieve the metropolitan government of some of its expenses pertaining to park development as acquisition and
development planning will be paid for from the "fund" established out of the tax-sharing agreement. The metropolitan government will only have to provide revenue for the general operations of the department, administration, maintenance and so forth. Thus, in fact, there will be a reduction in the allocation of operating funds from the treasury of the metropolitan government.

Requirements for Success

The success of the proposed recommendations will depend on metropolitan government being established and on the degree of acceptance from the two levels of government primarily concerned with such matters. (New metropolitan government and provincial government). In the first place, the provincial administration must be favourably inclined in principle to this innovation as outlined. A rejection from this level would seriously impede the progress of the necessary legislation; therefore, of primary concern is an enlightened body of representatives who realize the public service problems that are confronting the metropolitan communities. The members of the legislature must be able to accept these difficulties as being critical enough to warrant careful deliberation and study. The whole aspect of metropolitan government to succeed swiftly must gain its stimulus from the next level of government. These elected representatives must take the initiative in bringing forth ways and means of alleviating some of the pressures on the metropolitan community; one way, a very constructive and psychologically beneficial method, is the proposed gasoline tax-sharing
scheme to provide open spaces.

In the second instance, the interest and concern of the public in the affairs of the metropolitan community will have a great deal to do with the culmination of the objectives of the recommended plan. Public apathy, more than any other single influence could swiftly destroy any proposal that did not meet with general acceptance. Not only does there have to be pressure from the public but also a real need for public approval.

It is the premise of this thesis that the average metropolitan citizen is concerned with his environment and therefore does want a more pleasant and rewarding urban way-of-life. It is under such a viewpoint that a higher value will be placed on natural open spaces, park lands and recreation areas. Thus, to satisfy this end, individuals, citizen's committees, businessmen's groups, service clubs, and other relevant organizations will encourage and demand an efficient and comprehensive form of metropolitan government which will incorporate as part of its main function a progressive outlook on parks, open spaces and recreation area development.

In the following chapter, the Lower Mainland of British Columbia will be used as a case study to illustrate the leading ideas of the thesis. For the most part an analysis will be carried out of the situation as it exists at the present time. The objective will be to demonstrate the feasibility of adapting the recommended programme to an actual urban community.
REFERENCES


5 Ibid., p. 45

6 Ibid., p. 49.

7 Ibid., p. 52.

8 Ibid., p. 65.
CHAPTER V

CASE STUDY OF VANCOUVER METROPOLITAN REGION

As a means of examining the leading principles of the proposed programme, the Lower Mainland of B. C., specifically the Vancouver Metropolitan area, will be used as a case study. In this manner the reader will be able to visualize more clearly the objectives in applying such a programme to a particular area. In addition, the chosen area is a good example of a growing metropolis without the existence of an all-encompassing form of local government. It is proposed, therefore, to discuss the general situation as it exists today drawing on information pertaining to the present and future population, the description of the present pattern of development, and the land use and distribution of population. From these figures a brief synopsis of the estimates of future population and land needs will be made in an attempt to focus the problem on the aspect of providing sufficient metropolitan open spaces, parks and recreation areas.

Vancouver Metropolitan Area

The Vancouver Metropolitan Area, which includes the people located in and around the City of Vancouver, represents the third largest urban concentration in Canada. This area's influence over the rest of the Province is quite marked as almost one-half of British Columbia's population reside in the region. It is the major industrial and commercial area of the Province
acting as the service center for much of Western Canada as well as the rest of B. C. Further, this area plays an important role as a focus for transportation, finance, administration and also for the processing of many raw materials such as wood products.

The Fraser Valley districts, contiguous to the Vancouver Metropolitan Area are in actuality an integral part of the metropolitan area because they act as a market for the metropolis goods; they are a major supplier of food products; as well as being a readily available source of labour for industries located in the metropolitan community. Further, agricultural enterprises of the Fraser Valley are also directly dependent on the major urban concentrations. In essence, there is a close linkage between the Vancouver Metropolitan Area and the rest of the Lower Mainland of British Columbia.

The Vancouver Metropolitan Region has suffered much the same "growing pains" as other metropolises throughout North America. Since the conclusion of World War II the urban concentration has continued to grow at an alarming rate bringing with it sprawl and scatteration into the suburbs and surrounding municipalities where the majority of the population growth has taken place. It is virtually impossible to define precisely the geographic limits of sprawl; however, in very approximate terms it affects some ninety square miles of land around the City of Vancouver, which compares with a total urban area of less than eighty square miles and represents over ten percent of the total usable land of the Lower Mainland. It is estimated that the sprawl areas now contain a population of about 100,000 people or some fifteen percent of the population of the metropolitan area.¹
In 1956 the Vancouver Metropolitan Region contained the Burrard Peninsula, the North Shore, Richmond, Surrey and Delta, in total approximately 665,000 people or an increase of almost seventy percent over 1941. The bulk of the growth tended to be in the suburban areas where an increase of almost 150% was gained between 1941-1956. Table 5 outlines briefly the distribution of population by municipality.

The focus of the community is still at the western end of the Burrard Peninsula where the downtown commercial, port facilities, offices, and transportation terminals are located. The development pattern is fairly compact, although there are definite trends towards dispersion. The suburbanization of residential land uses is occurring towards the south and east of Vancouver and New Westminster. One of the principal yardsticks of judging this new areal extension is the decision by the Canada Census in 1956 to almost double the size of the Vancouver Metropolitan area by including both Surrey and Delta. It becomes very clear that the present urban areas as well as those now emerging are part and parcel of the single metropolitan complex which is inter-related both socially and economically.

The area defined by the census has been accepted here as delimiting the metropolitan region and constitutes the Burrard Peninsula, the North Shore, Richmond, Surrey and Delta. See Figure 4 for the specific demarcation of the Metropolitan Community's boundaries. The Lower Mainland Regional Planning Board has calculated this area to cover approximately 484 square miles, although most experts feel its actual impact affects the whole of the 1600 square miles included as part of the Lower Mainland. Most studies or
### TABLE 5

**DISTRIBUTION OF POPULATION WITHIN VANCOUVER METROPOLITAN AREA**
**BY MUNICIPALITY, 1921-1956**

<table>
<thead>
<tr>
<th></th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
<th>1951</th>
<th>1956</th>
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<tr>
<td><strong>TOTAL, METROPOLITAN AREA</strong> xx</td>
<td>221.6</td>
<td>336.1</td>
<td>392.9</td>
<td>560.4</td>
<td>663.6</td>
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<td><strong>Urban Centres:</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Vancouver</td>
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<td>246.6</td>
<td>275.4</td>
<td>344.8</td>
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<td>22.0</td>
<td>28.6</td>
<td>31.7</td>
</tr>
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<td>8.9</td>
<td>15.7</td>
<td>20.0</td>
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<td>Burnaby</td>
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<td>North Vancouver (District)</td>
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<td>26.3</td>
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<td>3.2</td>
<td>4.6</td>
</tr>
<tr>
<td>Coquitlam (District)</td>
<td>2.4</td>
<td>4.9</td>
<td>7.9</td>
<td>15.7</td>
<td>20.8</td>
</tr>
<tr>
<td>Fraser Mills</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>University Endowment Lands</td>
<td>-</td>
<td>-</td>
<td>0.6</td>
<td>2.1</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>D.L. 172</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban Centres as % of met. area</td>
<td>83%</td>
<td>81%</td>
<td>78%</td>
<td>69%</td>
<td>63%</td>
</tr>
</tbody>
</table>

x According to 1956 Census definition of Vancouver Metropolitan Area
xx Includes incorporated areas, D.L. 172, and U.E.L. only; does not include other unorganized areas and Indian Reserves.


Source: Jobs, People, and Transportation, following p. 27.
reports usually warn the reader that this figure or boundaries shown for the metropolitan region are not to be thought of as being rigid because such is not the case.

In evolving the complete analysis it is necessary to ascertain the present development pattern, its resultant land uses and population distribution. The Vancouver Metropolitan area's pattern of development has arisen primarily because of the inter-action of the residential population and the physical attributes of the Lower Mainland. The actual pattern has clearly been affected by the geographic setting which has acted as a physical framework to which man must adjust his living habits. The physical nature of the Lower Mainland has created in reality a continuous unit contained by the mountains on the north, the sea on the west and the American border on the south. The usable land described generally as flat to gently rolling land may be quite logically subdivided into four distinct topographic sub-areas: the North Shore (about 99 square miles); Buttard Peninsula (about 148 square miles); the Delta Lands (about 237 square miles; and the Fraser Valley (about 1,110 square miles).\(^4\) Table 6 indicates the percentage break-down of the metropolitan region by sub-areas.

Still relative to the physical environment is the distribution of the basic soil types within the region. The alluvial soils, one of the two basic soil types present, are usually considered as the most suitable for agriculture. Recent surveys indicate that over one-third of the first class soils (114 square miles) are located within the municipalities of Surrey, Richmond and Delta. Here, we will see later is where the greatest danger of sprawl
<table>
<thead>
<tr>
<th>Municipality</th>
<th>1956 Population (in 000's)</th>
<th>% of TOTAL L.M.R.</th>
<th>% of TOTAL M.A.</th>
<th>% of TOTAL DIV.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL, LOWER MAINLAND REGION</td>
<td>749.8</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>METROPOLITAN AREA</td>
<td>665.1</td>
<td>88.8</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Burrard Peninsula</td>
<td>515.4</td>
<td>77.4</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Vancouver City</td>
<td>365.8</td>
<td></td>
<td>71.1</td>
<td></td>
</tr>
<tr>
<td>New Westminster</td>
<td>31.7</td>
<td></td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>Burnaby</td>
<td>83.7</td>
<td></td>
<td>16.3</td>
<td></td>
</tr>
<tr>
<td>Coquitlam District</td>
<td>20.8</td>
<td></td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Port Coquitlam</td>
<td>4.6</td>
<td></td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Port Moody</td>
<td>2.7</td>
<td></td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Fraser Mills</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University Endowment Lands</td>
<td>3.0</td>
<td></td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>D.L. 172</td>
<td>1.4</td>
<td></td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1.5</td>
<td></td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>North Shore:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Vancouver City</td>
<td>20.0</td>
<td>9.9</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>North Vancouver District</td>
<td>26.3</td>
<td></td>
<td>40.2</td>
<td></td>
</tr>
<tr>
<td>West Vancouver District</td>
<td>19.2</td>
<td></td>
<td>29.3</td>
<td></td>
</tr>
<tr>
<td>South of the Fraser</td>
<td>84.2</td>
<td>12.7</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Richmond</td>
<td>26.0</td>
<td></td>
<td>30.9</td>
<td></td>
</tr>
<tr>
<td>Delta</td>
<td>8.8</td>
<td></td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td>Surrey</td>
<td>49.4</td>
<td></td>
<td>58.8</td>
<td></td>
</tr>
<tr>
<td>REMAINDER LOWER MAINLAND</td>
<td>84.7</td>
<td>11.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

and scatteration with there resultant encroachment problem is evident.

The end-product of all these influences of physical geography has been a region with a set of special characteristics which has and will continue affect future growth. The climate is generally considered pleasant having created a very desirable place to live. The presence of the Fraser River has created a delta of extremely fertile soil as well as linearly orienting the region east and west. The land forms and the presence of the natural harbour facilities in Burrard Inlet have directed development to its present location along the harbour. Similarly, the location of the crossings of the two principal water bodies have affected the development of lands outside of the core area.

The present urban concentrations have followed this pattern being centered as already stated in the Burrard Peninsula. Within Vancouver, Burnaby and New Westminster are the principal downtown shopping and business facilities, transportation terminals and factories. Along the North Shore are some of the choicest building lots for the whole of the metropolitan area. To the south, and east in Richmond, Surrey and Delta the development tends to be more scattered and at a much lower density. These municipalities are Lower Mainland examples of what William Whyte so vividly describes in his report The Exploding Metropolis, whereby the fringe units are literally chopped up with urban subdivisions, the remaining large and small scale farming, small holdings and vacant land. Figure 5 indicates visually the different stages of urban growth the Vancouver Metropolitan Region has gone through since 1921 until 1951.
AREAS OF INSTITUTION OR PARK DEVELOPMENT

1921

1931

1941

1951

3 OR MORE PEOPLE PER ACRE

VANCOUVER METROPOLITAN AREA

URBAN GROWTH 1921-1951

SOURCE: JOBS, PEOPLE AND TRANSPORTATION P. PAGE 28

FIGURE 5
Viewing the region in retrospect we see a marked change occurring in the early 1950's when the surge of new population began to make itself felt in the metropolitan community. Urban population was practically extended continuously from the University Endowment Lands in the west of the Burrard Peninsula to the City of New Westminster; the North Shore area's residential development spread out practically across its whole expanse.

The 1956 Canada Census figures clearly showed the outward population movement into the metropolitan area. At this time most of the vacant land in Vancouver, North Vancouver City and New Westminster was filled in, Burnaby really grew into an urban municipality, approximately 83,000 population, and the North Shore municipalities experienced additional increases mainly by moving up the mountain sides. One of the most noticeable aspects of the outward expansion was the urban infiltration of the predominantly agricultural municipalities south of the Fraser River; Richmond, Delta and Surrey as well as growth as far east as Port Moody, Coquitlam and Port Coquitlam. See Figure 6 for a visual presentation of the urban growth up to the year 1956. This map clearly indicates the large amount of land that has been developed for urban uses out of the total "reserve" available.

The outcome of this population increase has been the creation of three distinct classifications of residential living: urban, suburban, and transitional. The urban areas tend to have the highest densities and highest level of services and are located usually close in to the older core area. The suburban areas, Burnaby, West Vancouver, and North Vancouver and parts of Surrey have been brought about to some extent by the auto. Their densities range
from about eight to thirteen persons per gross acre. The critical locale is that of the transition area where large tracts of landscape both agricultural and otherwise are being usurped by scattered subdivisions and speculative land holdings. The Lower Mainland Regional Planning Board considers sprawl areas as anything less than 3.5 persons per acre, in this case, a large part of the contiguous municipalities of Richmond, Delta, Surrey, and Coquitlam would fall into such a category. Table 7 gives density figures for every area but the transition municipalities.

From such an examination it is quite easy to see what is happening and furthermore what will happen in the future, especially with reference to open space and parks if such a trend continues. Even more disturbing are the population projections along with potential population distribution and land use which are forecasted for the future.

There has been a variety of different population projections used during the last several years in various reports pertaining to the Vancouver Metropolitan area. Possibly as reliable as any is the one that was calculated in the report compiled for the Metropolitan Joint Committee. Here, using two forecasts that had been made for B. C., one by the Dominion Bureau of Statistics and the other by the B. C. Research Council, an adjustment was carried out to bring the target dates to 1976. Once obtained the percent computation for the Vancouver Metropolitan area was applied leaving a result that ranged from a high of 1,320,000 to a low of 1,193,000 a compromise was established at 1,250,000 persons.
### TABLE 7

DEVELOPED URBAN RESIDENTIAL AREA, POPULATION AND RESIDENTIAL DENSITY BY SELECTED MUNICIPALITIES, VANCOUVER METROPOLITAN AREA, 1953

<table>
<thead>
<tr>
<th>Dev. Urban Residential Area</th>
<th>Population 1953 (est.)</th>
<th>Res. Density (Persons per gross acre of devel. land)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(in acres)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vancouver City</td>
<td>19,400</td>
<td>350,000</td>
</tr>
<tr>
<td>Burnaby</td>
<td>5,050</td>
<td>71,000</td>
</tr>
<tr>
<td>New Westminster</td>
<td>2,350</td>
<td>30,500</td>
</tr>
<tr>
<td>Coquitlam District</td>
<td>1,600</td>
<td>17,500</td>
</tr>
<tr>
<td>Port Coquitlam</td>
<td>400</td>
<td>4,000</td>
</tr>
<tr>
<td>Port Moody</td>
<td>200</td>
<td>2,300</td>
</tr>
<tr>
<td>University Endowment Lands</td>
<td>400</td>
<td>2,600</td>
</tr>
<tr>
<td>D.L. 172</td>
<td>120</td>
<td>1,500</td>
</tr>
</tbody>
</table>

**TOTAL Burrard Peninsula:**
- 29,520
- 499,400
- 16.9

**North Shore:**
- North Vancouver City: 1,051
- 17,800
- 16.9
- North Vancouver District: 1,676
- 19,560
- 11.6
- West Vancouver District: 1,885
- 16,100
- 8.6

**TOTAL North Shore:**
- 4,612
- 53,460
- 11.6

**Other Metropolitan Areas:**
- 70,140

**TOTAL Metropolitan:**
- 34,132
- 623,000

---


2. Graphical estimate.

3. Municipalities of Richmond, Surrey and Delta.

Source: *Jobs, People and Transportation*, following p. 72.
This study proceeds further to determine the amount of these people who will be living in the three urban centers of Vancouver, New Westminster, and North Vancouver City by 1976 and those who will be residing in the outside areas. From these projections an estimated 714,000 persons will be located in the various outlying municipalities and 536,000 persons will reside in the urban centers. See Table 8 for a more detailed outline of the division of the population. Thus, a phenomenally large increase in the population is expected to be outside the urban centers, in this regard, the report uses a figure of eighty percent of the anticipated increase by 1976 will need to be accommodated in the outlying municipalities.

The key to the whole evaluation lies in the actual location of these additional people throughout the metropolitan area. The location and the amount of land that will be utilized will have a decided impact on the physical shape and structure of the community. There are a number of directions possible and also a range of possibilities of distribution. The real problem is that some of the outlying areas are already overrun by scattered urban developments. If such an extreme tendency was continued the whole area could quite conceivably be covered with residential development without fully allowing for the anticipated growth. Further, valuable open spaces would be lost as well as productive agricultural lands and potential park sites. This extreme case is cited in the study, Jobs, People and Transportation, in which if three persons per residential acre was applied, approximately 155,000 additional residential acres would be required to house the estimated 466,000 people. Adding twenty percent - thirty percent for non-residential uses of
### TABLE 8

**POPULATION, 1956, AND ESTIMATED POPULATION, 1976, FOR URBAN CENTRES AND OTHER METROPOLITAN MUNICIPALITIES, VANCOUVER METROPOLITAN AREA**

<table>
<thead>
<tr>
<th>Urban Centre</th>
<th>POP. 1956 (2)</th>
<th>POP. 1976 (est.)</th>
<th>INCREASE 1956-1976</th>
<th>% INC.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>URBAN CENTRES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vancouver City</td>
<td>417,500</td>
<td>536,000</td>
<td>118,500</td>
<td>28.4</td>
</tr>
<tr>
<td>North Vancouver City</td>
<td>365,800</td>
<td>463,000 (3)</td>
<td>97,200</td>
<td>26.5</td>
</tr>
<tr>
<td>New Westminster</td>
<td>20,000</td>
<td>35,000 (3)</td>
<td>15,000</td>
<td>75.0</td>
</tr>
<tr>
<td><strong>OTHER METROPOLITAN MUNICIPALITIES (1)</strong></td>
<td>247,600</td>
<td>714,000</td>
<td>466,500</td>
<td>188.5</td>
</tr>
</tbody>
</table>

**TOTAL METROPOLITAN AREA**

<table>
<thead>
<tr>
<th></th>
<th>POP. 1956</th>
<th>POP. 1976 (4)</th>
<th>INCREASE</th>
<th>% INC.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>665,000</td>
<td>1,250,000</td>
<td>585,000</td>
<td>87.9</td>
</tr>
</tbody>
</table>

---

1. Cities of Port Moody and Port Coquitlam; District Municipalities of West Vancouver, North Vancouver, Burnaby, Coquitlam, Richmond, Surrey and Delta; and University Endowment Lands and Unorganized Areas.


4. Source: Chapter III, *Jobs, People and Transportation*

Source: *Jobs, People and Transportation*, following p. 75.
land, this would mean a total demand of from 186,000 - 201,000 acres by 1976 or more habitable land than is available.  

The real critical locations are the contiguous municipalities next to the urban concentrations, the North Shore, the eastern section of the Burrard Peninsula and the municipalities of Richmond, Delta and Surrey. How much residential building will be absorbed in each location will depend on the density of the housing developments. In the case of the North Shore there is a definite physical limit as house construction is pushed up the side of the mountains. There are many problems that have to be solved, the adverse weather, drainage, storm runoff and from a conservation viewpoint the destruction of natural timber areas and park sites. The Burrard Peninsula offers greater flexibility but again the question of density is of extreme importance. In addition, within this area are many valuable open spaces and park sites. The municipalities south of the Fraser River face the severest tests because of the ease of urbanization, i.e. lower land cost, freedom from clearing and accessibility to the core area. Another factor in the evaluation is the amount of valuable farm land that will be lost through indiscriminate and wasteful building. There are many favourable open spaces and potential park sites that would be lost to sprawl and land speculation.

There is potentially enough habitable land available for many land uses provided a sensible pattern of development is arrived at. Table 9 gives some idea of the estimated amount of habitable land available. At the moment there is a definite problem that if the real estate market is allowed to continue unchecked, valuable land will be forced into a more intensive use. The out-
TABLE 9

POPULATION, LAND AREA AND HABITABLE AREA BY MUNICIPALITY, VANCOUVER METROPOLITAN AREA, 1956

<table>
<thead>
<tr>
<th>MUNICIPALITY</th>
<th>POPULATION (1000's)</th>
<th>Land Area 3 (acres)</th>
<th>HABITABLE LAND AREA 6 (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL BURRARD PENINSULA:</td>
<td>514.5</td>
<td>99,560</td>
<td>64,400 - 74,455</td>
</tr>
<tr>
<td>Vancouver City</td>
<td>365.8</td>
<td>29,000</td>
<td>24,000</td>
</tr>
<tr>
<td>Burnaby</td>
<td>83.7</td>
<td>23,000</td>
<td>15,400 - 20,000</td>
</tr>
<tr>
<td>New Westminster</td>
<td>31.7</td>
<td>3,600</td>
<td>3,190 - 3,300</td>
</tr>
<tr>
<td>Coquitlam District</td>
<td>20.8</td>
<td>29,000</td>
<td>12,150 - 15,000</td>
</tr>
<tr>
<td>Fraser Mills</td>
<td>0.2</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Port Coquitlam</td>
<td>4.6</td>
<td>7,000</td>
<td>5,000 - 6,695</td>
</tr>
<tr>
<td>Port Moody</td>
<td>2.7</td>
<td>3,800</td>
<td>1,800 - 2,600</td>
</tr>
<tr>
<td>University Endowment Lands</td>
<td>3.0</td>
<td>3,600</td>
<td>2,300</td>
</tr>
<tr>
<td>D.L. 172 and Other</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Unorganized Territory</td>
<td>2.6</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>TOTAL NORTH SHORE:</td>
<td>65.5</td>
<td>64,300</td>
<td>11,950 - 30,200</td>
</tr>
<tr>
<td>North Vancouver City</td>
<td>20.0</td>
<td>3,300</td>
<td>2,470 - 3,280</td>
</tr>
<tr>
<td>North Vancouver District</td>
<td>26.3</td>
<td>39,000</td>
<td>6,595 - 12,000</td>
</tr>
<tr>
<td>West Vancouver District</td>
<td>19.2</td>
<td>22,000</td>
<td>2,885 - 14,920</td>
</tr>
<tr>
<td>TOTAL SOUTH OF FRASER RIVER:</td>
<td>84.2</td>
<td>148,400</td>
<td>125,000 - 128,000</td>
</tr>
<tr>
<td>Richmond</td>
<td>26.0</td>
<td>29,400(^5)</td>
<td>16,000 - 19,000</td>
</tr>
<tr>
<td>Delta</td>
<td>8.8</td>
<td>42,000(^5)</td>
<td>34,000</td>
</tr>
<tr>
<td>Surrey(^2)</td>
<td>49.4</td>
<td>77,000(^5)</td>
<td>75,000</td>
</tr>
<tr>
<td>INDIAN RESERVES:</td>
<td>0.9</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>TOTAL METROPOLITAN AREA</td>
<td>665.1</td>
<td>314,260</td>
<td>203,350 - 234,655</td>
</tr>
</tbody>
</table>

1. Canada Census - 1956; 2. including City of White Rock; 3. Source: Sewerage and Drainage in Greater Vancouver; 4. Only applies to D.L. 172; 5. Source: Technical Committee for Metropolitan Highway Planning, "Population, and Land Use Projection"; 6. 'Habitable area' is that which is suitable and available for urban development including that land already in use but not including major parks or public institutions. No general agreement exists as to the extent of habitable land in the Vancouver Metropolitan Area. These figures represent the range of estimates that have been made by metropolitan agencies: Lower Mainland Regional Planning Board; Sewerage and Drainage Board; and Highway Committee.

Source: Jobs, People and Transportation, following p. 70.
growth of such a procedure will be the elimination of many valuable open space sites within the metropolitan area, as well as potential natural open spaces, park sites and outdoor recreation area. Most of the agricultural lands will be priced into tracts of subdivisions deficient in every aspect of public services including sufficient park and open spaces. A scatteration of home building places a heavy financial load on each municipality to provide essential public services probably to the extent, that other less pressing services such as metropolitan park facilities will be "side-tracked". Yet the longer the delay in making adequate provisions for open spaces, and parks in the future the less chance there will be of preserving such locations. Once potential sites are lost there is little hope of retrieving them especially if the particular landscape consist of natural foliage and forests.

Some feel the answer is a compact residential growth of higher densities. To be sure, this solution has merit in allowing more people to live on less land. However, to propose such a plan on a disjointed separate municipality by municipality basis does not make sense. A master plan approach appears to be a better means of achieving an improved distribution of land uses on a comprehensive basis. To achieve such a broad concept we are really turning to the most logical answer: metropolitan government.

By way of a brief summary, it must be again emphasized that a serious problem is confronting the Vancouver Metropolitan Area; that of diminishing land reserves of all sorts. (See Figure 6 for visual description) Many suitable sites or potential park lands are being threatened or encroached upon by the expanding residential development. Not only are such occurrences happen-
ing in the contiguous municipalities of Delta, Surrey and Richmond, but also in the key central locations of Burnaby and the western part of Coquitlam. The park areas already in existence are insufficient to meet the total demand and as a consequence are being overused with a resultant decline in public recreation usefulness. See Appendix for discussion of this aspect by Eleanor Toren in *Metropolitan Parks*, Metropolitan Joint Committee. The prime example of such a case is Stanley Park that draws users from all parts of the metropolitan community. In certain locales, such as Surrey, reserves have been established but there is usually insufficient funds to bring the parks up to metropolitan standards. Of primary concern, also, is the fact that lacking overall direction a broader solution to the metropolitan park dilemma cannot be applied.

**Programme Application to Vancouver Metropolitan Area**

The most crucial aspect necessary to make the proposed programme a success is the introduction of some form of metropolitan government. Without this political framework any of the following proposals would be meaningless as well as being powerless on an all-encompassing basis, which is so necessary. The type of government that possibly should be or will be introduced is only a matter of conjecture. In any case, it is not the objective of this dissertation to discuss all the ramifications involved in different types of administrative organizations. The main concern is that a form of metropolitan government exists and that certain functions are carried out under its jurisdiction.

The key elements are the operating line departments that will play an
influential role in the development of the physical landscape. Thus, the critical needs are the establishment of a metropolitan planning department with authority to carry out the decisions laid down by the policy-makers, and a metropolitan park department with complete responsibility to acquire and develop metropolitan open spaces and parks. Another major principle is that the metropolitan administration must be given taxing and spending powers. The question of the role of land use planning and the parks department will be discussed in more detail in the pages to follow pertaining directly to the Vancouver situation.

Recently a proposal has gone forward which reasonably satisfies the above principles. The recommendations have been drafted by the "Metropolitan Joint Committee" whose terms of reference were to study the possibility and feasibility of establishing metropolitan government within the Vancouver Metropolitan Region. During the latter part of 1960 this committee presented to the Provincial Government a recommendation for the establishment of a form of metropolitan government administration. Included in this report was a list of functions that should be part of the overall organization. Land use planning and parks were two that were mentioned as being extremely important. However, the committee itself raised the question of financing, and it would appear that it too recognizes that the administrative reorganization alone isn't the total solution to the host of metropolitan problems. Within the framework of a comprehensive government there must be evolved a solution to this difficult problem of equitably distributing among the members the
financial burden of providing metropolitan public services. We must decide given an administrative change does this device solve the metropolitan park financial problem? Financially the administration will not be able to do the job that is necessary to provide the variety of outdoor recreation facilities that are required. This conclusion is based on past experience where prime attention is usually given to other pressing public services demands such as water, sewers, and roads to the virtual exclusion of other less demanding services of which parks would be one. If the needs of the citizens are to be fulfilled satisfactorily, then a new tack must be initiated, and it is here that we must develop a financial formula that will be economically feasible.

Before examining the revenue calculations in more detail it may be well to refer again to the importance that the assumed Metropolitan Planning Department will play in such a plan. In the first place this department would serve the critical function of co-ordinating all the public service demands and future community expectations into a well organized and comprehensive Master Plan for the Vancouver Metropolitan Area. Of course, the overriding factor will be the decisions of the policy-makers, the Metropolitan Council, in agreeing on the proposed future goals and objectives of the "metro" community. However, once all the operating department's programmes have been co-ordinated, the job of instituting an open space development plan will be made much easier especially when construed in relation to the Master Plan context.

Within the new level of government it is assumed a park department responsible for acquiring, administering and maintaining metropolitan parks would be established. The key tool is the financial ability to implement an open space development programme. It is here, that the proposal for sharing the gasoline tax with the Provincial Government would come into effect. Using this source of revenue, the relevant section of the park department will be able to initiate a comprehensive programme to ascertain the spending of these funds
in the best and most productive manner. Thus, by this method the most critical outdoor recreation needs could be met first and the others staged in an order of priority.

For illustration purposes it is proposed to examine the particular revenue figures that would be applicable to the Vancouver Metropolitan Region. It is not suggested that the approach that will be used should be adopted as the formula. In Chapter IV it was mentioned that several studies should be made to ascertain on a more mathematically sound basis and by a correct sampling procedure the proportion of the gasoline revenue that is applicable to the Vancouver Metropolitan Area and the percentage of this total paid in the area as tax that is actually generated by metropolitan citizens only. Thus, it is realized that a more sophisticated method is actually envisaged; however, the following figures as well as being quite reasonable will bring out in a meaningful way the main ideas of the plan.

The following data is taken from the Province of British Columbia Annual Public Accounts, referring specifically to the annual gasoline tax revenue for the period 1955 - 1960:

April 1, 1959 - March 31, 1960 $28,005,197.29
April 1, 1958 - March 31, 1959 26,735,723.00
April 1, 1957 - March 31, 1958 25,808,941.69
April 1, 1956 - March 31, 1957 24,067,015.19
April 1, 1955 - March 31, 1956 21,076,262.82

Source: Province of B.C., Department of Finance, Public Accounts.

One conclusion that can immediately be drawn from these figures is that the tax revenue is rising each year. Thus, when the amount is related to a growing population there will be some account made of this increase in the amount of money that is derived in the formula. As a means of breaking the total figure down, the percentage of metropolitan area population to total population of B. C. will be utilized. The study, Jobs, People and Transportation, indicates a percentage of 47.2% (for 1951) and 47.0% for 1956. If the
1956 figures are compared a logical relationship will be established even though the gasoline tax revenue data overlaps into March 31, 1957. Applying 47% to the figure of $24,067,000 we arrive at a result of approximately $11,311,500 which is applicable to the Vancouver Metropolitan Area. Not having any more accurate research material it will be necessary to estimate the percentage of the total gasoline consumed in the metropolis by its own inhabitants. A figure of 85% would appear to be reasonable, leaving the remaining 15% to be distributed amongst those people who live outside the region or are tourists. The net result will therefore amount to approximately $9,615,000 annually that is actually paid by metropolitan citizens as gasoline taxes.

The critical question is how much of this above net sum could be justified as being part of a park development programme. Again, merely for illustrative purposes, an analysis of per capita expenditure on all parks in the Greater Vancouver Area reveals some interesting statistics. These figures are taken from Eleanor Toren's analysis for the Joint Committee on Metropolitan Parks.

<table>
<thead>
<tr>
<th>Municipality</th>
<th>1951</th>
<th>1954</th>
<th>1957</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vancouver</td>
<td>$2.04</td>
<td>$2.76</td>
<td>$3.49</td>
</tr>
<tr>
<td>New Westminster</td>
<td>2.99</td>
<td>3.32</td>
<td>3.86</td>
</tr>
<tr>
<td>West Vancouver</td>
<td>2.07</td>
<td>3.44</td>
<td>2.82</td>
</tr>
<tr>
<td>Burnaby</td>
<td>.93</td>
<td>1.01</td>
<td>2.10</td>
</tr>
</tbody>
</table>

Source: E. Toren, Metropolitan Parks, A Report to the Metropolitan Joint Committee.

As expected, the two most highly concentrated urban areas have the highest expenditures per capita. What can be gained from this data is a general appraisal of the amount of money that is being spent on parks. It is assumed that the majority of this per capita expenditure is for the operation of local parks. It is further believed that the figures as shown indicate what the people in the area are prepared to pay for local park facilities. From this conclusion
it would seem legitimate to propose that an equal amount of per capita expenditure would be forthcoming for metropolitan parks. Thus, taking the mean of the three highest for 1957 we arrive at a figure of $3.39 per capita and equating this expenditure against the total metropolitan population of 665,000 the answer becomes $2,254,600.

From this analysis it can be seen that the metropolitan park per capita grant would amount to approximately twenty percent of the total gasoline tax revenue applicable to the area. This amount would seem to be a logical and reasonable sum of money. The result of $2,254,000 would be considered as the minimum annual per capita grant from the Provincial Government to the Vancouver Metropolitan Park Department. There could also be additional clauses entered in the agreement which would allow for bonuses depending on the particular circumstances. These further payments would add to the revenue available for park and open space development. In a sense, the plan would leave open to the local and metropolitan governments the initiative to go beyond the agreed upon minimum based on the formula.

As a further means of clarification an attempt will be made to utilize the data that have already been suggested by other reports. In this manner, the reader will be able to judge the significance of the amount of money that has been developed by the formula. Again, it must be qualified that such cases are used only for illustration because the programme as proposed would require a detailed physical survey and comprehensive analysis of outdoor recreation user's demands and needs.

In the Lower Mainland Planning Board's report, to develop Burnaby
Lake alone would cost approximately $1,100,000 and a great deal of this land is already owned by the municipality; Burnaby Mountain, another site municipally owned would require $166,000 to develop; Semiahmoo Indian Reserve needs in total about $300,000 to make the land suitable for outdoor recreation use. See the appendix which evaluates the various reports dealing with the Vancouver Metropolitan Area park problems. In each case these are locations where very little expense is required in purchasing suitable land from private landowners. One could well imagine the higher costs involved if this type of acquisition was necessary. The Lower Mainland Planning Board utilizing the proposed park sites estimates that a small scale programme would cost almost $1,000,000 for five years. However, such park development would barely begin to fulfill the needs of the metropolitan community.

In light of these cost estimates the revenue figures, derived from the approach suggested earlier, appear to be realistic in making available to the park department sufficient funds to carry out a vigorous park and open space acquisition programme. Not only would the securement of land for public ownership be possible but the particular locations could be intensively developed and maintained in a safe, efficient and proper manner.

Some people may argue that such a proposal is almost identical to an outright grant from the Provincial Government. They would quarrel with the application of gasoline tax revenue being channelled into a fund for open space and park development. These issues have already been raised and answered with the possible exception of the question pertaining to grants. In a way, the plan may be similar to a grant but it is more than just a payment of funds
from a higher level of government because the metropolitan government should share in the gasoline revenue. What better use could be made of this revenue than the programme as outlined? Further, there are many cases to substantiate such joint sharing of revenue; for example, in Great Britain some of the financial problems facing the metropolitan communities have been avoided through the part played by the National Government. Eleanor Toren, in the report entitled *Resume of Field Investigation* for the Metropolitan Joint Committee gives examples of these grants; for instance, there are general grants (these have replaced grants for specific services) which vary depending on such factors as size, distribution of population and number of school children in the community; percentage grants for police and highway services; unit grants for housing; and rate deficiency grants to the general expenditure of the poorer local authorities proportionate to the extent of their deficiency in tax rate.

Eric Hardy, the Director of the Bureau of Municipal Research Institute of Canada, in a paper given at the Eleventh Annual Conference of the Institute of Public Administration of Canada expressed the view that local governments are encountering sufficient difficulties in both current and capital financing to warrant reconsideration of the fundamentals of provincial-municipal relations. In most cases, incorporated municipalities are required to employ the real property tax as their principal and residual form of local revenue raising. Moreover, the provincial statutes prescribe how real property is to be assessed in order to form a suitable base for property taxes. In recent years local governments have contended, and in many in-
stances rightly so, that their available revenue sources were both inadequate and unsuitable. Several suggestions have been made to alleviate the inequalities between the provinces and the municipal governments; one proposed that certain functions be taken over by the province, another, that the province finance all of the costs of a particular service which is of wider than local concern, notably education and social services. Eric Hardy sums up the issue in stating that:

As I see it, local governments have the right to expect that they will remain responsible for a major share of public services, that they will be given access to public revenue sources sufficient to finance such services, and that they will retain a reasonable amount of choice and of freedom from interference in the conduct of their operations.  

From the contents of the previous paragraphs there would seem to be sufficient material on the subject to substantiate the proposition as outlined in this thesis.

In order to complete the total picture, reference must be made to the other facets of the programme that are so necessary to achieve the goals and objectives set out in the metropolitan community's master plan. In essence these elements will follow in quick succession once the tool of financial implementation has been created. Before the park and open space programme can begin to operate properly, the metropolitan park department would need to carry out a detailed physical survey of the Lower Mainland to obtain as much information as possible on both suitable and feasible park sites, outdoor recreation areas and natural open spaces. Once collected, this material would need to be closely examined and tabulated in such a way that it could be co-ordinated with later studies dealing with users' recreation needs and demands for the Greater Vancouver Region. In essence, the objective here
is to determine the supply side of the picture.

The other aspect of the "metro" community evaluation is a comprehensive survey of users' demands and needs for outdoor recreation. This analysis will prove extremely important in assessing the physical landscape that is available to meet such requirements. Thus, it is felt that an accurate and relevant sample of the population's recreational wishes and desires is necessary. It is presumed that a questionnaire type of form would be used to obtain the essential information, although other types of data collectors are possible. Once tabulated, this data would be scrutinized in order to determine the particular types of outdoor recreation facilities that are to be acquired. Accompanying this data would be an intensive examination of the population in order to determine the age distribution, sex, cultural background, education, and interests to name but a few of the pertinent characteristics. Taking the metropolitan area of Vancouver as a whole certain activities would necessitate closer study to ascertain their affect on land uses for recreation. These have already been covered in outlining the proposed plan in Chapter IV. Once this research material was completely evaluated and assessed the department would be able to derive a development programme to take care of this demand as well as meet the goals and objectives that had been set by the metro administration.

The financial implementation would be provided by the "development fund" leaving only an assessment of projects by staging each item in terms of an agreed upon priority list. At this point the suitable sites can be selected in terms of the most critical immediate demand, thus, if it turns out that
Burnaby Lake is an extremely important element, initially, the area can be developed to its fullest extent. Similarly with any other par site such as Munday Lake or Cypress Bowl if these are assessed to be of metropolitan significance and the user's recreation demand indicates a strong preference for this type of facility they should be developed early in the programme. This "fund" will allow the park agency to go even further in acquiring natural sites that are felt to be desirable for the general emotional and psychological well-being of the metropolitan community. This practice could be carried out in Burnaby, Surrey, Richmond, or Delta to serve a two-fold purpose of preserving open space and retaining the natural greenbelt in productive market gardens.

Associated with the purchasing of open spaces, park sites and outdoor recreation areas in fee simple would be several other key park planning principles. In the case of productive land in such areas as Burnaby, Surrey, Coquitlam, Delta, or Richmond it would be envisages that once this land was bought it would be leased out by the public body. Under this method the land would remain in productive use and also be retained on the tax rolls. In this way, also, the selected site would not remain vacant until the time when the land was taken up as a park or outdoor recreation area.

Once the plan was well established it might be possible to secure open space in particular areas, for example, Richmond, Delta and Surrey and by this practice continue to lease the land as a means of providing a greenbelt without any further thought of developing the leasehold for outdoor recreation. Under such a scheme a balance could begin to be achieved between the urban
and rural structure of the region. The land taxes would suffer only slightly from land classified as rural yet the community would retain its market gardens and farms as well as gaining precious open space.

The application of the easement method also bears mentioning when referring to the Vancouver Metropolitan Area. Easements are a worthwhile device in complementing the plan to purchase in fee simple the specific locations where certain property rights can be obtained. The guiding factor would be the "value" in the particular property and the cost of securing such easements. There may be a definite advantage in using this tool to preserve the green areas close in towards the Burrard Peninsula, for example, golf courses such as the Vancouver Golf and Country Club, Quilchena, Marine Drive and Point Grey. Again, in some of the present contiguous municipalities certain areas could possibly be selected as feasible locations for acquiring easements rather than purchasing in fee simple. The low cost of acquiring particular rights would be of prime concern along with preserving additional land for open space purpose. Once the rights were acquired the private owner for example, in Delta or Surrey would be entitled to have his property assessed as open land not as land suitable for subdivision and therefore taxed accordingly. In most instances, the easement phase of the programme would need to be closely co-ordinated with the taxation section of the local government in order to arrive at an equitable balanced tax assessment picture. If not, there might be a source of conflict because of reduced assessment on the tax rolls caused by such a policy.

It cannot be emphasized too strongly that easements under such a plan
would serve only to supplement the main technique that of purchasing open spaces, and park lands. Where the difference in cost was substantial and the particular properties were considered as part of an evolving greenbelt then easements would have some application. If property right's costs rose to almost an identical level to purchase expenditures then easements would not be utilized.

The importance of the taxation question cannot be overlooked when examining the applicability of this proposal to the Vancouver Metropolitan Region. In order to achieve a proper measure of success an equitable tax solution must be worked out both from the local government's aspect and that of the community. The primary fear that substantially lower tax revenue will result must be overcome. The means of successfully counteracting such a feeling from the financial element in local government is to convince them of the community value that will be gained as well as increasing the worth of surrounding properties. An improved land use structure in the metropolitan area will tend to help alleviate the wide discrepancies and inequitable taxation practices. One way this will occur is in creating a balance between urban and rural activities by means of a master plan. The discouragement of urban sprawl and scatteration and other population growth inefficiencies will help to relieve some of the public service burden on the taxpayers by making it cheaper to provide the necessary services. However, the real key will lie in a complete re-examination of the current tax assessment practices in order to more equitably fulfill all the duties of the new level of government.

In summary, the Vancouver Metropolitan Area is faced with a real chal-
lenge, one that will not wait for the passage of time to be solved. To obtain some sort of logical and efficient structuring within the community as well as being aesthetically satisfying the problems must be tackled today. The expansion of population outwards in a disorganized manner will not permit the approach to be otherwise.

The transition zones are the critical areas Delta, Surrey, Richmond and Coquitlam where the choice is already being made for the public by the real estate market. As previously mentioned if such inter-actions continue, by the latter part of the twentieth century, the whole Lower Mainland will be overcome by unplanned and unmanageable urban chaos. It is with these thought in mind that the proposed plan has been applied to the study area. First, establishing the need for a comprehensive form of government and secondly expounding on the necessity of adequate sources of funds to implement the open space, park and outdoor recreation programme. In all cases the approach has been somewhat superficial, in that actual dollars were not calculated, nor exact ratios derived, however, this has not been the objective of the thesis. Further, it has not been the intent of the author to select specific park sites, general open space areas nor determine the user's recreation demands these are beyond the scope of the thesis. The real purpose has been to bring out by a case study all the ramifications involved in establishing a complete programme within a new level of government and to show the actual situation as it exists.
REFERENCES

1 Lower Mainland Regional Planning Board, *Urban Sprawl, A Submission to the Committee of Enquiry into Residential Environment* of the Royal Architectural Institute of Canada.


3 Ibid., p. 6.

4 Ibid., p. 23.

5 Ibid., p. 28.

6 Ibid., p. 12.

7 Ibid., p. 75.

8 Ibid., p. 76.


10 Ibid., p. 19.
CONCLUSION

Only through the fortunate coincidence of history and geography has North America been able to make such gains in population, prosperity, and urbanization without until quite recently feeling a squeeze on open spaces. However, events have caught up with us, now we must pay the price of maturity, greater costs whether borne by the individual users or by all the taxpayers. Never again will it be so easy as it used to be to go outside and get away from it all. There is still a choice today, as to the type of metropolitan community we as citizens desire. The problem is that as time passes there is less and less chance of achieving a balanced urban setting containing all the natural elements so necessary to a better way-of-life. Time is certainly not on our side.

More than anyone else the average metropolitan citizen will have a marked influence in what the final outcome will be. If he or she is interested in the future well-being of the community the problems confronting the various metropolises are not insurmountable. Once the initiative has been generated it will be the task of those elected to carry out the wishes of the people. Here, too, there is a real need for enlightened leadership and foresight to accomplish the goals and objectives set forth. If harmonious co-operation and understanding is engendered between the local level of government and the next senior level an open space programme certainly has every chance of success.
It is within this setting that the plan for preserving and conserving open spaces, parks and outdoor recreation areas has been conceived in this study. In essence, the feeling has been that in all cases a further step is always needed to bring such plans into fruition. This step, really a technique of implementation is to make available to a comprehensive, responsible, public authority the necessary funds to draw up an adequate open space development programme. Under the proposal the costs will not be high, the taxation expense is already there, coupled with this factor is the savings to be made in establishing metropolitan government.

It might be added that nowhere in this thesis is it supposed that the programme suggested is an end-all in itself. It is not even part of the way there, but, if the outlined propositions do initiate further study and considerations as to better ways and means of developing the metropolitan region, with the inclusion of natural areas, it will have achieved a useful purpose. Most public-spirited people are aware of the situation as it exists but feel there is little that can be done as a corrective measure. Here, is where, all the negative notions have to be changed, in order to stimulate public interest and opinion.

The outcome is still very much in doubt, with the only favourable sign being the growing awareness that nature plays an influential role in the lives of mankind. If our urban civilization can reach the point where it can adjust the usage and management of the earth's remaining natural resources as well as keeping a balance with nature then there certainly is every opportunity for reaching a more stimulating and worthwhile urban way-of-life.
The purpose of this section is to outline the various studies and proposals that have been suggested as a means of providing a more adequate system of metropolitan parks in the Vancouver Metropolitan Region. Although much of this information may be of more historical significance than anything else it is important to set out what has been done in the past or has been suggested at the present time.

**Inter-Municipal Committee**

This report was prepared in 1954 by a committee made up of members from the affected municipalities of the Vancouver Metropolitan area. These people in the initial part of the report suggested that certain parks were acting as metropolitan parks and should be classified as such. These areas ranged from Hollyburn, Grouse and Seymour Mountains; Capilano, Stanley and Little Mountain (Queen Elizabeth) Parks; to the beaches at Kitsilano, Jericho, Spanish Banks, White Rock, Crescent and Boundary Bay. After this analysis the committee set out to consider certain areas that might be worthwhile investigating as suitable locations for metropolitan parks. The following list was suggested as possibilities: Central Park, Burnaby Lake, Burnaby Mountain, Coquitlam Plateau, Musqueam Indian Reserve, Capilano Cut-off, White
Rock beaches and the Semiahmoo Indian Reserve, Lighthouse Park, Burke Mountain, Cypress Bowl, Admiralty Point and Iona Island.\footnote{2}

It was further proposed that a Metropolitan Park Board should be formed whose function and scope would entail the acquisition of land for the development and administration of a system of large parks for the benefit of all the people in the metropolitan community. The report goes on to tentatively select the members of such a board, Burnaby, Coquitlam, New Westminster, North Vancouver City, North Vancouver District, Port Coquitlam, Port Moody, Richmond, Surrey, Vancouver and West Vancouver. It was concluded also that Delta might be added if this municipality contained any suitable park sites.

The costs of operating the board were very lightly discussed and tended to be somewhat elusive when more closely examined. In essence, the objective appeared to be the establishment of a flexible formula taking into account such factors as location, type of park and the population of the municipality at that time.\footnote{3}

To carry out the formation of the parks board it was suggested that the most desirable method would be under the authority of a special provincial act. This act would establish the status and powers of the board.

Probably, the most important contribution of the report is the several questions which were left to be answered by the public. Which areas were suitable for development as part of the metropolitan park system and how should such a programme be staged? Which municipalities should be members of the metropolitan board and what representation should they have? Finally
the need to ascertain the cost involved in developing and administering a system of parks as well as deciding on a formula for equitably sharing the expenses amongst the member municipalities.

Critically speaking, the committee's findings really sidesteps the whole issue by attempting to make do with what is there without disturbing any existing political structures. In proceeding to select potential sites and classifying present facilities without first deciding on the most suitable type of administrative agency seems inconceivable. It would appear more logical to begin by establishing the metropolitan agency, following this up by studying the physical area, its needs and goals and then making a decision about particular sites. Another weakness is the cost formula for financing such a scheme, on the surface the details are so vague it is almost impossible to ascertain the objective or feasibility behind the financial arrangement.

Lower Mainland Regional Planning Board

This report sets out in a more precise fashion the problems involved in obtaining metro parks and the needs that are presently not being met. One statistic that is quoted refers to a generally accepted standard of approximately one large park for every 40,000 people. In the case of Vancouver this figures works out to be twelve parks as compared to the seven which were designated presently as metropolitan. As in the inter-municipal committee's findings certain existing parks were classified as being metropolitan in scope. From this point, the board suggested park development in several other locales where such recreation facilities could best serve the immediate minimum needs. See Figure 7 for geographic locations. These sites were:
Semiahmoo Indian Reserve, Lighthouse Park, Central Park, Munday Lake Memorial Park, Burnaby Mountain and Burnaby Lake. Utilizing cost figures developed for it, the board calculated the cost of the initial development to be $400,000 or $80,000 per year for five years. Over and above these expenses would be an additional charge on the average of $100,000 for maintenance and administration. The suggested formula to be administered by a Metro Parks District could be a division of annual expenses on a per capita basis amongst the municipalities in the following proportions:

<table>
<thead>
<tr>
<th>MUNICIPALITY</th>
<th>TOTAL COST/YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnaby</td>
<td>$19,000</td>
</tr>
<tr>
<td>Coquitlam District</td>
<td>5,100</td>
</tr>
<tr>
<td>New Westminster</td>
<td>10,000</td>
</tr>
<tr>
<td>North Vancouver City</td>
<td>4,800</td>
</tr>
<tr>
<td>North Vancouver District</td>
<td>5,400</td>
</tr>
<tr>
<td>Port Coquitlam</td>
<td>1,100</td>
</tr>
<tr>
<td>Port Moody</td>
<td>800</td>
</tr>
<tr>
<td>Richmond</td>
<td>6,000</td>
</tr>
<tr>
<td>Surrey</td>
<td>11,400</td>
</tr>
<tr>
<td>Vancouver</td>
<td>112,000</td>
</tr>
<tr>
<td>West Vancouver</td>
<td>4,400</td>
</tr>
</tbody>
</table>

The study goes on to discuss each of the suggested park areas at greater length, referring to the total acreage, possible usage, problems involved in acquisition, and the initial expenditures required to bring the park into use. In most of these cases, the amount of money needed varies from very little to more substantial amounts, for example, on the Semiahmoo Indian Reserve to develop 314 acres, providing agreement can be reached with the Indians the initial cost would be $175,000 with a further expense of $125,000 later; Burnaby Mountain with a usable acreage of 550 acres requires a low initial cost of $11,000 but with higher subsequent costs of $150,000; Bur-
naby Lake, a potential key park of 760 acres (405 lake area), will cost approximately $1,100,000 to achieve its potential, of which $600,000 will be necessary for dredging. Both Munday Lake and Lighthouse Park could be developed, in the beginning, for a small sum of money, an estimate of $15,000 for Munday Lake to make available the most attractive section, and $35,000 for initial development of Lighthouse Park. Other possible sites are mentioned but were not given fuller treatment because these were not considered as critical as the aforementioned ones.

The report, although useful from the standpoint of bringing the facts before the people, showing the relative low costs that would be borne by each municipality, initially, and the recreational usefulness of each site; fails to attack the crux of the problem, a permanent administrative solution. It might be added, that probably the objective of the report was not to do so, but without such a proposal any such study would fall far short of its goal. The cost formula suggested appears again, as merely an approach to accomplish the best that is possible under the present situation of separate municipalities. One of the most valid criticisms of this financing method is that there is no account made for each municipality's ability to pay.

Metro Parks

This report is probably the most extensive appraisal of the Vancouver Metropolitan area with specific application to the park situation. It really gets down to the core of the problem of attempting to determine the most logical and feasible means of organizing the administering metropolitan parks.

In the initial sections several key factors are brought out that bear men-
tioning here; first, that if parks are not reserved now, they will be lost to other uses and secondly that parks are too often overlooked because such lands add little to the tax base of each municipality. A good point is made with reference to the economic value of park lands as natural areas decrease in number; those communities which contain good recreation facilities will be able to attract new citizens as well as prospective industries. 9

The author, Eleanor Toren, goes on to define "Metropolitan Parks" in a manner that is qualified by the fact that there are no hard and fast criteria, although usually size and usage appears to be the most meaningful. She refers to the opinion of most recreation authorities that a minimum acreage of 100 is desirable and that such an area should provide recreation and relaxation for the community as a whole. The definition is further qualified by adding that these parks are usually retained in their natural setting and thus their location is primarily determined by availability. 10 Once established, a variety of facilities are added, for example, picnic tables, zoos, riding and hiking trails and so forth.

In order to develop a general relationship between the Vancouver Metropolitan Area and other communities, a park standard was developed. It is important to note that the use of such a measurement guide was qualified by stating such use can be dangerous and inflexible in judging the adequacy of a facility because each community is unique. She feels that it doesn't mean that the establishment of comparison standards are useless but that too great a significance should not be attached to them. From the point of view of the report, the accepted standard of 10 acres per 1000 persons (including school
grounds) was applied. The developed standard arrived at for the metropolitan area as a whole in 1957 was 7.6 acres per 1000.\textsuperscript{11} When these figures are related to the projected population growth, in this case, that estimated by the Technical Report on Highways as of 1976, 1,241,000, the conclusion reached was that the population will almost double, therefore, park acreages should also increase twofold. Her deductions coincide closely with other studies which state that many of the large and least densely settled municipalities will experience the greatest portion of this population growth, and as a consequence, will be expected to provide the necessary park and recreation services of every kind.

As in the previous similar studies reference is made to those parks that are considered to be of metropolitan scope. These areas are conceded to provide a variety of recreation uses, although some are not as fully developed as others. One deduction from the park analysis is that most of these parks are experiencing an overcrowding, plus their location is a limited area within the region indicates a need for further park development. In examining the physical setting it was found that nearly all the existing parks were located on the North Shore or in the western half of the Burrard Peninsula. In the newer and faster growing municipalities, the eastern end of the Burrard Peninsula, and south of the Fraser River there was a general absence of metropolitan parks.\textsuperscript{12} Figure 7 indicates those sites which are considered as present and possible future metropolitan parks. As has already been mentioned the greatest danger is that many of the natural park areas will be destroyed by other land uses if some sort of government action is not
POSSIBLE METROPOLITAN PARK SYSTEM

EXISTING METROPOLITAN PARKS
POSSIBLE METROPOLITAN PARKS

SOURCE: METROPOLITAN PARKS, E.A. TOREK
taken.

The most important section of the report pertains to the suggested means and measures that can be applied to achieve the projected needs and goals of metropolitan parks. At the present time the governing and administrative bodies vary considerably, although the Municipal Act of 1958 eliminated the practice of electing parks boards. Under this act the municipal council may by by-law (support of two-thirds) appoint a parks or parks and recreation commission. Such a commission is granted total or partial powers relative to parks and park properties by the council who sets out as well the composition of the commission, and the governing procedures. The City of Vancouver is an exception, in which the Board of Parks and Recreation is nominated and elected separately, although many of the larger municipalities have maintained park commissions who were elected under the old Municipal Act.

An important consideration is that both the Municipal Act and the Vancouver Charter do contain provisions for joint management in the development of parks. Thus, municipal councils may enter into agreements to manage jointly property for park purposes. An additional prerogative, by by-law and the assent of both the owner electors and the Lieutenant-Governor in Council is the purchase or lease of property outside a municipality's boundaries.

The report touches on one key factor in assessing metropolitan parks, that of financing acquisition and development. As already mentioned, most park lands must be purchased or leased and developed with municipal funds.
However, each municipality's ability to spend large sums of money varies, because some do not have as adequate a tax base as others for drawing money to purchase parks. From the appraisal of potential park sites it would appear that eight of fourteen municipalities contain land suitable for park development, here, large sums of money will be required, the other six at the present do not contain adequate park space. The real question brought out is it equitable for some municipalities to spend large sums of money to provide metropolitan facilities that will be used by residents of the whole community?

The question of Provincial aid was discussed as a means of supporting the metropolitan park programme. Such a request was thought to be contrary to general policy where most of the senior level of government's activity was directed towards the construction of campsites and large wilderness parks completely away from the urban concentrations. The author felt that this approach was completely illogical to avoid spending money in an region where the demand was the greatest, and the need was at least of equal importance.

Another consideration put forth was a practice that has gained wide appeal in both Europe and United States the establishment of independent government bodies known as Special Park Districts. These have been set up in many communities that have faced the problem of developing a comprehensive park and recreation planning programme. The usual claim is that the ad hoc authority's singleness of purpose make an efficient acquisition and maintenance programme possible. The negative arguments, of real mag-
nitude, are the same as for other special districts; the independence from component municipalities coupled with a piecemeal attack on the problems of the government and the lack of overall administration and policy planning. Such things as independent budgets, unco-ordinated fiscal operations and duplication of staff may impose hardships in the development of the metropolitan community by overtaxing the total area's financial resources. There is always the innate fear of possible irresponsibility because there is no direct public control. In addition, the use of special districts creates another layer of government instead of working towards simplifying the nature of local government. Finally, the agency faces a reduced effectiveness by its own narrowness of approach to public service problems.

In the final aspect, this report touches on the application of metropolitan government to the particular area in question. It is suggested that the park's function falling within the jurisdiction of the metropolitan government along with several other metro government departments would solve some of the difficulties found with special districts. However, this is as far as the report proceeds, it does not develop an argument for comprehensive government nor does it discuss the advantages of such a body in acquiring revenue for public service purposes. Perhaps, this objective was not the purpose of the study, but if not then maybe it should have been. Each proposal appears to be a stop-gap measure to stem the tide for the present until something better can be developed. When the real explanation is the need for a comprehensive political structure that is capable financially of implementing the development plans that should be devised.
Further, it is difficult to visualize how a particular site selection programme can be undertaken until the total physical setting is carefully appraised and a thorough study made of the metropolitan user's recreation demands and needs. After co-ordinating these aspects with the goals and objectives of the community through a master plan, only then would it be possible for metropolitan parks to be allocated as part of the parks department's development plan. The above statements are not meant to be critical of the Lower Mainland Regional Planning Board's approach as it is realized the problems that were involved in carrying out the particular study.

The previous pages bring several difficulties to the forefront when dealing with the Vancouver Metropolitan Area. In the first place, the population statistics and habitable land data reveal a growing problem in available land to serve efficiently the various needs of all the different land uses. This is an urban pressure that is expanding at an increasing rate as development continues to sprawl out into the fring municipalities. Not only are these contiguous local governments suffering from population expansion but also from the associated heavy demands for public services. Suitable land is being wasted and squandered as rural countryside is speculated for gains in the real estate market. Yet, here is where much of the potential open space, park and recreation areas are located. Now, the present facilities are deficient, with the doubling of population the crises will be even worse. Locations such as Surrey, Richmond and Delta offer a wonderful opportunity for the preservation of open spaces and agricultural lands, as well as the retention of certain choice beaches and park sites. A similar
case may be made for Coquitlam, Burnaby and the North Shore Municipalities; indiscriminate residential building and waste will destroy forever some fine areas of natural setting, woodlands, streams, lakes and wildlife preserves.

The research material clearly indicates that urban pressures are present now on rural, and suburban lands as well as the treed-mountain slopes of the North Shore, pressures that will continue to build up and get more intense as time passes. None of the contiguous municipalities to the core city of Vancouver are free from these land use demands. As has been stated in the study Jobs, People and Transportation, if the market is left to run free, any type of residential structuring is likely to happen, and without a doubt it will be bad, for parks, for public services, for efficiency of land use, aesthetically and for many other reasons.

The second factor is that in a metropolitan community, made up of a group of separate municipalities, there is no chance of establishing overall park planning and administration. Each local government is almost entirely left on its own to develop the particular park sites felt necessary, even though some of these are of metropolitan significance. Certain municipalities have gone so far as to reserve sites within their own boundaries, however, in most cases the cost of extensive development is beyond the means of an individual municipality. The governing factor is that some of the most affected local governments do not have a sufficient tax base to draw out funds for park acquisition and development. Again, physically the choice natural sites do not necessarily fall within the richest municipality or the one most able to afford expenditures for additional park facilities. In many instances it will be the
least populated, most rural community that will contain the most suitable park lands and open spaces.

Even if we accept, temporarily, at least the selection of possible areas as outlined in several reports a very uneven geographic distribution will be found. Several municipalities do not contain any metropolitan park sites, their residents will, therefore, have to go outside the municipality's boundaries for certain outdoor recreational activities. As already stated, it is highly unfair for one municipality to spend large sums of money for the use of people outside the community who are not taxpayers. What is lacking? The power of implementation is non-existent both jurisdictionally and financially.

Here, is the crux of the matter that whether any recommendation is accepted or not if there is no comprehensive authority with broad powers there is little hope of achieving any of the well-founded goals and objectives needed to secure metropolitan parks and open space. Accompanying such a body will have to be the necessary means of either raising sufficient capital or being allocated adequate operating funds from the metropolitan organization. As proposed in Chapter IV it is felt that funds from the metropolitan government will not be enough to reach the minimum level established for open space and park requirements in the Vancouver Metropolitan Area.
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