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A Systems Approach to the Location of Golf Facilities: A Problem in Urban Recreation

Kenneth G. McCleary

Wilfrid Laurier University

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A SYSTEMS APPROACH TO THE LOCATION
OF GOLF FACILITIES: A PROBLEM IN URBAN RECREATION

KENNETH G. MCCLEARY
Department of Geography

Submitted in Partial Fulfillment of
the Requirements for the Degree
of Master of Arts

Graduate Council
Waterloo Lutheran University
Waterloo, Ontario
October, 1969
The major objective of this thesis is to develop a location model for golf facilities in Waterloo and Wellington counties. This is achieved by approaching the problem empirically within a systems framework. A description of the physical sites, the population, and the activity is presented, and then the demand for the activity is established by using two techniques: an income regression model, and a minimum population requirements model.

By combining the demand estimates with the distance parameters derived from a golfer questionnaire, a market potential surface map is established. This provides a basis for the analysis of interaction within the system. All the relevant location factors are then drawn together into a location model which is applied to three sites within the study region.

The thesis concludes by stressing the importance of open space and recreation facilities to the urban community and recommends immediate governmental action be taken to preserve existing golf courses, and to acquire land now for future recreational use.
ACKNOWLEDGEMENTS

I would like to express my appreciation to Waterloo Lutheran University for providing the opportunity to undertake graduate work in Geography. I wish also to thank all the members of the Department of Geography who contributed to the learning process. I am especially indebted to my mentor, George Priddle, and to Professors Herbert Whitney and Lorne Russwurm.

Fellow graduate students and several of my contemporaries contributed their ideas and encouragement, particularly Jim Wilgar, Carman Wilson, John Oakes, and R. Mohammed.

Special thanks go to my wife Lorian, whose enthusiasm, typing, editing, and prodding assisted me in the completion of this work.

Toronto, Ontario
October, 1969

K.G. McC.
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CHAPTER I

The Problem

A Introduction

The achievement of "quality of life" will be one of the most important, yet difficult, tasks confronting Canadians during the coming decades. As our life style changes from a rural to an urban orientation, there will be increased demands placed upon all our natural resources, particularly in urban-dominated regions. At this point in time, our utilization and understanding of resources in urban areas has been somewhat less than admirable. Urban sprawl, traffic congestion, water, soil, and air pollution, and a deficiency of suitably located recreational areas all indicate that management of the urban environment is not satisfactory.

The solution to the problem of control and use of environmental resources can be achieved through proper planning. The foremost purpose of this thesis is to contribute to planning methodology, and thus a model which will assist in properly locating golf facilities is developed.

Because of his fundamental concern for man and his relationship with the environment, the Geographer can make an important contribution to the proper planning of urban resources. In the keynote address to the 64th Annual Meeting of the American Association of Geographers, this view was stated by Pecora:
...the profession of Geography can make vital contributions toward solving critical national problems in the fields of land and resource use and toward relieving urban stresses. The Geographer can achieve this by explaining "man-land" relationships and by trying to optimize and make more efficient the use of resources.

In the field of resources, Geographers have been more traditionally concerned with natural resource commodities, natural resource hazards, and with man's use, perception, adjustment to and management of certain resources such as flood plains and river basins. Recently, Geographers are demonstrating a strong interest in environmental quality and the management of recreation resources. However, the emphasis has been on resource-oriented recreation areas which generally have some outstanding physical attribute, such as scenic attractions or unusual ecosystems, and where non-urban activities such as hunting, fishing, camping, and boating are commonly pursued. These areas are most often located at considerable distance from the user population.

Surprisingly, there has been a distinct lack of research by Geographers in the field of user-oriented recreation. A user-oriented park or recreation area is one which is characterized by its proximity to the public and a high intensity of use. Despite the fact that the processes of urbanization and industrialization have been the subjects of study for many Geographers, little is known about the geographical aspects of urban- and user-oriented recreation facilities. The need for research into this topic has been recently noted by Mitchell. He states that recreation research in Geography has lacked a research
focus and suggests "that emphasis be placed on urban recreation." Mitchell also points out that the entire study of recreation is still in its infancy and accordingly very little theory has been developed.

The location of golf courses as a Geographic problem falls well within the spectrum of urban recreation. To begin with, the activity of golf is increasing in popularity, with almost ten million golfers in the United States, 700,000 in Canada, and over 10,000 in Waterloo and Wellington counties alone. Secondly, the facilities consume large amounts of valuable urban land, usually within the cities themselves or within the rural-urban fringe. Because of the size of golf course developments, the land is often ideally suited to other more economically productive land uses such as industrial development, or more frequently, housing subdivisions and high rise apartment complexes. On the other hand, because of their well groomed fairways and attractive landscaping, they contribute substantially to the amenity of the urban landscape, as well as to the fundamentals of conservation.

Despite the increase in popularity and demand for the activity many golf courses are not being used to their full potential, while others are overcrowded. This disparity is largely a result of improper location procedures, particularly on the part of private entrepreneurs.

This thesis has several objectives: in order to encourage rational land use and resource planning, a location model will be developed including both site potential and site capability parameters. The development of a model with these parameters will be useful for urban and regional planners in that insight will be gained into "recreational activity systems" as suggested by Chapin. With an understanding of both sets of parameters, planners will be able to locate facilities in a more meaningful way, and this in turn will contribute to
the goal of optimizing the use of our recreation resources.

The model will also benefit private investors because of its simplicity and its applicability to Waterloo and Wellington counties. It is the author's contention that many privately owned recreation areas are developed without adequate knowledge (bounded rationality\(^\text{13}\)) of many important locational factors. This results in poor quality facilities not only from the users' standpoint but also from the investor's standpoint.

It is hoped that this study will contribute to the field of recreation Geography and specifically to urban recreation. Before a useful body of theory can evolve it is necessary for a large number of empirical studies to be conducted. When this is achieved a more thorough understanding of the complex urban environment will result.

B Conceptual Approach

To understand the underlying parameters needed to develop the location model a "systems approach" is taken. Most simply defined, a system is "a set of interrelated elements"\(^\text{14}\) and a systems analysis is "the formal analysis of a set of interrelated elements."\(^\text{15}\) In Geographic terms (or spatial terms) a spatial system is defined as "a system in which one or more functionally important variables is spatial."\(^\text{16}\) Spatial variables may include such dimensions as location, distance, direction, extent and morphology.

McDaniel and Hurst have observed "systems" to be a useful concept for Geographic research:

"...it is the realization that although each part of a system may play an individual role in the operation of that system, no part is entirely independent of the others, and that a change in
form or operation of one part will have significant effects on the operation of other parts. A systems approach therefore means consideration of a complex whole.... A system is not merely a totality of parts but rather a totality of relations amongst and including those parts.\textsuperscript{17}

Ackerman has also stressed that the world is composed of a number of subsystems which assist in identifying a hierarchy of research problems, leading ultimately to an understanding of the entire "earth-wide man-environmental system."\textsuperscript{18}

This type of conceptual framework is easily adapted to the study of recreation problems. The component elements in a recreation system, as suggested by Perloff and Wingo, are the facility, the activity and the population.\textsuperscript{19} For the particular recreation system under consideration for this study, the components are the golf courses, the golfers, and the activity itself.

Several current studies\textsuperscript{20} in recreation have employed the systems approach to recreation problems in Ontario. Examples are Lewis' work on the location of ski resorts, Safrance's study on the location of swimming pools, Wilson's work concerning open space and legislation, and Wilgar's research concerning rural land potential and capability for recreation.

\section*{Study Area}

The two counties of Waterloo and Wellington in the Midwestern Ontario Development Area (MODA) comprise the study site. There are several reasons for the selection of these two counties. Because of the considerable field work involving personal contact with managers and participants, proximity to the area is a major consideration.
Secondly, Waterloo and Wellington counties have a highly urban population and are demonstrating rapid growth characteristics. According to the last complete census in 1961, the total population was 261,456 people. In Waterloo county 93.5% were non-farm, and in Wellington county 79.7% were non-farm. This represents 89.0% of the residents of the entire region.

Several large urban places are found within the two counties. The Kitchener-Waterloo-Bridgeport complex is the largest, with 59% of the urban population in Waterloo county. Galt, also in Waterloo county, comprises 16.8% of the county's urban populace. Guelph and Fergus are the only two urban centres of over 3,000 persons in Wellington county. They account for 59.0% and 5.0% respectively of the urban population of Wellington county.

**FIGURE 1**

**POPULATION DISTRIBUTION, WATERLOO AND WELLINGTON COUNTIES, 1961**

<table>
<thead>
<tr>
<th>County</th>
<th>Total Population</th>
<th>Rural Non-Farm</th>
<th>Urban Non-Farm</th>
<th>Total Rural Non-Farm and Urban</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo</td>
<td>176,754</td>
<td>17,249</td>
<td>147,983</td>
<td>165,232</td>
<td>93.5%</td>
</tr>
<tr>
<td>Wellington</td>
<td>84,702</td>
<td>12,407</td>
<td>55,097</td>
<td>67,504</td>
<td>79.7%</td>
</tr>
<tr>
<td>Study Area:</td>
<td>261,456</td>
<td>29,656</td>
<td>203,080</td>
<td>232,736</td>
<td>89.0%</td>
</tr>
</tbody>
</table>

Source: Adapted from Midwestern Ontario Region Economic Survey, 1965.

The study site also demonstrates consistently high growth rates compared with the rest of the MODA region and with the rest of the province of Ontario. In Waterloo and South Wellington counties
LEGEND
--- county boundary
○ provincial highway
--- county highway
• centres
                   cities

WATERLOO AND WELLINGTON COUNTIES

5 0 5 10
miles
the population has increased 18.0% between the years 1956 and 1961 and 20.7% between 1961 and 1966. For a comparable period the province has increased 15.4% and 11.6% while the MODA region increased 12.5% and 14.2%. The average annual compound growth (by five year intervals) within Waterloo and south Wellington counties has averaged 3.8% per annum from 1961 to 1966, as compared to 2.6% for the MODA region.

The important reasons for this above average growth are related to its central place functions and its strong diversified economic base. According to an economic study recently completed, the study ...area exemplifies a well integrated economic base founded originally on the initiative of its early settlers and capitalizing subsequently on its proximity and accessibility to major markets in Southern Ontario and the availability of cheap hydroelectric power.

The projections for population growth indicate that the same general trends will continue into the future. According to the somewhat conservative estimates of the Department of Economics and Development, Waterloo county can expect to have a total population of at least 326,500 by 1981 and Wellington county 124,000. Most of this growth will occur in the cities of Kitchener-Waterloo, Guelph, and Galt.

In addition to the rapid urban growth, the two counties are selected because of the marked increase in the number and kind of golfing facilities which have developed in recent years. Particularly evident is the increase in privately owned courses available to the public. Even with this increase there is some overcrowding at several courses, especially at peak usage periods, and at the same time other courses appear to be suffering from lack of use. Because of this difference it is hoped that the study of these clubs will reveal the important factors relevant to an understanding of the success of these golfing facilities.
## FIGURE 2

**URBAN CENTRES OVER 3,000 POPULATION,**

**WATERLOO AND WELLINGTON COUNTIES, 1961**

<table>
<thead>
<tr>
<th>County</th>
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<th>Urban and Rural Non-Farm Population</th>
<th>Per Cent of Urban and Rural Non-Farm Population</th>
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<tr>
<td>Waterloo</td>
<td></td>
<td>165,232</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Kitchener Complex*</td>
<td>97,523</td>
<td>59.0</td>
</tr>
<tr>
<td></td>
<td>Galt</td>
<td>27,830</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td>Preston</td>
<td>11,577</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>Hespeler</td>
<td>4,519</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>Elmira</td>
<td>3,337</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td><strong>Total:</strong></td>
<td><strong>144,786</strong></td>
<td><strong>87.5</strong></td>
</tr>
<tr>
<td>Wellington</td>
<td></td>
<td>67,504</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Guelph</td>
<td>39,838</td>
<td>59.0</td>
</tr>
<tr>
<td></td>
<td>Fergus</td>
<td>3,831</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td><strong>Total:</strong></td>
<td><strong>43,699</strong></td>
<td><strong>64.7</strong></td>
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<td></td>
<td><strong>Total, Study Area:</strong></td>
<td><strong>188,455</strong></td>
<td><strong>81.0</strong></td>
</tr>
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*Includes Kitchener, Waterloo, and Bridgeport.

Source: Adapted from Midwestern Ontario Region Economic Survey, 1965.

Another consideration affecting the selection of the study area is that the urban recreation system appears to be relatively closed with only minimal interaction between other urban places such as Toronto, Hamilton, and London. By studying an urban recreation
system such as this one, relevant location factors become apparent which may be applicable to similar urban recreation systems, thus giving the study useful nomothetic implications.  

Finally, a certain amount of data is available for the two counties from planning agencies such as the Department of Treasury and Economics, the local planning authorities, and the two universities.

If we are to improve the quality of life in some measure, greater emphasis must be placed upon the proper use of natural environmental resources. To achieve this end, carefully delineated guidelines for the planning process are mandatory. A systems approach that conceptualizes planning problems as a complex of interconnections and interactions between man and the environment is an analytical tool permitting in depth perception.

Waterloo and Wellington counties are both experiencing rapid urbanization and population growth. Because of this, extreme pressure is being placed on the land and resources close to the cities of Guelph, Galt, and Kitchener-Waterloo. Unless dynamic planning procedures are implemented, an irrational and chaotic form of land use will arise. Developing a location model for golfing facilities will in a small way contribute to the proper allocation and use of the region's resources.
FOOTNOTES


8. Ibid.


15. Ibid., p. 81.
Ibid., p. 83.


Ibid.


CHAPTER II

Methodology

The conceptual framework for analysis in this thesis is a "systems approach." The golfing system is composed of three elements, the recreation facility, the 're-creating' population, and the activity. The use of this approach requires an understanding of not only the characteristics of each element in the system but also of the interconnections between them.

To establish the number of golfing facilities within the system, reference was made to the Ontario Golfing Association located in Toronto. The Association provided a list of all the member clubs in Ontario. According to their estimates, 98% of the clubs in the province are registered with them, thus a reliable estimate for the number of clubs in Waterloo and Wellington counties could be made. Secondly, because of the author's familiarity with the region, virtually all the clubs were known and thus contact was readily established with them concerning the study.

To obtain detailed information concerning the facilities and the golfer, a series of interviews were conducted with the managers of the golf courses. A questionnaire to assist in this process was devised (owner-operator questionnaire) which gleaned information concerning the physical resources of the sites, ownership, management practices, revenues and expenditures, the use of the facility by the golfers, and the owners' interpretation of the golfing system.

A second source of information concerning the facilities is
provided by the National Golf Foundation in Chicago. The information from the Foundation is useful in two ways. It provides a means of classifying the golf courses by ownership and it also provides statistics relevant to golf courses in the United States which are useful for comparison purposes. By using a standardized classification procedure suggested by the Foundation the nomothetic implications of this study are strengthened.

Because of the reluctance of many managers to release information concerning the financial status of their club, contact was also made with the municipal assessment authorities. The assessment commissioners and township clerks of Kitchener, Waterloo, Guelph, Nicholl and Woolwich townships provided some of the data concerning land and building values and taxation procedures which directly affect the clubs. This information is not complete because of its confidential nature, but there is sufficient to reveal some general relationships in terms of the capital investment required to operate a successful golf course.

It was immediately apparent after a visit to each club that there is considerable variance in the quality of the facilities and services provided. To a marked degree, the quality of the service is a function of capital investment, design, care in maintenance, and the general attitudes and concern demonstrated by management. Clawson and Knetsch suggest that investigation into the effects of quality on the participant would be a useful line of research:

It seems highly probable that design, maintenance, and other aspects of areas and facilities affect mental and emotional attitudes of users.

Before it is possible to gauge the interaction between the quality of the facility and the user, some sort of quality measurement is
necessary. More specifically, the problem is how do we measure the quality of the golf facilities as they vary from one course to another. A subjective measurement technique was developed to establish that there are differences between courses, and this was applied in the hope that quality differences could be identified.

The initial step in evolving such a measure involves compilation of a list of all extra facilities offered by the club, such as a dining room, snack bar, a licensed lounge, or curling rink. Each of these extra facilities was evaluated on a scale of 1, 2, or 3. A "poor" or low-quality extra facility obtained a score of 1; if it were of a comparatively high standard it received a 3 rating. (Two divisions received an automatic allocation of 1: the existence of club tournaments, and a club professional.)

The second consideration in establishing the quality measure was to evaluate the aesthetic appeal of the club. This included an assessment of such features as topography, the variety of trees and vegetation, the presence of attractive and strategically utilized water hazards, creeks and ponds, the conditioning of fairways and greens, and the architectural design of the course. Because of the diversity and extent of the characteristics evaluated, a maximum of ten points was allotted.

The final step in establishing the 'quality rating' of the course was to aggregate the total number of points allocated to each facility. By comparing the total aggregate score of each course, the overall comparative quality of each facility was secured. The results of this procedure are presented in Chapter III.

A second questionnaire was devised to obtain information con-
cerning the population component of the system. In any recreation system, the population acts as the powering force which affects the system's operation. With this in mind, one of the main objectives of the user questionnaire was to determine the socio-economic characteristics of the golfers in Waterloo and Wellington counties.

The information assembled is similar to the data collected by the Outdoor Recreation Resources Review Commission concerning participation rates, and socio-economic variables such as age, sex, educational achievement, and occupation. Information is also given with regard to outdoor recreational preferences of the golfers.

Data related to socio-economic variables is useful to the recreation planner particularly if the need to incorporate a behavioural input into the planning process is realized. By understanding the basic characteristics of the population the planner can ascertain what effect shifts in these variables have on the recreational system. He is then in a better position to assess recreational needs and can plan for them in a meaningful way.

The results of 257 golfer questionnaires conducted during the month of June 1968 are presented. This is an adequate representation of the estimated golfer population of 10,000 at a 95% confidence level. At all courses the user questionnaires were issued after the participants had played either nine or eighteen holes of golf. The questionnaire was generally well received by most golfers, as most of them were interested in discussing one of their preferred summer recreational activities. A stratified random sample was employed to ensure as wide as possible a cross-section of participants at each club. Thus only one participant from each foursome was selected for the completion of a questionnaire.
until a total of sixteen per course were interviewed.

For analytic purposes the socio-economic data supplied by the questionnaire is compared to the general results tabulated in the ORRRC and the 1965 Survey of Outdoor Recreation Activities prepared by the United States Department of the Interior. Where possible the data is compared to the structure of the whole population in an attempt to reveal the significant characteristics of the golfer population. Data for this purpose was found in the 1969-1972 MODA development report.

The socio-economic data was subjected to a series of simple regression analyses with the assistance of an IBM 360 computer to determine if there were any direct causal or associative factors affecting the total amount of participation in golf. The resultant coefficients of determination were not sufficiently high to be of predictive value but the result is comparable to the findings of the ORRRC, who suggest

...factors other than socio-economic characteristics are major determinants of outdoor recreational activity. Such things as time available, the goals and interests of the individual...the leisure time preferences of family members and friends, physiological factors, recreational experience in childhood, interest in competing activities and availability of facilities come to mind readily.

The results of these investigations are presented in Chapter III.

The demand for golf is established in Chapter III in the section dealing with the activity. In this segment an interpretation of the increase in recreation demand is given, combined with a review of the demand literature found in recreation Geography and resource management.

Essentially, there are two techniques which are used to establish the demand for golf in Waterloo and Wellington counties. The first technique employs an "income regression model" which computes the
number of people per golfer in each income group reported in the 1961 census. The second method (which acts as a check on the income regression model) is based on the number of people required to support each course, a technique developed by the Royal Canadian Golf Association. The demand for golf is compared to the actual supply of facilities and the discrepancy is demonstrated. The demand is then calculated for the year 1981 based on the population projections noted in Chapter I.

The interconnections and functioning of the golfing system are examined in Chapter IV. Most of the data used for this analysis is drawn from the owner-operator questionnaire and the user questionnaire. The latter provides insight into the golfer's reaction to the system by providing data concerning frequency of play; the price golfers are willing to pay for memberships, greens fees, and golf-related expenditures; distances they actually travel to play, and distances they are "willing to travel." The questionnaire also gives some information regarding municipal involvement in recreation.

The analysis proceeds from the concept developed in recreation Geography and resource management that participation in outdoor recreation declines with distance from the facility. Most of the literature related to this concept is found in the review of demand. To demonstrate that the inverse distance relationship applies to the golfing system, the total participation per season of each golfer is aggregated by distance bands. After plotting the data on three cycle log paper, with total participation aggregated in distance bands along the y axis and the distance bands plotted along the x axis, a linear regression analysis using the equation

\[ \log y = \log a - x \log b \]
shows the correlation and association between the two phenomena. (The
data forms a negative exponential curve.14)

To further demonstrate the inverse distance relationship,
another technique is to aggregate the total golfer participation in
per cent by the distance travelled. This type of analysis is done for
two sets of data: the distance actually travelled and the distance
willing to travel. Again the inverse relationship occurs.

Upon establishing the characteristics of the inverse distance/
participation relationship a method is derived to establish a site poten-
tial map.15 for a segment of the study region under isotropic conditions.16
The method combines the demand generated by each urban place over 3,000
people and the parameters indicated in the distance relationships. From
this map the potential percentage of the golfer participation that can be
expected at any site within the study region can be predicted. This is
defined as site potential in terms of the golfer population and does not
include the natural resource capabilities of the site. Resource capa-
bility and site potential are later integrated into the location model.

The next step in the analysis of interaction in the system is
to show the relationship between actual participation at the golf course
and the potential of its site. This is achieved by plotting the actual
number of pay-as-you-play rounds of golf (y axis) against the potential
of the site (x axis) which can be determined directly from the map. A
simple test of correlation reveals the association between the two sets
of data. The next phase of the analysis is to interpret the variation
of course use within the golfing system found in the two counties. This
analysis considers many of the interconnections which are not directly
quantifiable but still affect the total operation of the system.
The golfer questionnaire and the management questionnaire also provide data concerning location factors of golf courses. These are summarized and then a rank correlation between the two sets of factors as perceived by managers and users is conducted to show the interrelationships.

Following all of the above analytic procedures, the relevant location parameters are drawn together into a locational model. To demonstrate the practicality of this model, it is applied to three locations within the study area and the results are noted.
FOOTNOTES

1 National Golf Foundation, Statistical Tables (Chicago: 1968).


4 Ibid., p. 69.


6 Eva Mueller and G. Gurin, Participation In Outdoor Recreation: Factors Affecting Demand Among American Adults, p. 27.


9 Eva Mueller and G. Gurin, Participation In Outdoor Recreation: Factors Affecting Demand Among American Adults, p. 27.


11 James Gaquin, Executive Director of Royal Canadian Golf Association, private interview held in Toronto, November, 1968.


14 Ibid., p. 16.

15 Ibid., p. 25.
CHAPTER III

The Elements of the System

The purpose of this chapter is to describe and analyse the three components found within the golfing system. Section I deals primarily with the location, classification, quality and management of the facilities. Section II attempts to ascertain the characteristics of the golfer population and the third section establishes the demand for the activity at the present and in 1981.

SECTION I: THE FACILITIES

A Analysis of Golf Course Characteristics

i) Geographic Distribution

There are eighteen golf courses of all types located within the study region. Thirteen of these are in Waterloo county and the remaining five are found in Wellington. Two new courses are in the planning stage and will be located near the villages of New Dundee and Conestoga.

The majority of the courses are located either in the major urban areas or lie within ten miles of the nearest city or town, suggesting a strong urban demand orientation. The more rural parts of the counties are void of golf courses despite the fact that physical capability in many cases is excellent. Generally, the courses are found within the urban complex and environs surrounding the area known as the
"golden triangle" of Galt, Guelph, and Kitchener-Waterloo. Only three of the region's golf courses are located beyond this triangle.

ii) Course Classification

The courses were classified according to the system used by the National Golf Foundation, which recognizes seven distinct types of courses, according to ownership and management characteristics:

1. Private golf and country club
2. Semi-private municipal courses
3. Municipal courses
4. Military courses
5. School courses
6. Industrial courses
7. Public courses

Within the study area, only three of the seven classifications are found:

1. Private clubs
2. Semi-private clubs
3. Municipal courses

The private clubs are exclusive insofar as their facilities can be used only by members of the club or by guests sponsored by members. Ownership of the private clubs varies, but commonly the arrangement is that the members themselves are owners, each with a holding in the club's assets and liabilities gained by the purchasing of one or more shares in the club. Different ownership arrangements may occur; however, the sole objective is to provide a very high calibre facility to be used exclusively by members.

The semi-private club differs from the private club in that the course is open to the general public, offering pay-as-you-play
facilities as well as memberships. Usually the members do not purchase shares in the club but rather a single entrepreneur or business association owns and manages the club with the view of making a profit.

Municipal golf courses are owned and managed by municipalities, and commonly have both a membership and pay-as-you-play facilities. The distinction between the semi-private and the municipal clubs is that the municipality's major objective is not a profit motive but rather the provision of community recreation facilities.2

By classifying the courses according to the nature of ownership, a problem arises with reference to course length, as there is no allowance made for differences in total yardage. This often is a factor in the participant's choice of club or course preference. With respect to length, the most commonly found type of course in the study area (and for that matter, in the rest of the province) is the regulation length par four golf course.3 The 'par rating' is based on the length of the distance to be played from tee off point to the centre of the green. A regulation par four golf course for eighteen holes may vary in length from 4,518 to 7,200 yards. The literature available suggests that an average length is 6,500 yards, and a championship length course is 6,700 yards and more.4

A par three golf course varies in length between 1,000 and 2,700 yards for eighteen holes and the executive length courses are approximately 3,000 to 4,000 yards in length.

There are several different types of golf-related facilities. The driving range, for example, provides space for golfers to practice the skills demanded by the game, as well as catering to non-golfers as a form of amusement. They typically consist of ten to twenty acres of
land, provision for equipment rental, and tee off areas.

In addition, there are a growing number of miniature golf facilities. These provide golfers with an area to practice putting through a variety of traps and obstacles. They usually have eighteen holes, the length of which varies from fifteen to eighty feet.

The types and major characteristics of the facilities found in Waterloo and Wellington counties are illustrated in Fig. 3. There are a total of four actively functioning private country clubs, all of par four length. Westmount in Kitchener is considered to be of championship calibre. There are twelve semi-private clubs and two municipal clubs both operated by the Kitchener Golf Course Commission.

iii) Physical Resources of the Sites

The golf courses in the study region are located on sites of considerable physical variation. The following section provides a brief description of these situations:

(a) Size of the sites

The courses are located on sites ranging in size from 27 acres at the Fergus club to 280 acres at the recently developed Foxwood club. However, in many cases the whole site is not developed into a golf course but a part is left either as wood lot or as some other form of compatible land use. The Hilltop course, located near Erin, is situated on a site of 130 acres but only 70 of these are developed. The Foxwood club with 280 acres reports only 150 acres developed, with the rest of the property remaining in wood lot.

The amount of land used is generally greater at the more exclusive and older private country clubs. This type of course averages 8.9 acres per hole, as compared to semi-private courses which average
## FIGURE 3

### CLASSIFICATION OF GOLF CLUBS

<table>
<thead>
<tr>
<th>Type of Club</th>
<th>Par Rating</th>
<th>Number of Holes</th>
<th>Yardage</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private Country Clubs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutten</td>
<td>4</td>
<td>18</td>
<td>6,112</td>
<td>Guelph</td>
</tr>
<tr>
<td>Guelph</td>
<td>4</td>
<td>9</td>
<td>2,980</td>
<td>Guelph</td>
</tr>
<tr>
<td>Waterloo County</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>Preston</td>
</tr>
<tr>
<td>Westmount</td>
<td>4</td>
<td>21</td>
<td>6,666</td>
<td>Kitchener</td>
</tr>
<tr>
<td><strong>Semi-Private Clubs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brookfield</td>
<td>4</td>
<td>9</td>
<td>2,930</td>
<td>Waterloo Twp.</td>
</tr>
<tr>
<td>Eldale</td>
<td>4</td>
<td>9</td>
<td>3,020</td>
<td>Elmira</td>
</tr>
<tr>
<td>Fairview</td>
<td>4</td>
<td>18</td>
<td>6,105</td>
<td>Guelph</td>
</tr>
<tr>
<td>Fergus</td>
<td>4</td>
<td>9</td>
<td>2,800</td>
<td>Fergus</td>
</tr>
<tr>
<td>Foxwood</td>
<td>4</td>
<td>18</td>
<td>6,250</td>
<td>St. Agatha</td>
</tr>
<tr>
<td>Gala Glades</td>
<td>4</td>
<td>18</td>
<td>6,482</td>
<td>Galt</td>
</tr>
<tr>
<td>Grand River</td>
<td>4</td>
<td>9</td>
<td>2,710</td>
<td>Bridgeport</td>
</tr>
<tr>
<td>Hilltop</td>
<td>4</td>
<td>9</td>
<td>2,937</td>
<td>Erin</td>
</tr>
<tr>
<td>Merry Hill</td>
<td>3</td>
<td>18</td>
<td>3,126</td>
<td>Waterloo Twp.</td>
</tr>
<tr>
<td>Puslinch</td>
<td>4</td>
<td>18</td>
<td>5,651</td>
<td>Puslinch Twp.</td>
</tr>
<tr>
<td>Ranchlands</td>
<td>4</td>
<td>18</td>
<td>5,200</td>
<td>Waterloo Twp.</td>
</tr>
<tr>
<td>Victoria</td>
<td>3</td>
<td>18</td>
<td>4,200</td>
<td>Puslinch Twp.</td>
</tr>
<tr>
<td><strong>Municipal Courses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doon Valley</td>
<td>4</td>
<td>18</td>
<td>6,260</td>
<td>Doon</td>
</tr>
<tr>
<td>Rockway</td>
<td>4</td>
<td>18</td>
<td>5,620</td>
<td>Kitchener</td>
</tr>
</tbody>
</table>
LEGEND
- county boundary
- provincial highway
- county highway
- municipal
- private
- semi-private

GOLF COURSES IN WATERLOO AND WELLINGTON COUNTIES

map 3
<table>
<thead>
<tr>
<th>Course</th>
<th>Acreage</th>
<th>ARDA Soil Class</th>
<th>Soil Limitations</th>
<th>Sources of Water</th>
<th>Topography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutten</td>
<td>165</td>
<td>2&lt;sub&gt;s&lt;/sub&gt;</td>
<td>low permeability</td>
<td>Eramosa River, and city system</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>Guelph County</td>
<td>76</td>
<td>2&lt;sub&gt;s&lt;/sub&gt;</td>
<td>no apparent limitations</td>
<td>Speed River, and city system</td>
<td>slightly undulating to hilly</td>
</tr>
<tr>
<td>Westmount</td>
<td>180</td>
<td>2&lt;sub&gt;s&lt;/sub&gt;&lt;sup&gt;5/8,5&lt;/sup&gt;</td>
<td>low permeability</td>
<td>city system</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>Waterloo County</td>
<td>no data</td>
<td>2&lt;sub&gt;s&lt;/sub&gt;</td>
<td>low permeability</td>
<td>Grand River, and city system</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>Brookfield</td>
<td>70</td>
<td>2&lt;sub&gt;s&lt;/sub&gt;</td>
<td>high sand content, low permeability along creek</td>
<td>small creek</td>
<td>flood plain, flat</td>
</tr>
<tr>
<td>Eldale</td>
<td>140</td>
<td>1</td>
<td>no limitations</td>
<td>Canagaique Creek</td>
<td>slightly undulating to hilly</td>
</tr>
<tr>
<td>(70 developed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairview</td>
<td>115</td>
<td>2&lt;sub&gt;s&lt;/sub&gt;&lt;sup&gt;4/5&lt;/sup&gt;</td>
<td>poor drainage</td>
<td>ground water and small creek</td>
<td>slightly undulating to hilly</td>
</tr>
<tr>
<td>Fergus</td>
<td>27</td>
<td>1</td>
<td>gravel deposits</td>
<td>Grand River and ground water</td>
<td>flat</td>
</tr>
<tr>
<td>Foxwood</td>
<td>280</td>
<td>2&lt;sub&gt;s&lt;/sub&gt;&lt;sup&gt;5/3,5&lt;/sup&gt;</td>
<td>sandy sections, low fertility</td>
<td>small creek</td>
<td>slightly undulating to hilly</td>
</tr>
<tr>
<td>(150 developed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Width</td>
<td>Permeability</td>
<td>Fertility</td>
<td>Moisture Holding</td>
<td>Groundwater Sources</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------</td>
<td>--------------</td>
<td>-----------</td>
<td>------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Gala Glades</td>
<td>120</td>
<td>low permeability, low fertility</td>
<td>low moisture holding capacity</td>
<td>Galt Creek*, and Grand River, and city system</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>Grand River</td>
<td>54</td>
<td>low permeability in some sections</td>
<td>low fertility</td>
<td>Grand River, and city system</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>Hilltop</td>
<td>130</td>
<td>low permeability, low fertility</td>
<td>low fertility</td>
<td>Credit River, system</td>
<td>slightly undulating to hilly</td>
</tr>
<tr>
<td>Merry Hill</td>
<td>60</td>
<td>low permeability in one section</td>
<td></td>
<td>Hopewell Creek, and ground water</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>Puslinch</td>
<td>120</td>
<td>no evident soil limitations</td>
<td></td>
<td>ground water, and small creek</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>Ranchlands</td>
<td>90</td>
<td>sandy sections, low permeability</td>
<td></td>
<td>ground water, and small creek</td>
<td>flood plain, flat</td>
</tr>
<tr>
<td>Victoria</td>
<td>100</td>
<td>low permeability in some sections</td>
<td></td>
<td>ground water</td>
<td>slightly undulating</td>
</tr>
<tr>
<td>(70 developed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doon Valley</td>
<td>137</td>
<td>low moisture-holding capacity in some sections</td>
<td></td>
<td>ground water, and Grand River</td>
<td>flood plain, flat</td>
</tr>
<tr>
<td>Rockway</td>
<td>100</td>
<td>low permeability</td>
<td></td>
<td>Schneider's Creek, city system</td>
<td>slightly undulating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Inadequate water supply
6.5 acres per hole. The Merry Hill club, which is a par three course, averages only 3.3 acres per hole, illustrating the much smaller land requirements necessary for this type of golf course development.

The average developed acreage for nine hole courses is 62.2 acres whereas the eighteen hole courses average 127.7 acres of developed land. Considering the competition for land close to and within urban places, golf courses occupy a considerable amount of land. When the acreage for all golf courses within the study is aggregated, the total amount of land used is approximately 1,950 acres.

(b) Topographic Characteristics

The topographic characteristics of the sites are evaluated by a simple classification system.

FIGURE 5

<table>
<thead>
<tr>
<th>Classification</th>
<th>Number of Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood plain and flat</td>
<td>5</td>
</tr>
<tr>
<td>Slightly undulating</td>
<td>8</td>
</tr>
<tr>
<td>Slightly undulating to hilly</td>
<td>5</td>
</tr>
</tbody>
</table>

If the course is located on terrain such as a flood plain or is generally level it is classified as flat. If the topography is slightly rolling but not to the extent that the greens can not be seen from the tee off positions it is classified as slightly undulating. The topography of the site is classified as slightly undulating to hilly if there are major undulations and if at least three greens are not visible because of them.
Of the five courses that are classified as flat, three are located on flood plains. The best example of a flood plain site is the Doon Valley club, situated on the river flats of the Grand River near the Macdonald-Cartier Freeway (see Map 3). The majority of the courses have slightly undulating topography. Gala Glades and Westmount are typical examples of this classification. The other five courses are classes as slightly undulating to hilly as represented by the Foxwood club located in the Waterloo sand hills. The difficulty of precisely measuring the topographic characteristics of the site can best be appreciated by actual visual inspection.

(c) Soil and Drainage Characteristics

By plotting the golf courses on a soil capability for agriculture map, it was found that thirteen of the courses are located on soil classification II, and soils in this class

...have moderate limitations that restrict the range of crops or require moderate conservation practices. Most of these have the 's' limitation referring to low permeability, restricted rooting zone, low natural fertility, low moisture capacity or salinity. Two of the courses are located on class I soils that are

...deep, well to imperfectly drained, hole moisture well and in the virgin state were well supplied with plant nutrients. They can be managed and cropped without difficulty.

Two of the courses including Gala Glades in Wentworth county are located on class III soils which have

...moderately severe limitations that restrict the range of crops or require special conservation practices.

The map classifies soils of the region into eight groups with class I having the highest capability for agriculture, and classes VII and having the lowest.
Almost all of the courses have sections of low permeability with drainage posing some problem. Those located on flood plains experience the greatest difficulty because of poor drainage near the river bed. Hilltop, Ranchlands, and Brookfield have marshy or damp areas near their respective creeks and after a heavy rain storm these require several days to dry well enough for use. Brookfield and Ranchlands experienced severe flooding in the summer of 1967 which very much restricted the revenue taken in from greens fee players. Brookfield management estimates a loss of $7,000 because of the flooded conditions. In July 1968, flooding occurred again, this time because of breakage in a flood control dam, decommissioning three holes at Brookfield and two at Ranchlands.

(d) Water Resources

All of the courses in the study region are located on a river or a stream. The largest river, the Grand, supplies part or all of the water requirements for four courses (Doon Valley, Grand River, Fergus, and Waterloo County) while two of its major tributaries, the Speed and the Eramosa, contribute to the needs of the two private clubs in Guelph. (See Map 3.) Other sources of water for the courses are small creeks, ground water wells, and the existing municipal systems. Only two of the courses indicated inadequate water supplies (Fairview and Gala Glades) and both of these courses are largely dependent upon ground water. It is estimated that a capacity of 60,000 gallons per day is required for a nine hole golf course, to meet the needs in periods of prolonged drought.

iv) Evaluation of Golf Course Quality

As outlined in Chapter II (Methodology) it is evident that
## FIGURE 6

**FACILITIES IN CONJUNCTION WITH GOLF COURSES,**

**WATERLOO AND WELLINGTON COUNTIES, 1968**

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Snack Bar</th>
<th>Dinner Facilities</th>
<th>Licensed Lounge</th>
<th>Curling Rink</th>
<th>Driving Range</th>
<th>Practice Green</th>
<th>Pro Shop</th>
<th>Caddies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutten</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Guelph</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Waterloo County</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Westmount</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Semi-private</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brookfield</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
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<td>Doon Valley</td>
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<td>1</td>
<td>7</td>
<td>22</td>
<td></td>
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<td>6</td>
<td>19</td>
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</tr>
</tbody>
</table>

N/A = Data not available
there is considerable variance in the calibre of service provided at the clubs. All of the clubs provide snack bar facilities, but only two of them were considered to be outstanding in quality (Westmount and Cutten Club). Clubs such as Merry Hill and Brookfield offer only minimum service in this respect, providing dispensing machines and a small area for service (see Fig. 6).

The private clubs are also outstanding in the services provided by their pro shops. A full range of golfing equipment including wearing apparel and practice aids are available, as well as competent staff. The clubs which achieved a low rating in this category generally provided only a place to purchase greens fee tickets and very limited supplies. The outstanding facilities were housed in attractive buildings, and most of the low-rated courses provide only the simplest of structures.

As anticipated the private clubs exhibit the highest quality of the courses considered. Those which are being operated with a minimum of investment and reinvestment are poorly designed and managed, and reflect these faults strongly. An interesting observation is that the two municipal courses rank quite highly. This is consistent with the stated philosophy of the Kitchener Department of Parks and Recreation: to provide a high quality facility for as many people as possible at a reasonable cost. The municipal courses are a credit to the foresight of the Kitchener Golf Course Commission and they reflect good management practices in a number of ways.

B Management of Clubs

1) Capital Investment

Because of the high cost of urban land and course construction
costs, golf courses require considerable capital investment.

The two municipal courses illustrate the amount of capital needed. The Doon Valley club, acquired by the city of Kitchener in 1963, was purchased at a cost of $340,000, which was considerably below the initial asking price. The high cost of development is aptly illustrated by the following brief examination of the expenditures of the Rockway Municipal Club. Exclusive of site costs, the development of the course from 1935 to 1965 involved expenditures of $193,508.34. The present value of the golf course including land, buildings and business is estimated at $650,000 to $700,000.

FIGURE 7
CAPITAL EXPENDITURES, ROCKWAY MUNICIPAL GOLF COURSE

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction costs, 1935-36 (site excluded)</td>
<td>$79,862.40</td>
</tr>
<tr>
<td>Alterations, 1940</td>
<td>$8,724.41</td>
</tr>
<tr>
<td>Additions and renovations, 1951-64</td>
<td>$36,302.81</td>
</tr>
<tr>
<td>Additions and renovations, 1965</td>
<td>$68,925.21</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$193,814.83</strong></td>
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</table>

Data supplied by the assessment department of the city of Guelph gives further insight into the amount of capital investment required to develop a golf course. The assessment schedule for Guelph, based on 1965 "actual values," fairly represents the value of the courses concerned.

If the total assessed value is compared to the "quality evaluation" developed earlier, the influence of capital investment becomes evident. Of the three courses in Guelph, the one with the highest assessed value also has the highest quality rating, and the one with the lowest assessed value has the lowest quality rating.
FIGURE 8

ASSESSED VALUE OF GOLF COURSES, CITY OF GUELPH, 1965

<table>
<thead>
<tr>
<th>Golf Course</th>
<th>Acreage</th>
<th>Land Assessment</th>
<th>Building Assessment</th>
<th>Total Assessment</th>
</tr>
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<tbody>
<tr>
<td>Guelph</td>
<td>75</td>
<td>$94,100</td>
<td>$124,700</td>
<td>$218,800</td>
</tr>
<tr>
<td>Cutten</td>
<td>192.5</td>
<td>227,600</td>
<td>77,000</td>
<td>304,800</td>
</tr>
<tr>
<td>Fairview</td>
<td>100</td>
<td>73,500</td>
<td>21,300</td>
<td>96,300</td>
</tr>
</tbody>
</table>

Source: Correspondence with Assessment Commissioner, City of Guelph, June, 1968.

It is worth noting the assessment value of two of the courses which are at present experiencing financial difficulty, largely due to poor location and low levels of capital investment. The Fergus club, located in Nicholl township, is assessed $550 on the land and $1,800 on the buildings. The Eldale course, in Woolwich township, has a land assessment of $7,000 and building assessment of $1,500. Since assessment in part reflects the value of the property in terms of location, rental value, cost replacement of buildings and sale value, the Fergus and Eldale clubs are definitely not in a comparable position to the other clubs, and this is apparent when the use of the facility is reviewed.

In addition to the land and building costs, considerable expenditure of capital must be made for actual course construction. When a contract is let for construction on the ideal type of land, not including the cost of the land, a nine hole course with materials would range from $25,000 to $125,000 and an eighteen hole course would cost from $75,000 to $225,000. On land partially wooded, or presenting drainage problems or both, the cost of a nine hole course would be from $35,000 to $150,000 and for an eighteen hole course, from $100,000 to $275,000 and more. These costs vary...
widely depending on many variables such as size and quality of greens and tees, and type of irrigation system.

To place these costs in their proper perspective, it is estimated that the cost per hole for a new country club locating near Stratford, Ontario is $17,500, which amounts to $315,000 for developing an eighteen hole course. This price, according to the consultant, does not include the cost of the land nor the cost of the buildings, but only the construction of the course itself.

ii) Fees

To a large extent, the cost of the greens fees charged by the golf course reflects the quality of that course. The attractive, well managed municipal courses and the better semi-private courses usually charge $2.00 for greens fees during the weekdays and $3.50 on the weekend. Clubs with lower quality facilities charge less for greens fees, ranging from $1.50 on weekdays to $3.00 on the weekend.

Although the private clubs do not have greens fees available to the public, the quality of the courses is reflected in the fees charged for membership. Westmount is by far the most expensive club in the study area, charging $825 for a membership and requiring the member to purchase a share. The Guelph Country Club and the Cutten Club are much less, with fees of $275 and $170 respectively. The membership fees at the municipal and semi-private clubs range from $45 at Fergus to $100 at Doon Valley, Foxwood, and Gala Glades.

Membership fees are the most reliable source of income for most of the clubs. Westmount and Cutten's, the best courses in the region, enjoy the highest membership with over 700 members each. (See Fig. 9.)
### Summary of Greens Fees and Membership Fees for Golf Courses, Waterloo and Wellington Counties, 1968

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Greens Fees</th>
<th>Membership Fees</th>
<th>Initiation Fees</th>
<th>Number of Members</th>
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<tr>
<td>Private</td>
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<tr>
<td>Cutten</td>
<td>-</td>
<td>-</td>
<td>$170</td>
<td>760</td>
</tr>
<tr>
<td>Guelph</td>
<td>-</td>
<td>-</td>
<td>$175</td>
<td>400</td>
</tr>
<tr>
<td>Westmount</td>
<td>-</td>
<td>-</td>
<td>225</td>
<td>750</td>
</tr>
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<td>Waterloo County</td>
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<td>-</td>
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<tr>
<td>Brookfield</td>
<td>$2.00</td>
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<tr>
<td>Fairview</td>
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<td>3.50</td>
<td>70</td>
<td>150</td>
</tr>
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<td>60</td>
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<td>75</td>
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</table>

N/A = Not available  
N/C = No charge
iii) Tournaments

Most clubs encourage organized tournaments. However, there are conflicting views concerning the merits of providing such services. The private country clubs, Westmount and Guelph, sponsor only tournaments sanctioned by the Ontario Golfing Association or the Royal Canadian Golf Association, plus their regular club tournaments. They do not allow outside organizations to use the facilities. Basically, the view is that members pay substantial fees for the use of the private facility and that the use of it by outside organizations would be an infringement. The more pragmatic Cutten club considers outside sources as a valuable addition to income which may be used for providing other facilities for the club.

Municipal and semi-private clubs are very much in favour of organized tournaments. The pay-as-you-play revenue is not nearly at capacity in any of these courses during the week, and tournaments are encouraged to increase the facility's revenue-earning ability during this otherwise "slack" time.

Operators who object to tournaments feel that the risk of damage done to the course by tournament players negates the potentially greater revenue that would accrue. Often outside tournament players have little knowledge of the game or its etiquette, resulting in damage to greens and fairways as well as inconvenience to regular players. It is interesting to note that those operators who object most strenuously to tournaments do not have adequate dining or bar facilities to realize the fullest profit from outside activities.

iv) Course Expansion

Almost all of the clubs in the area are contemplating immediate
expansion or improvement of existing facilities. The most frequently mentioned improvement is construction of new club houses and pro shop facilities with provision for dining rooms and lounges. Most of the owners feel that this type of addition would put them in an excellent position to cater to conventions and business gatherings, thus according considerable extension of their operating season.

Clubs presently operating with only nine holes feel that expansion to eighteen holes is mandatory. A variety of problems confront the operators of nine hole courses; it is difficult to establish a regulating system to control the traffic flow of golfers beginning at the first tee and those starting on their second nine. At peak operating times during the weekend delays occur, detracting from the overall quality of the course. Another problem is that unless some adjustment is made for tee-off acres, there is little variety provided for the golfer. One of the most appealing aspects of the game is the wide range of shots the golfer is required to make in order to adapt to the constantly changing terrain and the different demands of each hole. The challenge is definitely limited unless alternate tees are provided.

Expansion to eighteen holes more than doubles the capacity of a club because of much greater user satisfaction, and also maintenance costs decline on a per hole basis.

The problem of expansion cannot be as readily solved in Canada as in the United States because of less immediately available capital. The federal government of the United States provides three major sources of capital. The Department of Agriculture makes loans available to farmers who want to put part of their land to uses other than farming. The Department would rather have a needed golf course or other recreation
facility than have the farmer producing surplus crops. The interest rate on these loans is usually 5% and is repayable in up to forty years.

Municipalities and local government bodies seeking to acquire "open space" for preservation from encroaching development may be eligible for federal aid from the Housing and Home Finance Administration for outright grants of up to thirty per cent of the land cost.22

The Small Business Administration, another federal agency, approves some loans to privately owned daily fee courses. The maximum loan is $350,000 and is repayable in a ten year period at an interest rate of 5 1/2%.

In Canada, the only government agency providing loans for the development of recreational facilities is the Industrial Development Bank.23 Apart from this source, money for course development must come from banks, mortgage companies, and other private sources which are often hesitant about making loans to recreational developments because of their seasonal nature.24 The Industrial Development Bank in 1967 allowed loans of over $1,500,000 to recreation services. About 13% of these loans go to recreation and tourist industries.25

Many of the managers suggested that ultimately they would like to develop a complete recreation complex where entire families could participate in some activity. A development such as this would include both summer and winter outdoor recreational facilities. The newly opened Victoria Golf Course in Puslinch township is planned with this intent.

v) Taxation

Many owners feel that taxes are becoming a serious management problem, particularly when a club is annexed into the corporate limits of cities. Usually the taxes are increased substantially compared to township rates, yet no real increase in services is provided. Two courses in
the Guelph part of the study area have been recently annexed into the city of Guelph from Puslinch township and the taxes on these courses have increased threefold. According to one of the assessment commissioners in the area, taxation for golf courses is based on the "lowest possible commercial rates," and if the club is managed well, it should experience little or no difficulty in facing the tax burden. Many of the owners felt that more consideration should be given to them because of the seasonal nature of the activity and because of their properties' contribution to the open space requirements of the city.

vi) Labour

A persistent problem in managing golf courses is securing suitably trained competent staff to assist in the maintenance and management of the course. Particularly hard pressed are courses offering dining and liquor lounge facilities. Greenskeepers are also in short supply because of the high wages paid by landscaping contractors, the major source of competition for this type of labour.

vii) Operational Costs

The attempt to stabilize rising costs is often cited as a problem by course managers. Although most owners did not have accurate figures to quote, they are concerned with maintenance costs that increase every year. The municipal courses, Doon Valley and Rockway, provide figures that illustrate the rising costs (see Appendix C). Expenditures are increasing most notably for salaries, insurance, and course maintenance.

Statistics published by the National Golf Foundation support the fact of rising costs. Course maintenance costs for fifty country clubs were 6.6% greater in 1966-67 than in 1965-66 and over the past ten years, expenses have increased 44%. (See Fig. 10)
RISE IN GOLF COURSE MAINTENANCE

YEARLY AVERAGE COST PER HOLE

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<td>$3,505</td>
<td>$3,639</td>
<td>$3,807</td>
<td>$4,060</td>
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<tr>
<td>All Other Expenses</td>
<td>$1,210</td>
<td>$1,262</td>
<td>$1,305</td>
<td>$1,361</td>
<td>$1,437</td>
<td>$1,482</td>
<td>$1,505</td>
<td>$1,582</td>
<td>$1,632</td>
<td>$1,687</td>
</tr>
<tr>
<td>Salaries and Wages</td>
<td>$1,608</td>
<td>$1,667</td>
<td>$1,727</td>
<td>$1,792</td>
<td>$1,864</td>
<td>$1,886</td>
<td>$1,923</td>
<td>$1,953</td>
<td>$1,974</td>
<td>$1,973</td>
</tr>
</tbody>
</table>

Source: N.G.F.
viii) Municipal Involvement

The questionnaire and subsequent interviews with the owner-operators reveal a difference of opinion on the issue of whether the municipalities should provide golfing facilities. Eleven of the operators feel that the municipality should take some role in the provision of facilities. Several owners consider that the initial cost of beginning a golf course is prohibitive and that the municipality should assist in the primary financing.

A few of the operators express strong objection to municipal participation. They deem private enterprise quite capable of providing recreational facilities such as golf courses, however they do agree that it is the role of the government to provide recreation facilities that are not in direct competition with them.

The managers of the two municipal courses agree in principle that golf courses are an integral part of the recreation system within the municipality, and the provision of them is equally important as providing other forms of recreation such as parks and swimming pools. They also believe that municipal courses, because of their high calibre, force the semi-private clubs to maintain high standards in order to compete successfully for their fair share of the golf market.

The municipality recognizes the importance of golf courses in another respect: they usually demonstrate a profit which can be utilized in providing other facilities. This point is further developed in view of the performance of municipal courses across the country. G. E. Robinson, a golf course architect and Director of the Green Section for the Royal Canadian Golf Association suggests:

Every municipal course in Canada is a financial success, and most are showing very substantial profits in addition to being a very fine asset
insofar as retaining our diminishing city
green belts.\textsuperscript{28}

It is also noteworthy that most recent statistics

\ldots indicate that a municipal course costing
$300,000 can be liquidated in eight to ten
years' time.\textsuperscript{29}

In a more recent study directly related to Kitchener, Dyson
compares the costs and benefits derived from Rockway Municipal Golf Course
to the costs and benefits derived by the city if the course were sold as a
housing subdivision. He concludes:

Within a short period of time the economic
gains made by the city would be spent in
meeting the cost of services.\textsuperscript{30}

Because of the valuable contribution municipal clubs make in
terms of the total recreation system, open space requirements, and contribu­
tions to financing of other recreation facilities it is surprising that
the cities of Guelph and Galt have not made use of the opportunity to
purchase courses when they have become available. High calibre clubs such
as Doon Valley and Rockway are a valuable asset to the local government
and to residents of the community.

\textbf{C Increase of Facilities as a Reflection of Demand}

The growing number of facilities indicates that golf is
becoming an increasingly important outdoor recreation activity for Cana­
dians and Americans. Some of the reasons why the facilities have increased
and the demand relationships are explored in Section III of this chapter.
Fairly accurate information is available for the growth of facilities in
the United States but in Canada there is little information concerning the
total number of golf courses. A Canada-wide inventory is currently being
completed by the RCGA but figures are not yet published. An estimate by
the Association reveals slightly over 1,000 courses at present.\textsuperscript{31}
10 YEAR TREND OF NEW GOLF COURSE CONSTRUCTION IN THE UNITED STATES

Source: N.G.F.
In the United States, data is available as far back as 1931 for all course types; \( \text{at that time, there was a total of 5,691 courses.} \)
The most recent statistics indicate that in 1967 there were 9,336 courses.

The data for all course types reveals some interesting relationships (see Fig. 12): there has been a general increase of 3.8% per year from 1950 to 1967, and the various types of courses experienced different growth rates. During the early 1950's, private courses actually decreased in number until 1957, when the decline reversed itself. This can be partially explained by municipal purchase of courses for the public in an attempt to provide additional recreation facilities. Another reason for the decline may be attributed to the unwillingness of people to pay the high fees for membership. To provide the necessary revenue for the clubs to operate, they were thus opened for public use.

After 1957, private courses regained popularity and are enjoying an increase in participation, as have all recreational facilities.

Semi-private clubs have demonstrated the strongest growth rate, at a 7.6% per annum average. Increase in growth from 1950-57 averaged 7% per annum, and after 1957 increased still further to 8% per year. Semi-private clubs attracted people from private clubs because of cheaper rates, and also because they were part of the general increase in demand for recreation facilities by all income groups. Furthermore, capital was made available through the federal government for the development of semi-private facilities, which encouraged the conversion of some rural farm land into recreational use.

Municipal courses have increased at 3% per year from 1950-1957. After 1957 the increase is slightly greater than 3%.

Though there is insufficient data to reveal the mathematical characteristics of the golf course growth rates in the study area,
### FIGURE 12

**INCREASE OF GOLF FACILITIES BY TYPE, U.S.A., 1950 - 1967**

<table>
<thead>
<tr>
<th>Year</th>
<th>Private Facilities</th>
<th>Per Cent Change</th>
<th>Semi-private Facilities</th>
<th>Per Cent Change</th>
<th>Municipal Facilities</th>
<th>Per Cent Change</th>
<th>Total Number of Courses</th>
<th>Per Cent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>4166</td>
<td>3.7 %</td>
<td>3960</td>
<td>13.7 %</td>
<td>1210</td>
<td>3.2 %</td>
<td>9336</td>
<td>7.7 %</td>
</tr>
<tr>
<td>1966</td>
<td>4016</td>
<td>3.3 %</td>
<td>3485</td>
<td>3.4</td>
<td>1173</td>
<td>9.8</td>
<td>8672</td>
<td>4.2</td>
</tr>
<tr>
<td>1965</td>
<td>3887</td>
<td>3.3</td>
<td>3368</td>
<td>8.1</td>
<td>1068</td>
<td>5.2</td>
<td>8323</td>
<td>5.2</td>
</tr>
<tr>
<td>1964</td>
<td>3764</td>
<td>4.1</td>
<td>3114</td>
<td>8.2</td>
<td>1015</td>
<td>2.1</td>
<td>7893</td>
<td>5.3</td>
</tr>
<tr>
<td>1963</td>
<td>3615</td>
<td>3.2</td>
<td>2868</td>
<td>8.8</td>
<td>994</td>
<td>6.8</td>
<td>7477</td>
<td>5.8</td>
</tr>
<tr>
<td>1962</td>
<td>3503</td>
<td>4.6</td>
<td>2636</td>
<td>11.6</td>
<td>931</td>
<td>2.1</td>
<td>7070</td>
<td>6.7</td>
</tr>
<tr>
<td>1961</td>
<td>3348</td>
<td>3.5</td>
<td>2363</td>
<td>4.8</td>
<td>912</td>
<td>1.9</td>
<td>6623</td>
<td>3.7</td>
</tr>
<tr>
<td>1960</td>
<td>3236</td>
<td>4.5</td>
<td>2254</td>
<td>11.4</td>
<td>895</td>
<td>2.8</td>
<td>6385</td>
<td>6.6</td>
</tr>
<tr>
<td>1959</td>
<td>3097</td>
<td>3.7</td>
<td>2023</td>
<td>6.3</td>
<td>871</td>
<td>1.9</td>
<td>5991</td>
<td>4.3</td>
</tr>
<tr>
<td>1958</td>
<td>2986</td>
<td>3.4</td>
<td>1904</td>
<td>3.7</td>
<td>855</td>
<td>2.5</td>
<td>5745</td>
<td>3.5</td>
</tr>
<tr>
<td>1957</td>
<td>2887</td>
<td>3.1</td>
<td>1832</td>
<td>8.3</td>
<td>834</td>
<td>-3.6</td>
<td>5553</td>
<td>3.6</td>
</tr>
<tr>
<td>1956</td>
<td>2801</td>
<td>-0.2</td>
<td>1692</td>
<td>10.3</td>
<td>865</td>
<td>-1.4</td>
<td>5358</td>
<td>2.7</td>
</tr>
<tr>
<td>1955</td>
<td>2807</td>
<td>-2.5</td>
<td>1534</td>
<td>10.2</td>
<td>877</td>
<td>8.8</td>
<td>5218</td>
<td>2.8</td>
</tr>
<tr>
<td>1954</td>
<td>2878</td>
<td>-3.1</td>
<td>1392</td>
<td>5.4</td>
<td>806</td>
<td>5.4</td>
<td>5076</td>
<td>0.4</td>
</tr>
<tr>
<td>1953</td>
<td>2970</td>
<td>-1.9</td>
<td>1321</td>
<td>6.0</td>
<td>765</td>
<td>1.9</td>
<td>5056</td>
<td>0.6</td>
</tr>
<tr>
<td>1952</td>
<td>3029</td>
<td>1.1</td>
<td>1216</td>
<td>2.6</td>
<td>751</td>
<td>-1.2</td>
<td>5026</td>
<td>1.1</td>
</tr>
<tr>
<td>1951</td>
<td>2996</td>
<td>-1.7</td>
<td>1214</td>
<td>6.5</td>
<td>760</td>
<td>2.6</td>
<td>4970</td>
<td>0.8</td>
</tr>
<tr>
<td>1950</td>
<td>3049</td>
<td>1141</td>
<td></td>
<td></td>
<td>741</td>
<td></td>
<td>4931</td>
<td></td>
</tr>
</tbody>
</table>

**Average:**
- Private Facilities: 2.1
- Semi-private Facilities: 7.6
- Municipal Facilities: 3.0
- Total Number of Courses: 3.8

**Source:** NGF
AVERAGE PERCENTAGE INCREASE OF GOLF FACILITIES AND GOLFERS

PARTICIPATION IN RECREATION

MUNICIPAL

SEMIPRIVATE

PRIVATE

Source: N.G.F.
VISITOR DAYS IN U.S. NAT'L PARKS COMPARED TO ROUNDS OF GOLF

VISITOR DAYS IN U.S. NAT'L PARKS

ROUNDS OF GOLF

NATIONAL PARKS

MILLIONS

1910 1920 1930 1940 1950 1960
FIGURE 15

YEAR OF DEVELOPMENT FOR GOLF COURSES,
WATERLOO AND WELLINGTON COUNTIES

<table>
<thead>
<tr>
<th>Year</th>
<th>Golf Course</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1908</td>
<td>Grand River*</td>
<td>Private</td>
</tr>
<tr>
<td>1912</td>
<td>Guelph Country Club</td>
<td>Private</td>
</tr>
<tr>
<td>1928</td>
<td>Cutten</td>
<td>Private</td>
</tr>
<tr>
<td>1930</td>
<td>Westmount</td>
<td>Private</td>
</tr>
<tr>
<td>1935</td>
<td>Fergus</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1936</td>
<td>Rockway</td>
<td>Municipal</td>
</tr>
<tr>
<td>N/A</td>
<td>Waterloo County</td>
<td>Private</td>
</tr>
<tr>
<td>1953</td>
<td>Ranchlands</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1955</td>
<td>St. Andrew's*</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1957</td>
<td>Fairview</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1958</td>
<td>Doon Valley</td>
<td>Private</td>
</tr>
<tr>
<td>1962</td>
<td>Hilltop</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1963</td>
<td>Gala Glades</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1963</td>
<td>Puslinch</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1964</td>
<td>Brookfield</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1964</td>
<td>Merry Hill</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1965</td>
<td>Eldale</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1967</td>
<td>Foxwood</td>
<td>Semi-private</td>
</tr>
<tr>
<td>1968</td>
<td>Victoria</td>
<td>Semi-private</td>
</tr>
</tbody>
</table>

*Grand River and St. Andrew's no longer operating (1969).

Source: Owner-operator questionnaire, 1968.
the same general trends appear. The first courses developed in the area were the private country clubs. These courses did not exhibit absolute decline as did the same type facilities in the United States, but the construction of semi-private facilities has replaced the growth of private clubs. This same phenomena occurred in the United States, and the reasons are similar. The real increase in construction of semi-private facilities in Waterloo-Wellington occurs in the mid-1950's, as was the case in the States. (See Fig. 15.) Within the last twelve years, eleven new golf courses have been established in the study area—almost twice as many courses as were developed between the years 1908 and 1952. Observation reveals much the same pattern occurring in other parts of the province (e.g. the Toronto and London regions).

D Conclusions

There are eighteen golf courses in the study area, classified as private, semi-private and municipal. The private clubs and the municipal clubs are of excellent calibre, reflecting good management and high levels of capital investment. The semi-private clubs are not of as consistently high calibre, but nevertheless play an important role in meeting the region's golf needs. The courses offer a wide range of services to the golfers, including liquor lounges, dining rooms, practice areas, and pro shops. The private and municipal courses offer the most comprehensive range of such services.

Because of the specialized nature of golf as a recreational activity, a distinctive set of resource characteristics are a prerequisite. Most of the courses are situated on slightly undulating, scenic topography, with acreage varying from 27 to 280 acres. Also characteristic of most of the courses studied are the small stands of coniferous and
deciduous trees, and well-drained, high quality sandy loams. Almost all the sites are capable of producing 120,000 gallons of water per day, commonly derived from rivers, although some courses rely on ground water or municipal supplies.

Most of the courses have immediate accessibility to a paved highway; only two are entered by gravel roads.

Golf course managers face a series of problems, and one of the most significant is the problem of peaking (considered at length in Section III of this chapter), followed closely by problems of maintenance and operational costs, shortage of skilled labour, and lack of capital for club expansion. The managers differ in their views concerning provision of tournament facilities, and municipal involvement in furnishing golf facilities.

Golf courses contribute to the open space requirements of Kitchener-Waterloo and Guelph, and provide both aesthetic appeal and needed "green belt" relief, in addition to maintaining the fundamentals of conservation.
SECTION II: GOLFER POPULATION

A Socio-Economic Characteristics

According to the National Golf Foundation, there are approximately 44 golfers per 1,000 members of the population. Using this standard, the total number of golfers for Waterloo and Wellington counties is 11,504, or 4.4%. Using the income regression model which establishes demand, the total number of golfers is 20,420, or 7.8% of the total population. The difference between the two estimates is not contradictory but rather one of definition. The National Golf Foundation defines a golfer as a person who plays at least fifteen or more times per season, and the income regression model defines a golfer as someone who participates one time per year.

The characteristics of the golfer population are described by comparing the information from the golfer questionnaire with the findings presented by the Outdoor Recreation Resources Review Commission, the 1965 Survey of Outdoor Recreation, and where possible to the general characteristics of the entire population in Waterloo and Wellington counties, as presented by the census.

The first factor to be considered is age. Most of the participants come from the age group of 18-44 years, constituting 60.8% of the golfers. This finding is generally consistent with the results presented in the 1965 Survey, which indicates this group is the most active in other activities such as swimming, where 57% of the participants fall into this category (see Fig. 18).

When compared to the age structure of the whole population, however, the percentage from this group is much higher than could be expected. Only 25% of the population is found within this age group.
Golfers in this category are not the most active in terms of average number of rounds of golf played per season. The players in the 12-17 category play an average of 64 rounds per season, and golfers in the category of 55-64 years average 43 rounds per season. Surprisingly, golfers 65 years and over play even more frequently - 45 rounds per year. Participants in the age group 35-44 years participate the least (29.2 times). These differences can largely be explained by the varying amounts of leisure time available to the golfers. The younger players usually have the summer vacation to play golf and the older participants are either retired or semi-retired. When questioned, the older golfers suggested that golf is one of their preferred summer activities, and much of their leisure time is spent at the country club. Golfers in the 35-44 category play less frequently because of the demands placed on their time by family and occupational concerns.

The ORRRC suggests that as age increases participation in activity generally declines. In the case of golf, the hypothesis does not follow closely. Golf is usually developed as a skill in later years while more rigorous activities such as swimming and other outdoor games are pursued by younger people.

Because of the close interrelationship between socio-economic variables, it is difficult to determine the actual effect of a single factor as it influences participation in outdoor recreation. For example, the ORRRC reports suggest that as educational achievement increases participation increases, with the exception of college graduates. The Commission also suggests that

...these education findings reflect in part age and income differences. Those of minimal education are also heavily represented in the
FIGURE 16

PER CENT OF POPULATION IN EACH AGE GROUP

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Waterloo County</th>
<th>Wellington County</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 14 (years)</td>
<td>32.4%</td>
<td>32.4%</td>
</tr>
<tr>
<td>15 - 24</td>
<td>13.6</td>
<td>13.6</td>
</tr>
<tr>
<td>25 - 34</td>
<td>14.3</td>
<td>12.6</td>
</tr>
<tr>
<td>35 - 44</td>
<td>13.8</td>
<td>12.5</td>
</tr>
<tr>
<td>45 - 64</td>
<td>18.1</td>
<td>19.0</td>
</tr>
<tr>
<td>65 and over</td>
<td>7.8</td>
<td>10.0</td>
</tr>
</tbody>
</table>


FIGURE 17

RELATIONSHIP BETWEEN PARTICIPATION IN GOLF AND AGE

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Average Rate of Play</th>
<th>Per Cent of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 - 17</td>
<td>64.3 (rounds per season)</td>
<td>2.3%</td>
</tr>
<tr>
<td>18 - 24</td>
<td>33.3</td>
<td>26.5</td>
</tr>
<tr>
<td>25 - 34</td>
<td>37.3</td>
<td>24.5</td>
</tr>
<tr>
<td>35 - 44</td>
<td>29.2</td>
<td>19.8</td>
</tr>
<tr>
<td>45 - 54</td>
<td>31.7</td>
<td>20.2</td>
</tr>
<tr>
<td>55 - 64</td>
<td>42.5</td>
<td>6.2</td>
</tr>
<tr>
<td>65 and over</td>
<td>45.0</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Golfer questionnaire, 1968.
## Figure 18

**Per cent of participants 12 years and over by age of participants**

*For selected activities, U.S. totals, 1965*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Swimming</th>
<th>Driving for Pleasure</th>
<th>Picnicking</th>
<th>Fishing</th>
<th>Boating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 - 17</td>
<td>27 %</td>
<td>16 %</td>
<td>18 %</td>
<td>22 %</td>
<td>24 %</td>
</tr>
<tr>
<td>18 - 24</td>
<td>20</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>25 - 44</td>
<td>37</td>
<td>35</td>
<td>38</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>45 - 64</td>
<td>15</td>
<td>24</td>
<td>21</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>65 and over</td>
<td>1</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

| Total       | 100 %    | 100 %                | 100 %      | 100 %   | 100 %   |

lower income groups which also rank low in recreation participation.

FIGURE 19

RELATIONSHIP BETWEEN EDUCATIONAL ACHIEVEMENT AND PARTICIPATION IN GOLF

<table>
<thead>
<tr>
<th>Education</th>
<th>Average Rate of Play (Rounds per Season)</th>
<th>Per Cent of Participants (%)</th>
<th>Per Cent of Population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade school</td>
<td>43.6</td>
<td>4.7</td>
<td>47.5</td>
</tr>
<tr>
<td>Some high school</td>
<td>39.0</td>
<td>28.4</td>
<td>30.8</td>
</tr>
<tr>
<td>High school, completed</td>
<td>34.3</td>
<td>35.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Some college</td>
<td>35.3</td>
<td>19.5</td>
<td>2.4</td>
</tr>
<tr>
<td>College completed</td>
<td>25.1</td>
<td>12.5</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Source: Golfer questionnaire, 1968.

The findings of the ORRRC apply in a general manner to the golfers in Waterloo and Wellington counties. There is not an apparent difference between the number of rounds of golf played and educational achievement until a college degree is attained. This category of golfer plays on the average only 25.1 rounds per season while all the other groups play over 34 rounds. However if participation in golf is approached in terms of the population structure, somewhat different results appear. Those who have achieved grade school education represent 47.5% of the entire population but only 4.7% of all the golfers come from this group. The effect of increased education can be more clearly seen if the group which completed high school is considered. Only 16.0% of the population has achieved this level, but 35% of golfers have attained this standard.


FIGURE 20

PER CENT OF PARTICIPANTS 25 YEARS AND OVER IN SELECTED ACTIVITIES
BY EDUCATIONAL ACHIEVEMENT, U.S. TOTALS, 1965

<table>
<thead>
<tr>
<th>Education</th>
<th>Swimming</th>
<th>Driving for Pleasure</th>
<th>Picnicking</th>
<th>Fishing</th>
<th>Boating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade school</td>
<td>14 %</td>
<td>25 %</td>
<td>23 %</td>
<td>27 %</td>
<td>17 %</td>
</tr>
<tr>
<td>High school (1 - 3 years)</td>
<td>17</td>
<td>17</td>
<td>19</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>High school (completed)</td>
<td>40</td>
<td>37</td>
<td>37</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>Some college</td>
<td>13</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>College degree</td>
<td>16</td>
<td>11</td>
<td>11</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 %</strong></td>
<td><strong>100 %</strong></td>
<td><strong>100 %</strong></td>
<td><strong>100 %</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Of special interest are the golfers who have completed college, since they represent 12.5% of golfers and only 2.8% of the total population. They do not play as frequently, but there is a high probability that they will play more than people who have attained less education. This may be partially explained by the fact that in many cases first contact is made with golf and other carry over sports within the high school and universities.

Occupational patterns of golfers indicate strong tendencies toward professional, managerial and service occupations rather than construction or manufacturing. The single largest group of golfers comes from the managers and officials category, who make up 26.9%. The professional group, and the sales, personnel, and clerical groups represent 21.5%

FIGURE 21
PERCENTAGE OF GOLFERS FROM OCCUPATIONAL CATEGORIES

<table>
<thead>
<tr>
<th>Occupational Classification</th>
<th>Percentage</th>
<th>Average Participation (Rounds per Season)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>21.5%</td>
<td>29.3</td>
</tr>
<tr>
<td>Managers and Officials</td>
<td>26.9%</td>
<td>34.5</td>
</tr>
<tr>
<td>Sales, Personnel, Clerical</td>
<td>19.4%</td>
<td>33.0</td>
</tr>
<tr>
<td>Craftsmen</td>
<td>12.4%</td>
<td>30.0</td>
</tr>
<tr>
<td>Labourers</td>
<td>9.5%</td>
<td>43.3</td>
</tr>
<tr>
<td>Students</td>
<td>10.3%</td>
<td>35.0</td>
</tr>
</tbody>
</table>

Source: Golfer questionnaire, 1968.

and 19.4% respectively. Craftsmen, students, and labourers represent only 31.2% of the total number of golfers. These findings are consistent with
those of the ORRRC reports which suggest that participation in recreation is closely related to the occupational hierarchy.\textsuperscript{38}

The highest participation in rounds of golf per season is by labourers who play 43.4 times per season. The reason for this high participation rate is not clear. The author contends that although this group participates frequently in one activity, the total participation in all outdoor recreation activities is probably less. Participation in such activities as driving for pleasure, swimming, skiing, picnicking, and boating may not be as frequent as it is higher in the occupational hierarchy.

Another explanation suggests that the structure of participation in outdoor recreation has changed considerably since the publication of the ORRRC reports in 1962. Labour occupations now receive remuneration comparable to many of the professional and managerial positions, and thus many more activities are within the financial grasp of this group.\textsuperscript{39} The last eight years have also witnessed a steady rise in the amount of leisure time available to this occupational group, which may be reflected in higher participation rates.

The ORRRC reports suggest that as income increases, participation in outdoor recreation increases, with the exception of the $10,000-and-over category,\textsuperscript{40} which demonstrates a decline in participation. The effects of income on participation in golf is essentially similar to the pattern noted in the ORRRC reports. The average number of rounds of golf increases with income, then drops substantially in the over-$10,000 group. (See Fig. 22.) The largest single group of golfers comes from the $5,000-$7,499 income group, with 32.8\% of the total golfers. Although the income categories are not exactly the same as found in the 1965 Survey
of Outdoor Recreation the basic trends are similar. (See Figs. 22, 23.)

**FIGURE 22**

**RELATIONSHIP BETWEEN INCOME AND PARTICIPATION IN GOLF, 1968**

<table>
<thead>
<tr>
<th>Income Category</th>
<th>Per Cent of Participants</th>
<th>Average Number of Rounds per Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $3,000</td>
<td>7.6</td>
<td>25.3</td>
</tr>
<tr>
<td>$3,000 - $4,999</td>
<td>11.2</td>
<td>33.7</td>
</tr>
<tr>
<td>$5,000 - $7,499</td>
<td>32.8</td>
<td>39.4</td>
</tr>
<tr>
<td>$7,500 - $9,999</td>
<td>24.6</td>
<td>36.7</td>
</tr>
<tr>
<td>$10,000 +</td>
<td>23.8</td>
<td>29.1</td>
</tr>
</tbody>
</table>

Source: Golfer questionnaire, 1968.

**B Outdoor Recreational Preferences**

Golfers appear to have definite outdoor recreational preferences. Asked to rank the summer outdoor recreation activities which they preferred, the golfers indicated that golf was by far their first choice. Of all the questionnaires issued, 81.3% ranked golf as one of their "favourite activities" and of that group, 69.9% claimed it was their first choice. Swimming was mentioned by 42.4% of the respondents; 10.1% considered it their first choice of summer activity, and 50.5% placed it second. Driving for pleasure was mentioned by 33.5% of the respondents and of these 15.0% stated it was their favourite activity. Picnicking was mentioned by 29.2% of the respondents although only 12.0% ranked it as first choice.

In 1965 the United States Department of the Interior conducted research into "favourite activities for all seasons." Of those inter-
FIGURE 23

PER CENT OF PARTICIPANTS 12 YEARS AND OVER PARTICIPATING IN SELECTED ACTIVITIES

BY INCOME OF PARTICIPANTS, U.S. TOTALS, 1965

<table>
<thead>
<tr>
<th>Family Income</th>
<th>Swimming</th>
<th>Driving for Pleasure</th>
<th>Picnicing</th>
<th>Fishing</th>
<th>Boating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $3,000</td>
<td>8%</td>
<td>13%</td>
<td>13%</td>
<td>13%</td>
<td>7%</td>
</tr>
<tr>
<td>$3,000 - $6,000</td>
<td>27</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>$6,000 - $8,000</td>
<td>21</td>
<td>19</td>
<td>20</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>$8,000 - $10,000</td>
<td>13</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>$10,000 - $15,000</td>
<td>19</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>$15,000 - $25,000</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>$25,000 and over</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>other</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

viewed, 76% indicated that they had a favourite summertime activity, and golf was mentioned fourth (after swimming, fishing, and picnicing). These results compare favourably with the results found in Waterloo and Wellington. (See Figs. 24, 25.)

FIGURE 24

SUMMER OUTDOOR RECREATION PREFERENCES OF GOLFERS, 1968

<table>
<thead>
<tr>
<th>Activity</th>
<th>Activity Preference</th>
<th>Ranked first</th>
<th>Ranked second</th>
<th>Ranked third</th>
<th>Ranked fourth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golf</td>
<td>81.3 %</td>
<td>69.9 %</td>
<td>14.4 %</td>
<td>5.3 %</td>
<td>10.5 %</td>
</tr>
<tr>
<td>Swimming</td>
<td>42.4</td>
<td>10.1</td>
<td>50.5</td>
<td>22.0</td>
<td>17.4</td>
</tr>
<tr>
<td>Driving for Pleasure</td>
<td>33.5</td>
<td>15.0</td>
<td>31.4</td>
<td>25.6</td>
<td>27.9</td>
</tr>
<tr>
<td>Picnicing</td>
<td>29.2</td>
<td>12.0</td>
<td>17.3</td>
<td>36.0</td>
<td>34.7</td>
</tr>
<tr>
<td>Fishing</td>
<td>23.7</td>
<td>13.1</td>
<td>31.1</td>
<td>24.7</td>
<td>31.1</td>
</tr>
<tr>
<td>Boating</td>
<td>17.1</td>
<td>6.8</td>
<td>29.5</td>
<td>34.2</td>
<td>29.5</td>
</tr>
<tr>
<td>Camping</td>
<td>16.7</td>
<td>16.3</td>
<td>16.3</td>
<td>37.2</td>
<td>30.2</td>
</tr>
<tr>
<td>Nature walks</td>
<td>8.1</td>
<td>-</td>
<td>14.3</td>
<td>33.3</td>
<td>52.4</td>
</tr>
<tr>
<td>Hiking</td>
<td>4.3</td>
<td>-</td>
<td>45.5</td>
<td>9.0</td>
<td>45.5</td>
</tr>
<tr>
<td>Horseback Riding</td>
<td>2.7</td>
<td>-</td>
<td>28.6</td>
<td>-</td>
<td>71.4</td>
</tr>
<tr>
<td>Other</td>
<td>5.8</td>
<td>20.0</td>
<td>40.0</td>
<td>26.7</td>
<td>13.3</td>
</tr>
</tbody>
</table>

Source: Golfer questionnaire, 1968.

The Department of the Interior also found that golfers participate in swimming (78%), picnicing (73%), driving for pleasure (67%), boating (45%), and fishing (42%) which correlates highly with the activities of golfers in Waterloo and Wellington counties. (See Fig. 26.)

All the above noted preferences tend to be gregarious activities carried out in groups of family or friends. These pastimes do not
FIGURE 25

FAVOURITE ACTIVITIES BY SEASON (SUMMER), U.S. TOTALS, 1965

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimming</td>
<td>32 %</td>
</tr>
<tr>
<td>Fishing</td>
<td>18</td>
</tr>
<tr>
<td>Picnics</td>
<td>6</td>
</tr>
<tr>
<td>GOLF</td>
<td>5</td>
</tr>
<tr>
<td>Playing outdoor games</td>
<td>4</td>
</tr>
<tr>
<td>Playing baseball</td>
<td>4</td>
</tr>
<tr>
<td>Camping</td>
<td>4</td>
</tr>
<tr>
<td>Gardening</td>
<td>4</td>
</tr>
<tr>
<td>Watching baseball</td>
<td>3</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>2</td>
</tr>
<tr>
<td>Boating</td>
<td>2</td>
</tr>
<tr>
<td>Water skiing</td>
<td>2</td>
</tr>
<tr>
<td>Walking for pleasure</td>
<td>2</td>
</tr>
<tr>
<td>Driving for pleasure</td>
<td>2</td>
</tr>
<tr>
<td>Sightseeing</td>
<td>2</td>
</tr>
<tr>
<td>Attending outdoor sports</td>
<td>1</td>
</tr>
<tr>
<td>Tennis</td>
<td>1</td>
</tr>
<tr>
<td>Playing football</td>
<td>1</td>
</tr>
<tr>
<td>Playing basketball</td>
<td>1</td>
</tr>
<tr>
<td>Watching auto races</td>
<td>1</td>
</tr>
<tr>
<td>Working at home</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

FIGURE 26

PER CENT OF PERSONS 12 YEARS AND OVER PARTICIPATING IN SELECTED ACTIVITIES, BY PER CENT
OF SAME PERSONS PARTICIPATING IN OTHER ACTIVITIES, U.S. TOTALS, 1965

<table>
<thead>
<tr>
<th>Activity</th>
<th>Golfing (100%)</th>
<th>Swimming (100%)</th>
<th>Driving for Pleasure (100%)</th>
<th>Picnicing (100%)</th>
<th>Fishing (100%)</th>
<th>Boating (100%)</th>
<th>Camping (100%)</th>
<th>Nature Walks (100%)</th>
<th>Hiking (100%)</th>
<th>Horseback Riding (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golfing</td>
<td>100</td>
<td>15</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>17</td>
<td>13</td>
<td>15</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Swimming</td>
<td>78</td>
<td>100</td>
<td>58</td>
<td>61</td>
<td>63</td>
<td>91</td>
<td>79</td>
<td>67</td>
<td>81</td>
<td>84</td>
</tr>
<tr>
<td>Driving for Pleasure</td>
<td>67</td>
<td>67</td>
<td>100</td>
<td>68</td>
<td>63</td>
<td>70</td>
<td>70</td>
<td>79</td>
<td>71</td>
<td>72</td>
</tr>
<tr>
<td>Picnicing</td>
<td>73</td>
<td>73</td>
<td>71</td>
<td>100</td>
<td>70</td>
<td>78</td>
<td>85</td>
<td>85</td>
<td>86</td>
<td>81</td>
</tr>
<tr>
<td>Fishing</td>
<td>42</td>
<td>39</td>
<td>34</td>
<td>37</td>
<td>100</td>
<td>61</td>
<td>63</td>
<td>40</td>
<td>49</td>
<td>48</td>
</tr>
<tr>
<td>Boating</td>
<td>45</td>
<td>38</td>
<td>31</td>
<td>33</td>
<td>50</td>
<td>100</td>
<td>57</td>
<td>35</td>
<td>42</td>
<td>47</td>
</tr>
<tr>
<td>Camping</td>
<td>14</td>
<td>16</td>
<td>12</td>
<td>14</td>
<td>20</td>
<td>22</td>
<td>100</td>
<td>24</td>
<td>38</td>
<td>24</td>
</tr>
<tr>
<td>Nature walks</td>
<td>22</td>
<td>19</td>
<td>20</td>
<td>20</td>
<td>18</td>
<td>20</td>
<td>34</td>
<td>100</td>
<td>38</td>
<td>27</td>
</tr>
<tr>
<td>Hiking</td>
<td>11</td>
<td>11</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>27</td>
<td>19</td>
<td>100</td>
<td>19</td>
</tr>
<tr>
<td>Horseback Riding</td>
<td>15</td>
<td>14</td>
<td>10</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>20</td>
<td>16</td>
<td>23</td>
<td>100</td>
</tr>
</tbody>
</table>

require physical stamina, and driving for pleasure and picnicking in particular are passive forms of recreation. In golf and swimming the emphasis tends to be on proficiency rather than on physical strength. In addition, the acquisition of a skill in an outdoor recreation activity is often considered to be a social asset.

The activities have another characteristic in common. They can all be enjoyed within the urban environment or very close to it. These user-oriented activities are considered to be the favourite summer activities, as annotated in several sources, yet little research has been directed toward them.

C Conclusion

Although golf was at one time considered to be the province of the wealthy, the evidence now suggests that it is enjoyed by a very broad cross-section of the population. The increased popularity is demonstrated by the success of the many new municipal and semi-private courses described in Section I of this chapter.

According to the questionnaire results, most golfers come from the professional, managerial and sales personnel members of the occupational hierarchy, with incomes between $5,000 and $9,999. Golf is considered to be an excellent carry over activity because of its emphasis on skill rather than physical endurance and strength, thus the average age of golfers is in the middle thirties. Many of the most active golfers are well into the late forties and early fifties. At this age, there is more available leisure time to enjoy the activity.

It is definitely an activity played by people with average or better-than-average education. The largest group of golfers have either some high school, completed high school, or some university. This is
remarkable considering the fact that approximately one half of the population has achieved only grade school education.

The outdoor recreation preferences of golfers in Waterloo and Wellington counties are similar to golfers in the United States. The preferences tend to be social and urban-oriented pursuits, such as swimming, picnicing, and driving for pleasure.

Socio-economic variables are useful in some respects for planners in understanding the broad parameters affecting outdoor recreation participation. However, they do have limited usefulness in actually predicting recreation tastes and preferences for many outdoor recreation activities which are not subject to market mechanisms. Factors such as the preferences of family members and friends, individual aspirations of the individual, childhood experience and others have all some degree of relevance to participation in outdoor recreation.

One factor is certain: the demand for outdoor recreation is increasing and the reasons for this are explored in the following section.
SECTION III: THE ACTIVITY

A Characteristics of the Activity

i) The Appeal

It is probable that golf is one of the oldest forms of outdoor recreational activity. It has roots in Scotland, firmly established as far back as 1754, when the world-famous St. Andrew's Golf Club was formed. Scottish politicians are said to have prohibited golf in 1456 because it interfered with archery practice, which was necessary for the defence of the country, and again a half century later because of declining church attendance. The game is traced even further back in history: it appears the Romans played a very similar game called paga-nica. A form of golf played in Holland in mediaeval times, het kolven, is a possible source of the present name "golf".41

Golf is a sport which places highest emphasis on skill, judgement, competition, and good sportsmanship. Each shot requires the golfer to estimate the distance between himself and the green, that he select the proper club, and that he execute the shot effectively. The player is placed in competition with his fellow golfers, himself, and with the natural environment. Satisfaction accrues if he competes well, and if he does not, the challenge is even greater for the next round.

One desirable feature of golf is that it makes competition equal for all participants. An elaborate handicap system allows the poor golfer to play with an expert golfer and both have an equal chance to win. Combined with a set of rules stressing courtesy and sportsmanship, golf becomes immensely appealing for a large number of people.

By its nature, golf is a social game, played almost invariably in the company of at least one friend, and most often in groups of
four. Gathering at the club house and on the tee allows contact with other interested parties and is frequently a means of broadening the player's circle of acquaintances. Businessmen frequently use the activity as a form of entertainment for business associates and extending good will. The country club atmosphere and social gatherings are especially appealing for women, as evidenced by the increasing number of women golfers.

ii) The Expenditure

The National Golf Foundation estimates that by 1970 there will be 10,000,000 golfers in the United States, playing on 10,000 golf courses. Participation has been increasing at the rate of 10% per year since 1957, and golfers have been spending substantial sums of money on equipment, clothes, and participation. It is estimated that golfing equipment accounts for 52.0% of the total money spent on sporting equipment. Golfers in the United States spent $150,076,671 in 1967, and this is an increase of 147% over 1957. The estimated 700,000 Canadian golfers spent approximately $15,000,000 on golfing equipment in 1967.

When the monies spent on equipment, construction and maintenance of golf courses, and all related expenditures are combined, the total is over $1 billion dollars per year in the United States - a substantial contribution to the economy.

Personal expenditures in the activity can vary considerably. A golfer can participate by renting equipment at the site and paying the required greens fee. (Rental fees may vary at different courses from $1.00 to $3.00, and the greens fee may vary from $1.50 to $3.50.)

Most golfers purchase their own equipment, which can represent a fairly modest investment of less than $100, or can be quite ela-
borate and require the expenditure of $1,000 or more. Required equip­
ment usually consists of a set of clubs ($50 - $400 or more), a golf bag
($10 - $150), spiked shoes ($15 - $50), and golf baUs (approximately
$6 per dozen).

Many golfers enjoy the exclusiveness of the private country club, which allows them full use of all golf and service facilities provided. Golfers are willing to pay an average fee of $266.73 for membership in a private club. Semi-private and municipal courses offer membership privileges but are not exclusive. According to the question­naire, golfers in the study region are willing to pay an average of
$91.52 for semi-private membership. The average rate charged in the region is $72.92. In a survey of fifteen southern Ontario clubs, the average rate for membership in private clubs is $254.60.

Golfers in the study area were asked to estimate the total expenditures on all aspects of the activity such as equipment, clothing, membership, greens fees. Some club members estimated their expenditures carefully and concluded that they spend approximately $1,000 per year. The calculated average expenditures for members (including private and semi-private) is $286.78 per year. This, in the author's viewpoint, is an extremely conservative estimate. Non-members tend to play less frequently and spend correspondingly less money on the activity. One non-member estimated his expenditure at $500 per year, but the average was $110.

Expenditure of time is also worthy of consideration. The game is generally time-consuming, and may involve for some golfers as much as one hour in driving time to and from the facility. Four hours is usually sufficient for a round of eighteen holes. The average golfer,
according to the questionnaire, is willing to wait up to twenty (21.2) minutes in order to begin playing. If the golfer plays two times per week, this represents at least ten hours of his leisure time, but this appears to be desirable for golfers in the study area, of whom 85% indicate that this is not too time consuming.

iii) Peaking

One of the most challenging problems confronting the management of recreational facilities, including golf courses, is the solution to the problem of "peaking." All courses indicate that their peak month is June. Participation drops off substantially during July and August, until the last week of August and the beginning of September, when the number of visitor days increases once again. Shorter days and inclement weather discourage most golfers by late October. Peaking occurs also on weekends. None of the courses in the study area indicate that they are operating at capacity during the week, and actually only half of them indicate that capacity is reached on the weekend. (In the Toronto area facilities are greatly overburdened on the weekends, with golfers lining up at 7 A.M. to tee off at 11 A.M.)

The reasons for the main peak in June and the subsequent decline are not particularly clear. Most owners suggest that June is usually a pleasant, sunny month without oppressive heat, and under these conditions the courses are at their best. Also, most companies and business establishments hold their golf tournaments during June, before the July and August vacation periods occur. Often companies close the plant completely during some part of July or August, and these people travel or visit cottages rather than vacation in the city.

Even the weekend peaking which occurs in May, June, and
September is cut back in July and August because of the general exodus from the city to cottage and camping areas.

The owners of semi-private clubs and the management of the municipal courses emphasize the importance of good weather in June, when the longer days increase the number of participants during the week. Golfers can often play eighteen holes after six o'clock during this month. In August and September the days are shorter, and revenue is lost from week night golfers. If the June weather is not amenable to heavy golfing activity, (as experienced in June, 1967 and 1969), many courses are placed in a difficult financial situation. The necessity of relying on good June weather for greatest income might be somewhat diminished by a concerted effort on the part of management to increase week day usage and to encourage more golf during July and August.

B Demand for Recreation

i) Measurement of Demand for Outdoor Recreation

There are at least two kinds of demand for parks and outdoor recreation facilities: demand for recreation activities, and demand based on the desire to preserve open space, flora and fauna and natural beauty. This review deals primarily with the former.

The use of attendance records is one measure of demand commonly used by planners. Often such records are available at ski resorts, golf courses, provincial and national parks, and similar facilities. Attendance records show how many people are willing to participate at a particular cost, but do not forecast "latent demand," nor do they indicate how changes in cost affect the individual's desire to attend. The important area of latent demand is considered by Keith McClellan and
Elliott Medrich, who suggest that latent demand

...may take any of the following forms:
(1) demand that occurs when entrance fees
to a facility are too high for all to
afford, (2) demand for a facility that is
relatively inaccessible to many who might
like to attend, (3) demand that cannot be
articulated because people are inarticulate
about their recreation needs, have no knowl­
dge of existing possibilities, or have no
experience with some activities.45

Attendance records, because they reflect the characteristics
of the participant contain certain biases. They do not give information
concerning those people who would participate if they could afford to do
so, or had some knowledge of the activity; accordingly, they do not
enable the planner to evaluate the total demand picture from this source.

Another technique used to establish demand which attempts to
circumvent the attendance data is the (neighbourhood) survey.46 Surveys
attempt to determine either how often people participate in particular
activities, or how often they would participate if they could. Yet even
a carefully designed opinion survey tends to be insensitive to the varied
experience of different socio-economic groups in the population, and to
the influence of cost, distance, and location, on the actual and projected
use of outdoor recreational facilities.47

The two surveys of the ORRRC in 1960 and in 1965 are the basis
for establishing a national recreational trend.48 They are not, however,
exceptionally useful for the planner at the local level.

A recreation facilities inventory is a common method of
showing not only that facilities exist, but also that a certain level of
demand is being generated. The Canada- and province-wide inventory of
outdoor recreation facilities being conducted by the federal government
in co-operation with the provinces is a good example of this type of measurement. Geography students at Waterloo Lutheran University completed the inventory of outdoor recreation facilities in Simcoe, Grey, Waterloo, Wellington, and Dufferin counties. This type of survey, considered in conjunction with attendance records, provides a fair measure of demand, although it does not reveal the characteristics of the latent demand.

Another frequently used measurement of demand is the survey which attempts to delineate a market area for a specific recreation site. One of the first of these studies was conducted by Ullman and Volk. With the use of a regression model, they provided a tool which could predict recreational attendance at reservoirs in Ohio. A similar study was completed in Canada by Robert Adams, who measures the demand for recreation in Algonquin Provincial Park by using the gravity model with appropriate modifications.

This type of survey is circumscribed by several limitations. It deals with one specific recreation facility only, and thus represents the demand for a unique set of social, economic, and locational characteristics. Consequently, the resultant model must be judiciously applied when dealing with other facilities of a similar nature.

In estimating the demand for outdoor recreation facilities, economists often gauge various kinds of expenditures, considering three main types: individual travel costs to and from a facility, entrance fees, and expenditures for developing, maintaining, or improving a recreation site. In a paper given to the Regional Meeting of the Canadian Association of Geographers at York University in 1968, W. Stauch discussed the economic impact on Prince Edward County of the campers' expenditures.
at Outlet Beach Provincial Park and the expenditures of the provincial government in developing and maintaining the park.\(^{54}\)

Many planners utilize a method of measuring demand known as "benefit cost analysis." It is one way of ascertaining the probable effect of a projected development and determining accordingly, whether the project should be undertaken. This benefit cost analysis rests on the simplifying assumptions that

1) any particular project affects only a subset of people, the quantities and prices of goods and services produced, and the resources used, 2) that these effects can be isolated and broken down into components which can be assigned a dollar value, and 3) that the social value of things outside the subset is not affected by the project or need not be taken into account.\(^{55}\)

This type of analysis is usually employed by government agencies to evaluate various projects in terms of the benefits derived to the costs expended. If a predetermined sum of money has been allocated for development in a given region, the project selected will be the one which produces the highest benefit cost ratio.\(^{56}\)

Benefit cost analysis determines the demand for a recreation system from the vantage point of location, but it does not necessarily lead to optimal site selection,\(^{57}\) which is an important consideration to local planners.

Demand for outdoor recreation is often derived by the use of standards. These are most often arbitrary, and are based on a "feel" for demand rather than any real measurement of it.\(^{58}\) Standards do not allow for differences in the socio-economic characteristics of various subsets of the population. Communities which have a high proportion of older people have different requirements than those with a high propor-
tion of older people have different requirements than those with a high proportion of children, yet the standards make little allowance for this factor:

Recreation space standards, other than those required for games such as football or tennis, represent relative rather than absolute space requirements. It is important to understand the conditions under which these relative requirements were developed. Standards developed in response to a specific set of resources, land use, and cultural conditions in one area may not be relevant to another area with a different set of circumstances.

Wilson provides an excellent assessment of the existing standards and the legislation available in Canada for the provision of outdoor recreation space.

An attempt has been made to review in the preceding paragraphs the various techniques available for establishing the demand for recreation. As indicated, several measurement tools are available, each circumscribed by varying limitations. It is easy to apprehend the difficulty in selecting and applying a demand measurement. Local planners in particular must often cope with a generally quite different set of circumstances than those of larger planning authorities in that they must fit their individual subset of land resources, people, and locational characteristics to one of the above methods.

ii) The General Increase in Demand

It is a well known fact that the demand for outdoor recreation has increased substantially during the last fifty years. While the population of the United States and Canada has increased at approximately two per cent per annum, the use (which is a surrogate of demand) of recreation has increased at over ten per cent per annum.
This indicates that the use on a per capita basis has increased much more quickly than the population.

Some of the increase in demand can be attributed to an increase in recreation facilities, but it is generally conceded that there are many other factors which have perpetrated an increase in demand.

iii) Factors Affecting Outdoor Recreation Demand

Two major considerations in assessing demand for a specific recreation area, and for outdoor recreation generally, are the size and characteristics of the population. As noted, part of the increase in demand can be explained by the population increase. Because of high migration to some places and high birth rates in others, some regions are higher than two per cent. British Columbia has grown at twice the national rate, yet areas such as Northern Ontario have shown a substantial decrease in recent years. Generally speaking, however, the North American continent has evidenced steady increases, with a corresponding effect upon demand for recreation.

Distribution of the population also affects demand in a regional sense. A glance at population maps for Canada and the United States between 1900 and the present would quickly reveal a sharp decline in rural population and corresponding rapid increase in urban population. Both countries are approaching an 80% urban population figure, whereas in 1900 the reverse was true. In addition to the need for preserving natural beauty in large tracts such as Algonquin Park and Yosemite Park, there is an increasing need to emphasize user-oriented facilities and intermediate areas to provide recreation relief in high density urban quarters. 63

Age is also a segment of the population structure that
affects the overall demand. The hypothesis that demand for facilities declines as age increases is generally valid, but there are differences among activities. As indicated in Fig. 27, participation in activities such as swimming, boating and canoeing declines steadily as age increases and experiences a sharp decrease after age 44. Other less physically demanding activities such as driving for pleasure decline, but not so rapidly as participation in more physically strenuous exertions.

The younger sections of the population demand outdoor recreation areas where physically demanding activities can be pursued; the older elements of the population require more passive and sedentary types of recreation. To plan for both elements of the population, their size and location must be understood so that facilities can be located optimally for service to both groups. This concept is of significance for Canadian planners, since Canada is rapidly becoming a nation of young people. It is expected that the median age will be 27 by the mid-1970's.

The very process of urbanization has been of some consequence in increasing demand for outdoor recreation. The importance of a growing urban culture has been examined by social scientists at some length. The consensus appears to be that urban life places a high degree of emotional strain and tension on individuals, attributed largely to inevitable close contact with others, and rapid pace of living. In addition, the process of industrialization which is significantly related to urbanization, has provided jobs which are physically less demanding and in many cases totally sedentary. These factors, in association with high density living and perpetual traffic congestion, are sufficient cause to increase desire and demand for recreation.
RELATIONSHIP BETWEEN AGE AND PARTICIPATION IN ACTIVITIES

![Graph showing the relationship between age and participation in activities such as swimming, boating and canoeing, hunting, horseback riding, and skiing.

Source: ORRRC 20.](image)
The many irritating aspects of a closely crowded urban existence exact a high toll in nervous tension; the physical and emotional release sustained in active outdoor recreation is increasingly important:

Recreation has always afforded an outlet for self-expression, for release and for attainment of satisfaction in life....the marked and rapid changes that have taken place in our social, industrial, economic, and political life have magnified the importance of recreation and have greatly affected the recreation life of the people.65

Recreation planners do not have sufficient information concerning what type of facilities are needed. Many outdoor recreation activities are not governed by market mechanisms and the planning officials are unaware of public preferences.66

The increase in leisure time over the past several years has been a factor of considerable magnitude in increasing demand for outdoor recreation. Clawson and Knetsch submit that leisure time has increased from 27% of total time in 1900 to 34% in 1950, with an expected increase to 38% by the year 2000.67 The ORRRC reports present a comparable estimate. In 1960, the average work week in the United States was 38.5 hours, and by the year 2000, this should decline to 30.7. Leisure time will increase accordingly to 32%.68 To emphasize the consequence of increased leisure, co-efficients of determination were computed by the ORRRC which showed the composite effect of one variable on others in affecting participation in outdoor recreation. Two variables were discovered to be paramount: income and leisure, with co-efficients of determination of 0.922 and 0.717 for the time period 1960-76.69

Income is a factor which must be stressed in considering demand. The 1960's have often been referred to as the "decade of the
Americans and Canadians have had increased amounts of "discretionary dollars" to spend.

As national revenue in the United States has risen, so have expenditures on all forms of recreation. It has been estimated that expenditures for recreation have increased from $1 billion dollars in the pre-World War I period to over $10 billion dollars during the 1950s. Clawson and Knetsch postulate that expenditure on recreation represents approximately 3% - 5% of disposable income, but the definition of recreation expenditure is rather limited. In the Canadian situation, Brooks estimates that Canadians spend approximately 14% of the family budget (rather than 3%) on recreation. His definition for recreation expenditure is broader, and probably more realistic, including as it does a proportion of money spent on automobiles, clothing, transportation, and other factors. It is interesting to note that regardless of income, approximately the same percentage of income is spent by all groups on recreation.

If all present economic prospects of increased productivity and gross national product become reality, the demand for large tracts of recreation space will be correspondingly high. Per capita real income is expected to rise 14% by the year 2000, with median family incomes more than doubling from $5,100 to $11,000. Average per capita incomes are expected to increase 35% - 55% by 1980, and 70% - 120% by the year 2000 with these increments anticipated despite a decrease in the average work week.

Range of income has a different effect upon rates of participation in various types of activities. Obviously, income is an important determinant for those activities which require large expenditures
of money, such as boating, travelling, and playing certain outdoor games. Participation in these activities, only a few of the many possible, is positively related to income. (See Fig. 28.) Not so strongly related to income are activities such as camping, picnicking, attending spectator sports events, or driving for pleasure. As income increases from the lower levels, participation increases rapidly, but as income is further augmented, participation in these activities actually declines. (See Fig. 29.) Furthermore, pastimes such as walking for pleasure, fishing, and hunting bear little relationship to income. (See Fig. 30.)

Of more particular relevance to this study is the effect of income and the possession of outdoor recreation equipment. The relationship between ownership of automobile, fishing equipment and rifles does not appear significantly high, suggesting that factors other than income determine ownership (see Fig. 31). The chart indicates high sensitivity to changes in income with respect to the ownership of swimming pools, vacation cottages, and golf equipment. The ownership of golf clubs indicates a high degree of sensitivity in the middle income range, then a subsequent decline in the rate of ownership as income advances beyond the middle range.

Despite the above noted variations in participation, the supposition generally holds true that participation and demand for outdoor recreation increases with income up to $10,000 a year, then begins to drop. The highest rate of increase has been in the lower income groups, then the trend stabilizes itself in the middle income range.

Closely related to increased income and leisure time is the factor of greatly extended mobility of Canadians and Americans. It is
RELATIONSHIP BETWEEN INCOME AND PARTICIPATION IN SELECTED ACTIVITIES FOR WHICH PARTICIPATION INCREASES WITH INCOME FOR BOTH LOWER AND HIGHER THAN AVERAGE INCOMES

Source: ORGC 39

Fig. 28

Annual per capita participation (Number of occasions — ratio scale)

Sightseeing

Motor boating

Playing games

Swimming

Per capita family income — $1,000 Ratio Scale
RELATIONSHIP BETWEEN INCOME AND PARTICIPATION IN SELECTED ACTIVITIES FOR WHICH PARTICIPATION INCREASES WITH INCOME FOR LOWER THAN AVERAGE INCOMES BUT LEVELS OFF OR DIPS FOR HIGHER THAN AVERAGE INCOMES

Source: CBO 19

Annual per capita participation (occasions - ratio scale)

Percapita family income - $1,000 Ratio Scale
RELATIONSHIP BETWEEN INCOME AND PARTICIPATION IN SELECTED ACTIVITIES FOR WHICH PER CAPITA PARTICIPATION IS LARGELY DETERMINED BY FACTORS OTHER THAN INCOME

Source: ORIHC 19

FIG. 30

Annual per capita participation (occasions - ratio scale)

Per capita family income - $1,000 Ratio Scale
RELATIONSHIP BETWEEN INCOME AND POSSESSION OF SELECTED OUTDOOR RECREATION EQUIPMENT

Percent of persons with article present in household—Ratio Scale

Source: ORRRC 19

Fig. 31
estimated that Canada will have eight million automobiles by 1980, or about two and one-half times the number in 1957. This newly exaggerated level of mobility for Canadians will undoubtedly be an important factor in stimulating demand for recreational space.

The construction of new roads in Canada is progressing at the highest per capita rate of almost any country in the world. The federal government is participating in sponsoring the development of roads to formerly remote and inaccessible areas, providing a further stimulus for recreation demand.

The presence in Canada of over two million American-owned automobiles each year adds to the demand for recreational space. Many of these automobile owners have vacation property in Canada; they use the provincial and national parks; they sightsee in the major cities and drive on already-crowded highways, adding to the mounting pressure on Canadian recreational resources.

Certain other variables, not so readily quantified, also contribute to the demand for outdoor recreational space. The social aspect of outdoor recreation should especially be considered. With the trends to increased leisure time, mobility, and income, the "life style" of Canadians has become more informal, and a more casual manner of association with friends is more common. Social prestige is another human factor to be considered in estimating demand, as there is some evidence that a hierarchy of "acceptable" recreational activities exists:

...in general, playing a particular sport is a means of achieving a certain status, and the sports themselves are evaluated in some hierarchy of prestige.

Based on broad parameters such as income and leisure, it may
be submitted that participation in recreation will increase, but that individual preferences may change substantially. It is almost an impossible task to project cultural preference changes, but if history repeats itself these will certainly occur. They will be induced by technological innovations and changing life styles, but to what extent is undetermined.

C The Demand for Golf

1) General Demand

Between 1955 and 1967, the number of golfers in the United States almost tripled, according to the National Golf Foundation. (See Fig. 32.) The most dramatic increase occurred in 1961, when there was a 13% increase in golfers. An increasing gap is noted if this data is compared to the number of golf courses, which are increasing at a rate of 3.8% per year for all types, and 7.6% per year for semi-private
clubs. Most heavily used facilities (Fig. 33) are municipal courses, and least used are the private clubs.

FIGURE 33
PERCENTAGE COMPARISON OF USE
AT PRIVATE, SEMI-PRIVATE AND MUNICIPAL GOLF COURSES, 1967

<table>
<thead>
<tr>
<th>Type</th>
<th>Per Cent of all Courses</th>
<th>Per Cent of Total Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>44.6%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Semi-private</td>
<td>42.5%</td>
<td>39.6%</td>
</tr>
<tr>
<td>Municipal</td>
<td>12.9%</td>
<td>45.0%</td>
</tr>
</tbody>
</table>

Source: NGF Statistical Sheets.

The popularity of the sport is not at all well documented in Canada, but the number of golfers increased between 1966 and 1968 from 600,000 to 700,000. The most critical need for golf courses is in suburban areas, surrounding large cities such as Montreal, Vancouver, and Toronto. "...it is precisely in these suburban areas, with their rapidly growing, increasingly youthful population, that such facilities are most needed." Not only has the demand for traditional courses increased, but also for the concept of golf-oriented subdivisions and resort towns. By 1970 there will be over 1,000,000 people living in communities directly associated with (and usually built up around) a golf course. In fact, of all regulation length golf courses opened in 1965, 17% were an integral part of real estate developments. This type of development is now emerging in Ontario. One of the biggest is found in Southampton on the Lake Huron shoreline. Metropolitan Structures of Canada Ltd. is develop-
ping a recreation and residential complex designed to accommodate 50,000 people near the Expo site in Montreal. There is some indication that a housing suburb integrated with a golf course may soon be constructed near Kitchener.

The demand for courses is increasing sufficiently rapidly to ensure the probable success of new municipal, semi-private, and residential-golf courses.

There are several factors which have contributed to the rising popularity of golf besides increased disposable income, leisure time, and mobility. There is considerable media coverage of golf news and events. During the summer months the Professional Golf Tours are covered at length by television and this wide exposure has undoubtedly contributed to rising interest in the sport. The game which was once conceived of as a "rich man's sport" has become, with the addition of more semi-private and municipal clubs, within the financial reach of most people.

ii) Present Demand for Golf Facilities in Waterloo and Wellington

Income, as suggested, is a key variable in assessing the demand characteristics for recreation. It is particularly relevant in attempting to establish demand for facilities that charge admission for their use, and all the golf courses studied fall into this category as they require either a game-by-game fee or the price of membership.

In a recent study completed by French, the relationship of income to the number of golfers was illustrated in Southwestern Ontario. By sampling census tracts in metropolitan regions which demonstrated homogeneity with regard to income, he was able to establish the number of golfers per person within each income group. By then converting the
ASSOCIATION BETWEEN INCOME AND PEOPLE PER GOLFER

\[ y = 8.9416 - 2.18 \]

Source: FRENCH
data into logarithms he has been able to establish a regression equation of 
\[ y = 8.9416 - 2.18x \] with a regression co-efficient of \(-0.69\) (see Fig. 34). When converted into actual figures, the relationship provides the results noted in Fig. 35.

This same relationship is used to establish the number of golfers in the study area of Waterloo and Wellington counties. By referring to the Canada census of 1961, the percentage of male wage earners in each income category was determined in these counties. By applying the "people per golfer" relationship for each income group, the total number of golfers in the counties was reached. (See Fig. 36.)

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>People per Golfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $3,000</td>
<td>28.8</td>
</tr>
<tr>
<td>$3,000 - $3,999</td>
<td>16.1</td>
</tr>
<tr>
<td>$4,000 - $4,999</td>
<td>10.8</td>
</tr>
<tr>
<td>$5,000 - $5,999</td>
<td>6.6</td>
</tr>
<tr>
<td>$6,000 +</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Source: Adapted from French

The results show the relationship of urban and rural non-farm males.

In establishing the need for golf courses required in Southwestern Ontario, it was considered useful to determine an optimum number of courses. French established an index of .02 hole per golfer in that region. This was derived by averaging the total number of members at each private club that was operating at capacity, then dividing that
number into eighteen holes. The assumption is that these courses do not have problems of congestion that the semi-private courses indicate.

FIGURE 36

ESTIMATED NUMBER OF GOLFERS IN WATERLOO AND WELLINGTON COUNTIES, USING INCOME REGRESSION MODEL

<table>
<thead>
<tr>
<th>County</th>
<th>Income Category</th>
<th>Per Cent of Population in each group</th>
<th>Population in each group</th>
<th>People per golfer</th>
<th>Expected number of golfers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo</td>
<td>-$3,000</td>
<td>27.0</td>
<td>44,612</td>
<td>28.8</td>
<td>1,549</td>
</tr>
<tr>
<td></td>
<td>$3,000-$3,999</td>
<td>27.2</td>
<td>44,943</td>
<td>16.1</td>
<td>2,793</td>
</tr>
<tr>
<td></td>
<td>$4,000-$5,999</td>
<td>35.5</td>
<td>58,657</td>
<td>9.2</td>
<td>6,376</td>
</tr>
<tr>
<td></td>
<td>$6,000+</td>
<td>10.3</td>
<td>17,010</td>
<td>4.2</td>
<td>4,030</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total: 14,767</td>
</tr>
<tr>
<td>Wellington</td>
<td>-$3,000</td>
<td>32.9</td>
<td>22,209</td>
<td>28.8</td>
<td>771</td>
</tr>
<tr>
<td></td>
<td>$3,000-$3,999</td>
<td>29.1</td>
<td>19,644</td>
<td>16.1</td>
<td>1,220</td>
</tr>
<tr>
<td></td>
<td>$4,000-$5,999</td>
<td>28.0</td>
<td>18,901</td>
<td>9.2</td>
<td>2,055</td>
</tr>
<tr>
<td></td>
<td>$6,000+</td>
<td>10.0</td>
<td>6,750</td>
<td>4.2</td>
<td>1,607</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total: 5,653</td>
</tr>
</tbody>
</table>

Source: Adapted from French.

*Two groups were combined to accommodate census data.

The same general characteristics are found in Waterloo and Wellington counties, and the index is retained. Fig. 37 represents the demand for golf facilities expressed in the number of holes per unit area. The demand for golf facilities, derived from the income regression model and the optimum index is twenty-three regulation golf courses, or 414 holes.
Another method for assessing demand has been developed by the RCGA. The technique is a standard based on population requirements and agrees with other organizations interested in the provision of golf courses. Basically, the model suggests there be 25,000 people for each eighteen hole semi-private golf club, and 60,000 people for each private club. These are standards set from the viewpoint of management, rather than golfers. These are the population requirements necessary for the course to realize a suitable profit. The model can be considered to suggest the minimum number of courses required.

Using these standards, the following results evolve for the study area:  

**FIGURE 38**

<table>
<thead>
<tr>
<th>County</th>
<th>Population</th>
<th>Public holes</th>
<th>Private holes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo</td>
<td>176,754</td>
<td>127.3</td>
<td>53.1</td>
<td>180.4</td>
</tr>
<tr>
<td>Wellington</td>
<td>84,702</td>
<td>61.0</td>
<td>25.4</td>
<td>86.4</td>
</tr>
<tr>
<td>Total</td>
<td>261,456</td>
<td>188.3</td>
<td>78.5</td>
<td>266.8</td>
</tr>
</tbody>
</table>

Nearest nine holes: 189 81 270
This represents a total of fifteen golf courses in the study area, comprised of 10.5 public courses and 4.5 private courses. In the summer of 1968, the study area had a total of 270 golf holes, public and private facilities inclusive.

FIGURE 39

DISTRIBUTION OF GOLF HOLES BY TYPE, WATERLOO AND WELLINGTON, 1968

<table>
<thead>
<tr>
<th>County</th>
<th>Private</th>
<th>Semi-private and Municipal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo</td>
<td>36</td>
<td>135</td>
<td>171</td>
</tr>
<tr>
<td>Wellington</td>
<td>27</td>
<td>72</td>
<td>99</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>207</td>
<td>270</td>
</tr>
</tbody>
</table>

According to the results of the income regression analysis (which idealizes the facilities from the golfer's standpoint) a total of 414 holes are required. The minimum RCGA standards indicate a requirement of 270 holes. The regression analysis and supply index suggests a deficiency of 144 holes, designating a need of at least eight new eighteen-hole courses in the study region. Employing the minimum population requirements model, there appears to be no need for any additional golf courses in the region (again, based on 1961 census data). The supply is satisfactorily meeting the demand for facilities.

The following results are obtained from the 1966 Canada census data (a partial census only). The total population of the two counties is 310,905 and by using the minimum population requirements standards, there is a need for 317 new holes. This indicates an increase of 47 new holes, or three new eighteen-hole courses could be economically viable.

The analysis of demand by income and by minimum population
requirements indicates than an increased number of facilities are required. According to the owner-operators and the golfers themselves, however, the situation is not critical. (See Fig. 40.) (In the questionnaire issued to the participants, they were asked to state whether they thought facilities were adequate in the Waterloo-Wellington region.)

FIGURE 40
ADEQUACY OF COURSES AS PERCEIVED BY GOLFERS,
WATERLOO AND WELLINGTON COUNTIES, 1968

<table>
<thead>
<tr>
<th>Adequate</th>
<th>163</th>
<th>63.5 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not adequate</td>
<td>94</td>
<td>36.5</td>
</tr>
<tr>
<td>Total:</td>
<td>257</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Those golfers who suggested that the facilities are not adequate were asked to indicate the types of courses they would like:

FIGURE 41
TYPES OF COURSES AND GOLF FACILITIES DESIRED BY USERS, 1968

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of responses</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-hole semi-private, including municipal</td>
<td>160</td>
<td>77.0</td>
</tr>
<tr>
<td>18-hole private country clubs</td>
<td>21</td>
<td>10.0</td>
</tr>
<tr>
<td>Par 3 (or executive courses)</td>
<td>19</td>
<td>9.2</td>
</tr>
<tr>
<td>Driving ranges, etc.</td>
<td>8</td>
<td>3.8</td>
</tr>
<tr>
<td>Total:</td>
<td>208</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The semi-private facilities within the area should be reassessed. Although the majority of golfers contend that these facilities are adequate, a sufficiently high proportion indicate enough discontent to warrant examination. In the author's opinion, the semi-private courses (with the exception of the two municipal courses) are not of sufficiently high calibre, and the real need is for the development of higher quality, properly located semi-private facilities.

There does not appear to be a great need for par 3 or short courses in this area. Merry Hill fulfills this function capably at the present time. This type of facility is generally used by beginning golfers, older people, and players who do not possess well-developed skills. Merry Hill is one of the most intensively used courses, which partially reflects the demand of the above-mentioned golfers, and an excellent location as well as good management.

According to the managers, the present supply of courses adequately meets the demand. Only seven of the clubs report that they operate at capacity on the weekend, and none indicate capacity attendance during the week.


Although the present demand in Waterloo-Wellington has been close to satisfied, the general demand for recreation space in southern Ontario is increasing sufficiently to indicate that prospects for future golf courses are favourable.

Future demand for golf courses is established by using both the regression analysis technique and the minimum population requirements employed for establishing present demand.
FIGURE 42

PROJECTION OF DEMAND FOR GOLF FACILITIES, WATERLOO-WELLINGTON, 1981,
USING INCOME REGRESSION MODEL

<table>
<thead>
<tr>
<th>County</th>
<th>Projected population</th>
<th>Per cent in each income group</th>
<th>Actual number Number in each group</th>
<th>Golfers holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo</td>
<td>326,500</td>
<td>27.0</td>
<td>88,155</td>
<td>3,061 number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27.2</td>
<td>88,808</td>
<td>5,516 golfers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35.5</td>
<td>115,908</td>
<td>12,599 x .02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10.3</td>
<td>33,629</td>
<td>8,007</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td></td>
<td></td>
<td>29,183</td>
</tr>
<tr>
<td>Wellington</td>
<td>124,000</td>
<td>32.9</td>
<td>40,829</td>
<td>1,418</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29.1</td>
<td>36,113</td>
<td>2,243</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28.0</td>
<td>34,748</td>
<td>3,777</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10.0</td>
<td>12,410</td>
<td>2,955</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td></td>
<td></td>
<td>10,393</td>
</tr>
</tbody>
</table>

Total for study area: 791.6
Rounded to nearest nine holes: 792

In using the income regression model, it must be assumed that the percentage of the population falling within each income group remains constant because of unreliable estimates for income shifts. Secondly, the population projections for the two counties include urban, rural farm, and rural non-farm populations. Since the rural farm population is decreasing, and the income of the population is increasing, it is not expected that the demand for golf courses using the regression technique will be significantly distorted.

Population projections for this area are derived from the Economic Survey of the Midwestern Ontario Development Region, published by the Department of Economics and Development. The projections are employed by the Department for various reasons, and are fairly reliable.
Using the minimum population requirements model, a total demand of 459 golf holes, or 25.5 eighteen-hole courses are required. This represents an increase of 189 new holes, or 10.5 new golf courses if the area is to meet only minimum requirements.

D Conclusions

Golf is a popular activity emphasizing skill, competition, and socialbility. It is subject to all the factors which have affected demand for other outdoor recreation activities, most important of which appear to be urbanization of the population, rising income, and increase of leisure time and mobility.

Although the present number of golf facilities almost meets the demand, the necessity for new courses in the future is evident. By applying an income regression model in conjunction with an optimum index it was established that by 1981, a total of 29 new eighteen-hole golf courses will be necessary. Following the analysis of a minimum population standards model, a more conservative estimate of 10.5 new
courses will be needed. The greatest demand will be for pay-as-you-play semi-private and municipal courses.
FOOTNOTES


2. This is the official stand taken by the Kitchener Golf Course Commission.

3. Par is an arbitrary measure of the difficulty of a hole. It is the number of strokes an 'expert golfer' would take to play the hole, allowing two putts after the ball is on the green. National Golf Foundation, *Planning and Building a Golf Course* (Chicago: 1967), p. 6.

4. Ibid., p. 9.


6. Ibid.

7. Ibid.

8. Ibid.


10. Ibid.

11. The Ontario Water Resources Commission monitors water taken from creeks and streams in excess of 10,000 gallons per day.


17. C. B. Morphy, Township Clerk (NichoU Township), in correspondence with the author, June 1968.

18. A. Israel, Township Clerk (Woolwich Township), in correspondence with the author, June 1968.
19 National Golf Foundation, Planning and Building a Golf Course (Chicago: 1968), p. 11.


21 Good dining and liquor lounge facilities can double total revenue. Almost one half of the revenue at the private clubs is derived from these sources.


23 Ibid.


26 Manager of the Cutten Club, interview held in Guelph, Ontario, May, 1968.

27 Assessment Commissioner, City of Waterloo, interview held in Waterloo, Ontario, June, 1968.


29 Ibid.

30 Paul Dyson, "Rockway Municipal Golf Course: A Housing Subdivision Versus a Municipal Golf Course" (unpublished Urban Geography Paper, Waterloo Lutheran University, 1968).

31 James Gaquin, Executive Director, Royal Canadian Golf Association, interview held in Toronto Ontario, November, 1967.


33 Ibid.


37. Ibid., p. 11

38. Ibid.


46. An example of this method is the CAPHER project conducted by the students in physical education at the University of Waterloo and the geography students at Waterloo Lutheran University, 1968.

47. Keith McClellan and Elliot Medrich, "Outdoor Recreation: Economic Considerations For Optimal Site Selection," p. 175.


59 Ibid., p. 2.


63 Marion Clawson and Jack Knetsch, Economics of Outdoor Recreation, p. 37.
Extreme pressure is being exerted on the recreation resources around Lake Ontario; the necessity for preserving such resources as the Niagara escarpment for future use is almost obvious.


Marion Clawson and Jack Knetsch, *Economics of Outdoor Recreation*, p. 20.


Ibid., p. 31.


Ibid.

Ibid., p. 104.


Ibid.


Eva MiUer and Gerald Gurin, *Participation In Outdoor Recreation: Factors Affecting Demand Among American Adults*, p. 37.

110

81 Article, Financial Post, April 6, 1968.

82 Ibid.

83 William Hartley, "125 Places to Live Along a Golf Course," Golf Digest, XVIII, No. 11, p. 44.

84 Ibid.

85 Article, Financial Post, April 6, 1968.


87 National Golf Foundation, Organizing and Operating Public Golf Courses (Chicago: 1968), section 2.


A Introduction

A wide range of variables influence the interaction between a recreation site and the potential user. In their review of demand, Clawson and Knetsch suggest the following variables:

(a) the innate attractiveness of the site, as judged by the average user.
(b) the intensity and character of its management as a recreation area.
(c) the availability of alternative recreation sites, and the degree to which they are substitutes for the recreation area under study.
(d) the capacity of the recreation area to accommodate recreationists.
(e) the climatic and weather characteristics of the area.
(f) the time required to travel from home to the area.
(g) the comfort or discomfort of the travel.
(h) the monetary costs involved in a recreation visit.
(i) the extent to which demand has been stimulated by advertising.

These variables are most relevant to resource-oriented and intermediate outdoor recreation areas, but they have some relevance for user-oriented recreation areas as well. With these variables in mind, this chapter attempts to assess the interaction and use of golf courses in Waterloo and Wellington counties.

B The Effect of Distance and Site Potential

1) The Inverse Distance-Participation Relationship

One important aspect developed in the literature of recre-
ation Geography and of resource management is the measurement of interaction between the facilities and the population. It is generally ceded that there is an inverse relationship between participation rates and distance.

In order to examine the extent of this relationship the golfers were asked to state the distance between the course they played most frequently and their home. In addition, they were queried as to the distance they would be "willing" to travel to play golf.

The participation per season of each golfer was then aggregated into distance bands in the following manner:

FIGURE 44

TOTAL PARTICIPATION BY DISTANCE BANDS
FOR GOLFERS IN WATERLOO AND WELLINGTON COUNTIES, 1968

<table>
<thead>
<tr>
<th>Total Participation</th>
<th>Distance Bands</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Rounds of golf)</td>
<td>(Miles)</td>
</tr>
<tr>
<td>2,332</td>
<td>0 - 2.99</td>
</tr>
<tr>
<td>2,383</td>
<td>3 - 5.99</td>
</tr>
<tr>
<td>1,716</td>
<td>6 - 8.99</td>
</tr>
<tr>
<td>862</td>
<td>9 - 11.99</td>
</tr>
<tr>
<td>442</td>
<td>12 - 14.99</td>
</tr>
<tr>
<td>524</td>
<td>15 - 17.99</td>
</tr>
<tr>
<td>312</td>
<td>18 - 20.99</td>
</tr>
<tr>
<td>91</td>
<td>21 - 23.99</td>
</tr>
<tr>
<td>147</td>
<td>24 - 26.99</td>
</tr>
<tr>
<td>50</td>
<td>27 - 29.99</td>
</tr>
<tr>
<td>100</td>
<td>30 - 50.0</td>
</tr>
</tbody>
</table>

Source: Golfer questionnaire, 1968.

After plotting this data on simple arithmetic graph paper, it was apparent that the relationship was not a simple linear one as anticipated, but rather a logarithmic relationship in the form of a negative exponential curve. By converting the dependent variable, participation,
Fig. 45

$y = 3.4014 - 0.0464x$

$r = -0.21$
into logarithms and plotting the ensuing values on three cycle log paper (Fig. 45) the linear relationship is clearly delineated. By using a simple regression analysis, the association between the two variables distance (x), and the aggregated golfer participation (y) is shown to be a strong one where

$$r = -0.91$$

and the general equation form is

$$\log y = \log a - x \log b$$

$$\log y = 3.4014 - 0.0464x$$

It is obvious that the inverse relationship found in recreation systems between participation and distance is a hypothesis which may be verified in the golfing system (see Fig. 45).

By referring to the cumulative percent of golfer participation and the distance actually travelled, the inverse relationship evolves again. Almost all the golfer participation (99.9%) would travel a distance of 1.5 miles. At a distance of 13.5 miles the participation declines to 18.5% (see Fig. 47).

A similar pattern appears when the distance golfers are "willing to travel" is considered. Willingness to participate does decline as distance increases, but it does so at a more gradual rate than the "actual distance travelled" figures indicate. It may be observed that 65.0% of the golfer participation would travel a distance of 13.5 miles.

11) Site Potential Surface

Having established the characteristics of the relationship, it is possible to develop the concept further into a theoretical site
CUMULATIVE PERCENTAGE COMPARISON OF DISTANCE ACTUALLY TRAVELLED AND DISTANCE WILLING TO TRAVEL

![Graph showing cumulative percentage comparison of actual vs. willing distance traveled.](image)
**FIGURE 47**

**CUMULATIVE PER CENT OF GOLFER PARTICIPATION**

**AS RELATED TO DISTANCE TRAVELLED**

<table>
<thead>
<tr>
<th>Distance (Miles)</th>
<th>Cumulative Per Cent (Golfer Participation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>99.9 %</td>
</tr>
<tr>
<td>4.5</td>
<td>73.9</td>
</tr>
<tr>
<td>7.5</td>
<td>47.3</td>
</tr>
<tr>
<td>10.5</td>
<td>28.2</td>
</tr>
<tr>
<td>13.5</td>
<td>18.5</td>
</tr>
<tr>
<td>16.5</td>
<td>13.6</td>
</tr>
<tr>
<td>19.5</td>
<td>7.8</td>
</tr>
<tr>
<td>22.5</td>
<td>4.3</td>
</tr>
<tr>
<td>25.5</td>
<td>3.3</td>
</tr>
<tr>
<td>28.5</td>
<td>1.7</td>
</tr>
<tr>
<td>40.0</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**CUMULATIVE PER CENT OF GOLFER PARTICIPATION**

**AS RELATED TO DISTANCE WILLING TO TRAVEL**

<table>
<thead>
<tr>
<th>Distance (Miles)</th>
<th>Cumulative Per Cent (Golfer Participation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>99.0</td>
</tr>
<tr>
<td>8.0</td>
<td>89.0</td>
</tr>
<tr>
<td>13.5</td>
<td>65.0</td>
</tr>
<tr>
<td>18.5</td>
<td>43.0</td>
</tr>
<tr>
<td>23.5</td>
<td>33.0</td>
</tr>
<tr>
<td>28.5</td>
<td>21.0</td>
</tr>
<tr>
<td>33.5</td>
<td>14.0</td>
</tr>
<tr>
<td>38.5</td>
<td>12.0</td>
</tr>
<tr>
<td>43.5</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Source: Golfer questionnaire, 1968.
potential. This is defined as the percentage of the participation which may be expected to travel to a particular site. In order to calculate the potential for a given site the following method is used:

(a) The study area is assumed to be an isotropic plain\(^4\) that is, all sites share exactly equal accessibility and physical attributes. The only variable which fluctuates is distance.

(b) The study area is divided into a grid system of three-square mile units and the centre of the urban places (population over 3,000) is plotted.

(c) The number of golfers for each urban centre of over 3,000 people is then computed. (See figure. 48.)

(d) The percentage of the participation which travelled specified actual distances is determined by referring to the cumulative percent participation/distance curve.

(e) By measuring the distance to any point on the grid system from all the urban centres, the percentage of the golfer participation which would possibly travel to the site is determined.

(f) The same procedure is conducted using the data that the golfers suggest they are willing to travel and then the two values for the site are averaged, giving a combined measure of the "actual distance travelled" and what they are "willing to travel."

The following map and the computations (in Appendix D) illustrate the potential for each site within a selected segment of the study area. Every site was calculated in order to illustrate the decline in potential in the area under consideration in a "potential surface form."
The number of golfers is calculated by using the percentage of county, rural non-farm, and urban population found in each urban centre. This represents over 81.2% of the region's golfers.

As anticipated, the site potential increases rapidly towards urban places, with the Kitchener-Waterloo-Bridgeport region registering the highest value of 76.0. As distance increases from this area, the potential declines. An interesting and rather unexpected discovery was the fact that there was no isolated peak near Guelph, which can be attributed to the fact that there is such extensive influence from the Kitchener complex, and to a more limited extent, from the draw of Galt, Hespeler, and Preston.
FIGURE 49

AN EXAMPLE OF SITE POTENTIAL COMPUTATION

<table>
<thead>
<tr>
<th>Site</th>
<th>Urban Centre</th>
<th>Number of golfers</th>
<th>Actual Distance (percentage)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1</td>
<td>Kitchener Complex</td>
<td>8,716</td>
<td>8%</td>
<td>697.3</td>
</tr>
<tr>
<td></td>
<td>Guelph</td>
<td>3,336</td>
<td>2</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td>Preston</td>
<td>1,034</td>
<td>14</td>
<td>144.8</td>
</tr>
<tr>
<td></td>
<td>Elmira</td>
<td>295</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>Fergus</td>
<td>321</td>
<td>1</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Hespeler</td>
<td>399</td>
<td>8</td>
<td>31.9</td>
</tr>
<tr>
<td></td>
<td>Galt</td>
<td>2,487</td>
<td>14</td>
<td>348.2</td>
</tr>
</tbody>
</table>

\[
\frac{1,295 \times 100}{16,586} = 7.8\%
\]

WILLING TO TRAVEL DISTANCE

<table>
<thead>
<tr>
<th>Site</th>
<th>Urban Centre</th>
<th>Number of golfers</th>
<th>Willing to Travel Distance (percentage)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1</td>
<td>Kitchener Complex</td>
<td>8,716</td>
<td>43%</td>
<td>3,747.9</td>
</tr>
<tr>
<td></td>
<td>Guelph</td>
<td>3,336</td>
<td>21</td>
<td>700.6</td>
</tr>
<tr>
<td></td>
<td>Preston</td>
<td>1,304</td>
<td>43</td>
<td>444.6</td>
</tr>
<tr>
<td></td>
<td>Elmira</td>
<td>295</td>
<td>14</td>
<td>41.3</td>
</tr>
<tr>
<td></td>
<td>Fergus</td>
<td>321</td>
<td>12</td>
<td>38.5</td>
</tr>
<tr>
<td></td>
<td>Hespeler</td>
<td>399</td>
<td>43</td>
<td>171.6</td>
</tr>
<tr>
<td></td>
<td>Galt</td>
<td>2,487</td>
<td>43</td>
<td>1,069.4</td>
</tr>
</tbody>
</table>

\[
\frac{6,213.9 \times 100}{16,586} = 37.5\%
\]

Site potential is calculated by combining the "actual" with the "willing to travel" distances:

\[
\frac{7.8 + 37.5}{2} = 22.6\%
\]

Site Potential for site 1,1 under isotropic conditions: 22.6%
C Analysis of Current Facility Use

i) Present Use

The private clubs do not keep accurate records of the number of daily rounds played and it would be false to assume that the number of rounds played by the average golfer (as derived from the questionnaire), multiplied by the club membership would give an accurate estimate. Several club managers state that many members play rarely, but maintain a full membership for social and business reasons. The manager of the Cutten club estimates that as many as 50% of the members are inactive.

The total number of rounds of golf can be easily estimated, however, at the semi-private and municipal courses which offer pay-as-you-play facilities. These courses keep accurate records by noting the receipts from the greens fees.

FIGURE 50

ESTIMATED NUMBER OF PAY-AS-YOU-PLAY ROUNDS OF GOLF
AT SEMI-PRIVATE AND MUNICIPAL CLUBS, 1967

<table>
<thead>
<tr>
<th>Course</th>
<th>Number of Rounds</th>
<th>Operating at Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Week days</td>
</tr>
<tr>
<td>Brookfield</td>
<td>11,000</td>
<td>no</td>
</tr>
<tr>
<td>Eldale</td>
<td>3,000</td>
<td>no</td>
</tr>
<tr>
<td>Fairview</td>
<td>9,000</td>
<td>no</td>
</tr>
<tr>
<td>Fergus</td>
<td>2,500</td>
<td>no</td>
</tr>
<tr>
<td>Foxwood</td>
<td>7,000</td>
<td>no</td>
</tr>
<tr>
<td>Grand River</td>
<td>5,000</td>
<td>no</td>
</tr>
<tr>
<td>Gala Glades</td>
<td>6,700</td>
<td>no</td>
</tr>
<tr>
<td>Hilltop</td>
<td>5,000</td>
<td>no</td>
</tr>
<tr>
<td>Merry Hill</td>
<td>22,640</td>
<td>no</td>
</tr>
<tr>
<td>Puslinch</td>
<td>11,250</td>
<td>no</td>
</tr>
<tr>
<td>Ranchlands</td>
<td>12,500</td>
<td>no</td>
</tr>
<tr>
<td>Victoria</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Doon Valley</td>
<td>12,500</td>
<td>no</td>
</tr>
<tr>
<td>Rockway</td>
<td>12,500</td>
<td>no</td>
</tr>
</tbody>
</table>
The data in Fig. 50 presents the total number of rounds of pay-as-you-play golf for the courses (as estimated by the management). None of the courses are operating at capacity during the week, and only seven indicate that they are operating fully on weekends. The variance in the total number of rounds played over the twenty-seven week season is considerable. The highest number of rounds is reported by the Merry Hill course (22,640 rounds); the lowest (2,500 rounds) is reported by the Fergus club.

ii) Interpretation of Use

As stated in the introductory comments to this chapter, numerous factors influence the amount of use of an individual recreation site, and this is definitely true of golf courses. As a starting point for analysis, the data to be used was plotted on a scattergram, with site potential as the $x$ axis, and the number of pay-as-you-play rounds on the $y$ axis. A simple linear regression analysis shows that the data correlates at $.74$ ($y = -1,404 + 175.9x$).

**FIGURE 51**

CORRELATION OF SITE POTENTIAL AND ACTUAL COURSE USE,
PAY-AS-YOU-PLAY COURSES, 1968

<table>
<thead>
<tr>
<th>Course</th>
<th>Actual Use</th>
<th>Site Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doon Valley</td>
<td>12,500 (rounds)</td>
<td>66.2</td>
</tr>
<tr>
<td>Rockway</td>
<td>12,500</td>
<td>73.0</td>
</tr>
<tr>
<td>Ranchlands</td>
<td>12,500</td>
<td>69.0</td>
</tr>
<tr>
<td>Puslinch</td>
<td>11,215</td>
<td>54.0</td>
</tr>
<tr>
<td>Brookfield</td>
<td>11,000</td>
<td>69.0</td>
</tr>
<tr>
<td>Fairview</td>
<td>9,000</td>
<td>52.0</td>
</tr>
<tr>
<td>Foxwood</td>
<td>7,000</td>
<td>47.0</td>
</tr>
<tr>
<td>Gala Glades</td>
<td>6,700</td>
<td>54.0</td>
</tr>
<tr>
<td>Grand River</td>
<td>5,000</td>
<td>73.0</td>
</tr>
<tr>
<td>Eldale</td>
<td>3,000</td>
<td>32.0</td>
</tr>
<tr>
<td>Fergus</td>
<td>2,500</td>
<td>26.5</td>
</tr>
</tbody>
</table>
RELATIONSHIP BETWEEN SITE POTENTIAL AND PAY-AS-YOU-GO PARTICIPATION

YELLOW}

 Thousands

 ROUNDS OF GOLF

 SITE POTENTIAL

 Fig. 52

 $r = 0.74$
According to the scattergram, there are two groups of courses with highly different attendance rates and (as will be later described) different location and management characteristics. The groups of courses with the highest rate of use (Doon Valley, Rockway, Ranchlands, Puslinch, Brookfield, Merry Hill) indicate certain basic similarities. In a locational sense they all are above the potential site figure of 59%, with Rockway, Ranchlands, and Brookfield the highest, at 76% and 68%.

In addition to the high site potential of these courses, they all reflect enlightened management. The municipal courses especially benefit from competent management, which shows in the carefully tended fairways and greens, well-maintained club facilities, and the helpful and knowledgeable staff. Merry Hill, the busiest course in the region, (not included in regression because of par 3 status) is also representative of a well-managed club. In addition to being well designed, the course is composed of watered, tended fairways and near-perfect greens. The golf professional and staff are most accommodating in their willingness to assist beginning golfers. (A large factor in the attendance rate at this course is its par 3 status, which gives a better opportunity to beginning golfers and allows more people to play during a given period of time.) This club encourages tournaments, and operates at special low rates during the week and before 11 A.M.

All of these high attendance courses have good, immediate accessibility. The Doon Valley club is visible from the Macdonald-Cartier Freeway, and is within a few minutes' drive of the Doon interchange. Rockway municipal course is surrounded by residential development and is on the major access route from Kitchener to the Freeway.
Merry HIll is situated in Waterloo township, on a paved road off of Highway 7, the main connector between Guelph and Kitchener. Ranchlands and Brookfield are located at the central junction of roads leading from Kitchener, Guelph, Preston, Hespeler, and Galt. Puslinch, the only course which does not have immediate paved access, is adjacent to the Freeway.

The courses with the low attendance rates, (Fergus, Eldale, and Grand River) share related characteristics. With the exception of the Grand River course, all these clubs are in a low site potential area. Although the low potential is not the only reason for explaining the low use of these clubs, it certainly is a major consideration. The Fergus club, for example, is located near the town of Fergus, with a population of only 4,500 people. The town is primarily a farm service centre, without a large number of professional and managerial people who tend to play golf more than other occupational groups.

Participation from the rest of the region is low because of the general inaccessibility from other population centres. The course is fifteen miles from Guelph and twenty-two from Kitchener, and golfers from these centres have so many other "intervening opportunities" that it is surprising the club fares as well as it does.

The course itself is not attractive, labouring under narrow, uninspired flat fairways and very small greens. The course is constructed on 27 acres, far below that of the other courses. It is a nine-hole course, which places it under further limitations, and its club house facilities provide bare essentials only.

Eldale and Hilltop represent approximately similar characteristics, with lack of capital investment in the club, poor maintenance
marginal management, and poor location in relation to major popu-
lation controls.

The Grand River course provides a major exception to the
general relationship between use and site potential. Although the
site has a very high potential (73.0) only 5,000 paid rounds are
reported. This is largely explained by a recent history of poor manage-
ment. The buildings were damaged by fire in 1966 and have never been
properly repaired. Because of the advancing Conestoga Parkway, only
eight holes are available to play, and the course itself has deterior-
ated badly because of lack of maintenance. These factors considered,
the low use is understandable.

In the view of most owners it is necessary to have at least
7,000 pay-as-you-play rounds per season, and at least 100 members to
meet operating costs satisfactorily. When related to the scattergram,
a location with a site potential of approximately 50% would attract the
required number of pay-as-you-play rounds.

B The Golfer and the System

In an effort to discover the factors which influence the
decision to play at certain golf courses, the golfers were asked the
following question: "When selecting a golf course to play, what factors
do you consider most important?" The response indicates the importance
of good management practices, especially with respect to course main-
tenance. The golfers emphasized strongly those factors which affect
the "quality of the recreational experience." In both urban- and user-
oriented recreation, quality is usually associated with good management
and a high level of capital investment. As Clawson and Knetsch point
out, "quality can be built," as well as found in the natural environment.

The most frequently stressed factor was the condition of the greens and fairways. Of all the golfers interviewed, 72.4 indicate that this is a key factor in selecting a course to play. If the course is well groomed and properly watered, it provides not only pleasing surroundings but also a fair test of the golfer's skills. A dry, poorly tended course increases the probability of damaging equipment and scoring poorly as well as being less pleasing visually.

The layout of the fairways and greens was stated as a criteria in choosing to play one course over another by more than 54% of the golfers. There are two main types of course design: penal, and strategic.

In the penal type of design, traps guard the greens in "bottleneck" fashion and the golfer must either hit the shot with great accuracy or choose a club to play short in order to avoid the trouble which he would find at his normal range. The course is characterized by unnatural-looking bunkers, geometrically designed traps, and very small greens. This type of course presents a severe challenge to even the best golfers and also penalizes the beginning golfer unduly, almost to the point of non-satisfaction.

In strategic design, trees, creeks, slopes, and other natural phenomena provide the hazards. This design employs fewer traps so that a golfer can hit with his full power and have a greater chance of placing his shot strategically to obtain favourable results. This kind of design does not penalize as severely and provides much greater user satisfaction.
Ten of the courses studied were designed by golf course architects. The elements of design are apparent in these courses; they offer a wide variety of shots for which the golfer must use all of his clubs. At best, they are designed with the safety of the golfer in mind, making provision for trees along parallel fairways, and placing tee areas away from greens. Natural hazards are more commonly found, although some of the older courses retain some fairways with penal design.

With the exception of the area's busiest courses, the quality of the recreational experience was not hindered by waiting or by overcrowding of the facilities. Doon Valley and Merry Hill golfers were the only ones who indicated severe weekend overcrowding. At these two courses, a waiting period of up to forty-five minutes may be necessary, which is longer than the average time the golfers are "willing" to wait. Their response indicates that waiting time should not exceed approximately twenty minutes.

Efficiency the course management will often group players into foursomes, which may include people unknown to the golfer. The following foursome may commence play only when the first group has completed the second shot. The maximum capacity for a golf course is 2 people at any given time. This allows for two foursomes per hole, one on or approaching the green and one teeing off or working its way down the fairway. When more than two foursomes are playing the same hole, it is inevitable that congestion will occur, which lessens the quality of the recreation experience.
Overcrowding in the Toronto area (compared to the study region) is severe:

Golfers arriving at the Humler course at 6 A.M. can expect waits of three hours, more or less. Those who have arrived at 8 a.m. have waited up to six hours. Golfers from metropolitan Toronto can drive to one of the courses in Waterloo-Wellington and be on the tee in one and one-half hours, even at peak weekend periods.

In order to solve the problems of waiting to tee off and course congestion, and still keep the course functioning at the optimum rate of 144 people at a given time, Rockway has initiated a reserved starting time. The implementation of this system, with resultant control of traffic, has reduced the problem of sufficient space for waiting golfers, in addition to maintaining the quality of the recreational experience (as well as high attendance rates.)

Accessibility as a factor influencing the golfer's decision to play a particular course is not as significant, according to the golfer, as originally thought. The design and maintenance factors outweigh accessibility, as only 45.5% of the golfers mentioned it in response to the question.

The other factors such as the social considerations (22.2%), the dining and liquor lounges (21.0%), and the pro shop were mentioned least frequently. It is the author's opinion that these additional facilities probably play a more significant role than indicated by the golfers' responses.

Golfers and operators exhibited much the same attitude towards the provision of golf courses by the municipality. Although Kitchener is the only municipality which provides golf courses,
of the people interviewed approved of municipal involvement. Many people indicated their disapproval of the municipality's allowing certain facilities to be jeopardized; for example, the Grand River course has been purchased by the city of Kitchener to build the Conestoga Parkway. Many people indicated the city of Galt should have made a more concerted effort to retain St. Andrew's, and the members of Fairview in Guelph have reason to be concerned about the future of their course. In fact, it is possible that three of the golf courses in Guelph might be sacrificed to an expanding throughway system presently under consideration. Golfers are aware of the role that the municipality might play in the provision of outdoor recreation areas and open space, and are aware that golf courses are a part of that system.

The golfers in the region are generally satisfied with the fees charged by the course operators. They were asked what they would be willing to pay for greens fees, and the average figure was $2.76, which fluctuates slightly with the frequency of play. Those who play 1 - 5 times per season were willing to pay an average of only $2.42, and those who participated 26 - 30 times indicate that they would pay an average of $3.10. These results suggest that as golfers play more, they value the game more, or are willing to pay more for it. After a certain frequency of play is reached (31 - 35), the amount they are willing to pay begins to decline ($2.83 average). If golfers play as frequently as thirty times per season, it is likely that they would join a country club and avoid the cost of daily fees.

The clubs which charge daily fees seem to be in accord with the current limits suggested by golfers. The average cost during the week at the clubs in the area is $1.92, and on the weekend $2.96. Some
of the clubs offering more extensive facilities charge more than the average, but considering their total use and membership it appears that patrons do not hesitate to spend the necessary amount.

In the opinion of the golfers, the membership fees for both private and semi-private facilities in the study site are suitable. Of all those interviewed, 53.7% were members of either a private or semi-private club. They demonstrate willingness to pay an average of $91.52 to join a semi-private club, and again this is higher than the average rate being charged in the area, which is $72.92.

Much the same pattern is demonstrated at the private clubs. The golfers state that the average fee they would be willing to pay in joining a private club is $266.73. The average membership fee at private clubs in southern Ontario is $254.60, and in the study area this is lowered to an average of $190.

The costs in the Toronto region for similar facilities are noticeably higher. The author has observed (although with only a few courses on which to base judgement) that greens fees at courses with approximately the same facilities as those offered in the study area charge 20%–25% more. The price of weekend play in the metropolitan Toronto area is often $4.00 or more. This fact, in conjunction with conditions of severe course crowding, may explain why a substantial number of golfers from Toronto play at those courses in the Waterloo-Wellington region which have easy access from the Macdonald-Cartier Freeway.

Of all the golfers interviewed, only 27.2% of them suggest that they would increase their rate of play if more facilities were made available, and 72.8% felt that they would not do so, implying general
satisfaction with the present facilities. The golfers were also asked about the adequacy of the courses, and 63.4% replied that the courses were adequate.

E Location Factors

i) As Perceived by Management:

The owner-operators were asked to determine the key location factors in this manner: "What do you consider to be the most important three factors in determining the location of a golf course?" The most commonly stated factor was the nature of the terrain. "Gently rolling" or "slightly undulating" property with an abundance of potential natural golf hazards was the preferred type of land.

The second most mentioned factor was proximity to a large population centre. In order to have a sufficient number of golf rounds the owners suggest that there should be a nearby population of 20,000 to 30,000 for a semi-private course and an even larger number for a private course. And one owner stated, the characteristics of the population are also significant because the young, well educated professional and semi-professional people found in the total population structure are the most likely source of potential players.

Accessibility was also stressed as a key factor in selecting location. Owners feel that a distance of eight to ten miles from the city centre is the maximum distance a course could locate and still expect a reasonable share of the total golf market. Some expressed the opinion that private clubs can not afford to be more than five or six miles from the population centre if they are to maximize the use of dining and lounge facilities. (A large portion of the revenue at private
clubs is derived from this type of facility.) Accessibility to a major highway or thoroughfare was considered significant, and the owners noted that a well designed course should have at least two holes facing the highway to act as a stimulus to transients. This is of course more important for municipal and semi-private clubs.

The Doon Valley municipal course is a good example of an attractive location for passing tourists. Approximately one third of the course, including the club house and the Grand River, can be seen from the Freeway. Doon is a convenient location for sales meeting and conventions for a large part of southern Ontario. The Kitchener region is centrally located in the Toronto-London corridor and is convenient for a great deal of convention and tournament use.

The Puslinch course, although strategically located for access by a large percentage of the region's golfers, can not be seen from the Freeway although it borders it. Also, the club entrance is from a lightly travelled gravel road, and unless the golfer knows exactly where the course is, it is difficult to find.

Adequate water supply is essential in selecting a location, although the owners ranked this factor fourth. One inch of water per week is essential, whether derived from rainfall or irrigation system. In the study region, this approximates 60,000 gallons per day, for a nine hole course, to supplement rainfall. The Kitchener area receives approximately three inches of rainfall per month, slightly more than half the required amount to maintain the course. Irrigation systems are a necessity at all the region's courses. Eleven of the courses have total irrigation systems providing water for greens and fairways; seven more have only partial systems giving coverage to greens and tee areas. Without
adequate irrigation on the fairways the soil becomes hard and the grass grows diseased and brown. This situation is most undesirable from the golfer's standpoint.

Type of soil is another factor deemed important by the managers and owners. The soils, with a few exceptions, have characteristics favourable to the production of turf. The most suitable are sandy loams. Soils with high sand content are less desirable because of their low moisture-holding capability and inability to hold turf during hard golf play. Soils with high levels of clay are prone to compaction, as well as poor drainage, which detracts from turf growing ability. There is a variety of turf types, but the most commonly used in the study region is poa annua.10

As all of the course must be well drained, an effective natural drainage system is a definite factor in selecting location. The turf renews about 60% of its root system each spring, and if water tables are high, shallow rooting of the plant is inevitable. Maintenance equipment can cause excessive compaction in the low wet places, rendering the soil unproductive even after excess water has disappeared.11 Several of the courses in the area do have drainage problems. Those which are located on flood plains, such as Ranchlands and Brookfield, are particularly prone to flooding. As a case in point, during the month of June 1967, excessive rainfall and subsequent flooding caused the management to forfeit $7,000 in greens fees alone. In July, 1968, a dam broke upstream from the aforementioned courses, leaving large parts of them out of commission.12

The manager of the Puslinch course placed a high value on good drainage. By selecting a site with good drainage, he is able to
### FIGURE 53

RANKED LOCATION FACTORS AS PERCEIVED BY COURSE MANAGERS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency Mentioned</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrain</td>
<td>10 (times)</td>
<td>1</td>
</tr>
<tr>
<td>Large population</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Accessibility</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Water Supply</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Soil and Drainage</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Liquor License</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

### FIGURE 54

COMPARATIVE RANKS OF LOCATION FACTORS

GOLFERS AND COURSE MANAGERS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Golfers</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Terrain</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Water Supply</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Trees and Natural Hazards</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Population</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Soils</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Liquor License</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: \( r_s = .52 \); significant at a 95\% confidence level.
open on the average two weeks earlier than the competition. After a heavy rainfall his course is almost immediately playable, a factor that provides him with a slight advantage over the other courses in the region.

Several managers mention that a favourable location would be in a municipality which allows liquor lounge facilities. It was their opinion that golfers appreciate the convenience of a licensed lounge on the premises, and discussion with golfers certainly bears out this view. Bar revenue is of utmost importance to private clubs; it is estimated that roughly half their revenue is from dining and lounge facilities.

ii) As Perceived by Golfers:

The golfers were asked what they considered to be the most important factors in determining the location of a golf course. The question was open-ended in form, and resulted in a wide variety of answers. The most frequently mentioned (41%) factor was accessibility (a slight contradiction to the results of a previous question asking what were the most significant factors to consider in selecting a course to play). The responses were generally comparable to those given by the managers, but with slightly differing priorities. (See Fig. 54.)

One interesting factor recurred several times in varying forms. The golfers demonstrate a decided interest in and appreciation for landscape values. In their responses, such phrases as "scenic rolling land", "beautiful scenery," "away from industrial areas," were common. This general response adds emphasis to the argument for legislation to preserve scenic areas and open space.
iii) Land Cost as a Location Factor

The fact of drastically increasing land values in urban and adjacent lands is a common aspect of daily life. The causes for increased cost evolve from intense competition and demand for land and the inevitable speculation which accompanies this competition. The appreciation of land value places golf courses located in urban centres in an unusual financial position. Large tracts of land such as those owned by golf courses and country clubs are not often found in cities, and their value as potential high-rise apartment development and housing subdivision sites is evident. From an economic point of view the high value of the land may well justify using it in some fashion other than a golf course. By selling the urban property the club can realize a large profit, relocate in a more rural setting, and provide better facilities for members and players. On the other hand, this increases the travelling distance required to play, and may decrease use.

In Waterloo-Wellington, four clubs have been subjected to the pressure of land use competition. St. Andrew's, located well within the city limits of Galt, was eventually sold for a housing subdivision in 1968. The owner realized a substantial gain over the original cost price of the land. The city of Galt contemplated purchasing the club to be a part of their recreation system, but ultimately decided against this action because of other priorities.

The Grand River club was purchased by the city of Kitchener in order to provide a way for the construction of part of the Conestoga Parkway. With the revenue derived from this sale, the owner has been able to relocate in a rural area with better site capability,
although not nearly as well located for the present users.

The Guelph Country Club, which is located on prime development land, has been negotiating for some time with a developer interested in using the land for high-rise apartment buildings. The Guelph club has also purchased property in Nicholl township, seven miles from the present site.

Fairview, situated on land recently annexed into the city of Guelph from Puslinch township, has also considered the possibility of selling and relocating. The club is on land ideally suited to residential development, and at one point in 1967 was actually sold to a developer; however, the change was not consummated as certain contractual obligations were not met. The land on which Fairview is located is being considered by the city as a possible extension to a contemplated expressway system.

The competition for golf course land by those who would rather use it for some other purpose is keen enough to cause clubs to relocate in more rural settings or simply to sell out and realize a capital gain.

The very fact of high land costs, combined with correspondingly high interest and mortgage rates, does not encourage the individual who wants to construct a golf course to do so near urban places where the need is greatest. The length of the operating season, which is only 25 - 27 weeks, almost precludes the building of golf courses very close to cities. The total cost approaches $400,000 or even more; and with such a short operating season, the investment involves a high degree of risk. (Several operators estimate the return on their investment in a good year as only 6% - 8%.

The golf courses in Waterloo-Wellington were formed under unu-
usual circumstances which allowed their recent development, or were constructed prior to the recent rapid escalation of land costs. For example, the land where Brookfield and Gala Glades are situated was owned by the respective families of the management for some years, and land cost was not a significant expenditure. The major costs lay in developing the course itself.

Rockway Municipal course was developed from a sewage disposal site during the depression years, and provided work for men during this period of economic crisis. Westmount, the Cutten Club, and the Country Club were all constructed long before the current increase in land costs (actually prior to 1930). Their locations at that time were well into the "country."

Most of the owners feel that as an investment, golf courses are a difficult means of realizing a consistent profit. The operation of the golf course was often regarded as a hobby, and most of the club owners in the study area have other sources of income. Some are in an excellent position for speculative profit as well.

F Conclusions

Of numerous factors affecting interaction between the golfers and the facilities, one of the more significant is the actual site potential, which is essentially a function of distance from the market. Other important variables which influenced the golfers' attendance are the quality of management, reflected in the overall condition of green and club house, the design, and the challenge of the course. The least important selection factors, according to the golfers, are the social and associated functions performed by the club.
Waterloo-Wellington golfers are apparently satisfied with the available facilities in terms of total number and cost involved to use the facilities. This becomes clear when a comparison is made between what they are willing to pay and what they actually pay (for both greens fees and club memberships).

Location factors as perceived by both management and participants are similar, differing only in priority. Of many possible criteria, the most important are nature of the terrain, population accessibility, water supply, soil drainage, and liquor license. Golfers repeatedly stress that location should be in unspoiled, scenic countryside.

High cost of land in urban areas affects the location of the courses by forcing present clubs out of urban areas where they are most needed into rural areas which are more inaccessible for the golfer population.
A Introduction

Models are used in Geography to represent the major characteristics of open systems and demonstrate certain properties found within these systems:

A model is an simplified structuring of reality which presents...significant features in a generalized form. Models are highly subjective approximations in that they do not include all associated observations or measurements, but as such they are valuable in obscuring incidental detail and in allowing fundamental aspects of reality to appear.13

Models can be classified in several ways, and are commonly considered to be iconic, analogue, or symbolic - each representing a higher level of abstraction. Iconic models represent reality, only on a smaller scale, and analogue models represent one property in terms of another. Symbolic models, the highest level of abstraction, view reality with symbols such as a mathematical equation, or logical verbal representation.14

Models may also be classified as descriptive or normative, which introduces another aspect. Descriptive models are static and are considered to be "some stylistic description of reality."15 Normative models are dynamic and suggest what may happen "under certain stated conditions."16

The purpose of the model developed for this thesis is to assist in the proper location of golf courses in Waterloo and Wellington counties. In that sense it is primarily descriptive, developing the characteristics necessary for suitable locations. It describes the potential of a given site in terms of the regional golf market, and also in relation to
FIGURE 55

DECISION-MAKING SCHEMA

Entrepreneur

Group

Decision Maker

Supply

Municipality

Demand

Alternate Sites

Physical Capability

Potential

Selection of Site

Not a viable project

Selection criteria satisfied

Selection criteria not satisfied
physical characteristics which are necessary for successfully operating a golf course.

The potential of a given site is applicable only for Waterloo-Wellington but the physical characteristics described have relevance for other areas as well.

A series of evaluations must be made, as shown on the golf course location schema, before a site is selected. An understanding of the demand for golf courses and the techniques available to assess the supply in relation to the demand is necessary. This can be achieved by using the methods formerly outlined in this thesis: either an income regression model or a minimum population requirements model may be used.

An inventory of the courses available and their relative prosperity is useful to understand how well the demand is being met. If the decision-maker is then satisfied that a golf course can be successful, there remains the problem of selecting a site.

B The Model

i) Site Potential

As indicated in the chapter dealing with the interaction within the system, the user potential of a site is one of the important criteria which should be considered in selection.

A review of the potential map will show that any one site may be considered in terms of the entire region's golf market. It is assumed that a course should locate within drawing range of at least 7,000 rounds of pay-as-you-play golf. Any location with a 50% or higher potential will satisfy this requirement within the existing system.

ii) Physical Capability Characteristics

The physical site and the users interact in a direct manner.
Ultimately the site affects users' evaluation of the course, which will in turn affect the desire to return, and thus total participation rates. Physical attributes of the site become of even greater relevance when the supply of golf courses approximates the demand. All other factors being equal, the physical qualities of design and beauty become of prime importance as selection norms. Of all physical characteristics, the following are deemed most significant:

(a) Size of site - The course should be a minimum of 50 acres for a nine-hole course, and 110 for eighteen holes. This is not large, however, and courses this size allow a greater margin for injury. Eighty acres for nine holes, and 160 for eighteen, will allow sufficient land for developing a course of superior calibre. If possible, land adjacent to the course should be purchased for future additions or expansion.

(b) Shape - It is preferable to select an irregularly shaped tract of land as it adds to the design possibilities which will increase the challenge and visual effect of the fairways.

(c) Topography - The land contours should be gently undulating or slightly rolling. Rugged terrain should be avoided as it would inevitably increase the difficulty of playing the course, and also necessitate to many "blind" shots, which increase the injury hazard. Maintenance costs and construction costs would also be higher on this type of terrain. Flat land, although easily tended, detracts from the challenge and is aesthetically less pleasing.

(c) Trees and vegetation - The land should be dotted with stands of mature trees and a variety of shrubs. A mixture of coniferous and deciduous trees provides the best visual contrast and not only con-
tributes to the beauty of the course but provides some protection from possible injury along parallel fairways. Trees and shrubs enhance the layout possibilities of the course, provide ideal natural hazards, and add to the challenge presented.

(e) Water capability - The site must be capable of producing 120,000 gallons daily for an eighteen-hole course. This can be derived from either municipality water supplies, ground water, or (preferably) a river or stream. This amount is necessary to supplement the three inches of rainfall per month which is characteristic of the study area and of most sections of southern Ontario. Water from ground water and streams can be diverted into pools and integrated as water hazards, if desired, and add considerably to the visual appeal of the course, as well as to the test of skill. (Location on a flood plain is not advisable because of the obvious hazard implied.)

(f) Soils and drainage - Although most soil types can be modified to provide suitable conditions for the growth of turf, it is highly advisable to locate on soils of high agricultural potential. The ARDA Class I and Class II soils are generally suitable for golf course locations. Class I soils approximate near ideal conditions for turf growing and little modification is necessary. Class II soils are acceptable but have slightly lower fertility and as a result require more careful management.

The soil should be well drained. Poor drainage results in difficult turf growing conditions in addition to increasing maintenance costs. Drainage problems on a particular site are not clearly marked on the ARDA soil potential maps and only on-site investigation will reveal if they exist.
An effort should be made to purchase land where the previous owner has maintained the natural soil fertility by careful soil management. Selecting property that has been well maintained pastureland is advisable.

(g) Immediate access - A paved road is desirable as the immediate access route to the site, and the club house should be clearly visible from that road. This makes entry to the course easier, and also provides needed advertisement for pay-as-you-play courses. Gravel and soft-surfaced roads often become impassable after a heavy rain, and frequently dust conditions which prevail on country roads in the summer months detract from the quality of the outdoor experience.

(h) Surrounding land use - Golf courses should be in locations surrounded by compatible land uses, such as residential areas, light industries or open farm land and open space. Locations where industrial pollutants, heavy traffic and unattractive land uses (e.g. gravel pits) are obvious, should be avoided. In rural settings, surrounding idle land which has deteriorated into heavy weed growth can add significantly to the cost of maintenance as well as depreciating the beauty of the environment.

C Application of the Model

To demonstrate the usefulness of the model developed, three sites in the study region have been selected in accordance with the model. All the sites meet the requirements demanded by this thesis, but final selection should be made by a qualified landscape architect.
SITE I

MOSBOROUGH STATION, WELLINGTON COUNTY

Location and Potential
1. Geographical co-ordinates: i) Topographic sheet, Guelph 40 W (west half)
   ii) 525,177
2. Relative location: approximately eight miles from the Kitchener complex and approximately six miles from Guelph on Highway 7.
3. Site potential: According to the site potential map, the location is very favourable - within range of 62.8% of the current golfer population.

Physical Capability of the Site
1. Size: Approximately 200 acres are suitable for development into a golf course, which provides a wide margin beyond the required minimum of 110 - 160 acres.
2. Shape: The irregularly shaped lot would depend on the segments purchased from the present owners.
3. Topography: In this tract of land, the topography is almost ideally suited for a golf course. The land has sections of undulating contours and sections of relatively flat land. The surrounding countryside is well-maintained farm and pasture land, and the area is aesthetically pleasing.
4. Trees: A mixture of both coniferous and deciduous trees is found, distributed in clumps throughout the site. Mature trees are located all along the river bed, along the western side by
MOSBOROUGH STATION

contour interval = 25 feet

scale
the secondary access road, and border the eastern side of
the site.

5. Water: This site is capable of producing the minimum required
amount of water. At the present time there are two pools
on the property fed by a stream. The water supply for the
present buildings is based on ground water.

6. Soil and drainage: According to the ARDA soil capability map for
agriculture, these are Class 1\textsuperscript{2} 3\textsuperscript{3} soils, which generally are
suitable for all crops with only minor limitations (steepness
of topography). The site has no practical limitations for
the growth of turf.

Some small sections along the present river are poorly drained.
This would not be a significant problem in the development of
a course, as the rest of the site has excellent drainage
characteristics.

7. Access: Immediate access to the site is by either of two roads:
Highway 7, and a secondary township road. The course site can
be seen from Highway 7, from an elevated position which per­
mits an excellent view of the site. With good design, at
least four holes could be seen from the road.

8. Surrounding land use: The land is well away from congested urban
sprawl, in a scenic, rolling farmland setting. Farms sur­
rounding the site are well-maintained in mixed farming.
SITE II

GRAND RIVER, CONESTOGA

Location and Potential

1. Geographical co-ordinates: i) Topographic sheet, Guelph 40 P/9 (west half)
   ii) 408,180 to 413,189

2. Relative location: The site is on Waterloo township road #47 (paved), approximately five miles to the north of Kitchener and Bridgeport and east of Waterloo. The location is excellent for the Kitchener-Waterloo residents, but is relatively inaccessible from the other cities. This will be remedied upon completion of the Conestoga Parkway. The site is within a twelve-minute drive of the large university residential development.

3. Site potential: According to the site potential map, the location is within the range of 65.4% of the golfers, placing it in a good competitive position.

Physical Capability of the Site

1. Size: Approximately 150 acres of the area are suitable for development of a golf course immediately adjacent to the township access road and leading up to and including part of the wood-lot.

2. Shape: Although not irregular in shape, the large sections of wood-lot and the proximity to the Grand River could provide an excellent starting point for an unusual course design.
CONESTOGA & GRAND RIVER

contour interval = 25 feet

map 6
3. Topography: Topography is ideally suited for construction of a golf course. The south half of the lot is gently undulating, and the north half is slightly more flat. The area is scenic, and the topography would lend itself to unusual course design incorporating many natural hazards.

4. Trees: There is an abundance of mature coniferous and deciduous trees, particularly along the east side of the site. Patches of trees are located throughout the site, particularly at the southern extremities.

5. Water: With the combined resources of the Grand River and ground water, this tract of land would be capable of producing the required amount of water.

6. Soil and drainage: According to the ARDA soil capability map the site has near perfect conditions for the growth of turf, with soil classifications of 17, 3, and 2. Except for those sections immediately adjacent to the river, which would probably not be extensively developed, the location has no drainage problem.

7. Access: Immediate access to the site is by a paved township road. The course, if properly designed, could have at least three holes facing the road. General access is especially good at the present for golfers outside Kitchener-Waterloo.

8. Surrounding land use: The land surrounding the site selected is at present used for mixed farming on three sides, and borders a park on the other.
SITE III

WILLIAMSBURG, WATERLOO COUNTY

Location and Potential

1. Geographic co-ordinates: i) Topographic sheet, Stratford 40 P/7 (east half)
   ii) 400,065

2. Relative location: The site is in Waterloo township approximately three miles southwest of Kitchener, and approximately one mile north of Williamsburg, on the west side of the highway.

3. Site potential: The site potential lies within the range of 62.4% of the market. From the viewpoint of a developer the site is one of high potential for a housing-and-golf-course subdivision.

Physical Capability of the Site

1. Size: Within the general area at least 250 - 300 acres would be potentially suited to a subdivision of housing built around the golf course as a focal point.

2. Shape: For a housing/golf development, the shape of the lot is not as significant, since the design would interpret and integrate the houses along with the fairways.

3. Topography: This site is fairly flat (which would make it easier for the greater amount of construction entailed in building the houses as well as the course itself) but it does have some gently rolling contours. For the purposes of a golf course alone, the rather flat land might detract from the potential,
WILLIAMSBURG

contour interval = 25 feet

scale 1

map 7

POTENTIAL
SITE
but if combined with housing, is probably a desirable feature.

4. Trees: A wide variety of well dispersed, mature stands of trees enhance the land of this selected site. As seen on the map, there are four major groups of trees that could be integrated with a housing/golf subdivision with facility. Trees are abundant along the roadway leading to the site.

5. Water: Ground water supplies appear to be adequate, and the site is within the range of the municipal water system of Kitchener. With these two sources, adequate water for both the course and the housing development presents little problem other than the construction of the water mains.

6. Soil and drainage: The site has excellent turf growing capabilities. The ARDA soil classification is $1^7 2^3_T$, suitable for most agricultural pursuits. Upon visual inspection, the drainage characteristics are excellent, posing no limitation to either golf course or housing development.

7. Access: A first class county road provides the immediate access, leading directly from Kitchener to Williamsburg. The course site is slightly lower than the road, providing a good view of the site.

8. Surrounding land use: Immediately to the south is open mixed farming land with some scattered residential use. Almost immediately north are residential parts of Kitchener. Because of the land's proximity to the city and the characteristics suitable for golf course development, it appears a likely choice of location for a successful combination.
Other sites for golf course development can be found in the general area of Breslau and Doon. One of the best of these would be the Hopewell creek land, adjacent to Highway 7. Both topographic conditions and site potential are ideal here.

The Doon area, because of its proximity to the Macdonald-Cartier Freeway, and to expanded residential districts, appears to have excellent potential. Sites with suitable physical conditions are difficult to find because of the sandy and hilly nature of the topography.

D Conclusions

A descriptive model incorporating the physical characteristics necessary, combined with site potential, has been developed and applied. Three potential sites have been selected using the model, and in the author's view these sites reflect the conditions necessary for a successful golf course. The first two, located near Mosborough Station and Conestoga, are suitable for any type of course development. The third site, located near Williamsburg in Waterloo township near the southwest part of Kitchener is especially suited for a combined golf course and housing subdivision.

Because of its descriptive nature, the model has some limitations, and must be considered only a 'minimum requirements' model. In this respect it does not optimize the site locations but rather states what requirements are necessary for a viable golf course location.
FOOTNOTES


3 Significant at a 95 per cent confidence level.


6 Marion Clawson and Jack Knetsch, *Economics of Outdoor Recreation*, p. 165.


9 National Golf Foundation, *Planning and Building A Golf Course*, p. 25.


11 Ibid.

12 Manager of Brookfield golf and country club, interview held at the club, May 1968.


16 Ibid.
A Summary

Golf provides the participant an opportunity to enjoy outdoor recreation in the company of friends and acquaintances. In addition it provides the golfer a means of testing a highly developed skill in a challenge against himself, his opponents and the natural environment of the course.

From a financial consideration golf is an important activity. In 1967 golf equipment sales accounted for 52.9% of the total athletic and sporting goods sales in the United States. When combined with tournament winnings, course maintenance expenditures, clothing, etc., a conservative estimate of golf-related expenditure is $1 billion. The future prospects for the activity on a national scale seem extremely good in view of the fact that golfers are increasing at a rate of 10% per year. The inclusion of golf courses in a residential development increases the likelihood of housing sales and this form of development is becoming more popular in the United States. It is estimated that over one million people will be living in housing developments associated with golf courses by 1970. This type of complex is now occurring in Ontario and within the study site.

The eighteen courses in the region are generally of a high calibre. The four private country clubs provide a very high quality recreational experience and clubs such as Westmount and Cutten are an asset to their respective communities. The Doon Valley and Rockway
municipal courses, two of the most heavily used facilities, contribute substantially to the recreation system provided by metropolitan Kitchener. The semi-private facilities vary considerably in calibre. Some of the courses are not used frequently enough to realize a profit, because of poor locations relative to the market, and others are not properly managed and accordingly result in a lower quality recreational experience, which is also reflected in the low attendance rates.

Creeping urbanization and the prospects of capital gain provided by increased land values threaten the existence of several courses. The problem is applicable to Guelph in particular, where there is some possibility that three of the region's better courses could be lost to housing and expressway development.

Several problems face the managers of golf courses, and one of the most serious of these is "peaking" - high use during the weekends with substantial decline during the week. In terms of the twenty-seven week season, peaking also occurs during the month of June, followed by a marked drop in attendance, even on weekends, during the summer months of July and August. In September there is an increase in activity once again when the holiday season terminates.

The total demand for golf courses in the region is established by using an income regression model and also by using standards suggested by the RCGA. Although the supply of courses in the study region almost meets the demand, the need for courses in the future is evident. By the year 1981 it is predicted that an optimum number of 44 courses will be required, and a minimum of 26 courses. This represents a total of 6,800 acres of land if the standard of 160 acres for each eighteen-hole golf course is applied.
Golfers are generally derived from the middle and higher income brackets and have above average educational attainments. These factors are also related to the fact that professional and managerial persons were highly represented in the sampling of the golfers. A high number of golfers consider the game their preferred summer outdoor recreation activity; swimming, picnicking, and driving for pleasure are the most preferred other summer activities in which golfers participate (and it is worth noting that these are urban- and socially-oriented activities).

The most significant location factor for golf courses is proximity to the urban market. There should be at least 25,000 people to support each semi-private golf club, and 60,000 for each private club, according to the RCGA. The population should be urban and rural non-farm, as these are the people who participate most frequently. Any location (on a paved road access) within the confines of the triangle formed by Guelph, Galt, and Kitchener-Waterloo should be successful, with locations six to eight miles outside the triangle probably getting a minimal share of the market. This conclusion is reached after developing a potential surface map for the most heavily urbanized part of the study region: the map considers the existing travel behaviour of golfers and the distance which they say they are willing to travel to play golf.

Other location factors are related to the physical site attributes. Slightly undulating, well-drained land with sandy loam soils are considered ideal conditions. In addition, a capacity of 60,000 gallons of water per day (for a nine-hole course) are required to produce a high quality turf.
Pay-as-you-play attendance at individual courses is influenced by site potential, which is essentially a function of distance. It is also influenced by the design and challenge of the course itself, and to a large extent by the excellence of management reflected in the care and investment in the golf course.

B Golf Courses as Open Space

Golf courses play a significant role as part of the total recreation system in urban places, and also provide much needed open space. Open space is much more than land which is left over from development: it is a functional part of the urban environment. It provides a link between man and the natural environment, a means of recharging the senses in an increasingly urban milieu. Kates expresses this fact in terms of open space as a stimulus to sensory pleasure.  

The intrinsic value of open space is increasingly evident to perceptive social critics, who realize the importance of man's communion with nature as one means of moral regeneration. It provides the simple amenities of life such as fresh air, pleasing scenery, and freedom from the congested activity of the urban environment. Above all, "open space is breathing space, a place keyed to the human scale, a visual break in the cityscape...."  

From a planning standpoint, open spaces are functional. They serve to limit boundaries of cities and thus promote the efficient concentration of community facilities, as well as curtailing urban sprawl. They can be used as safety and noise-reducing zones, and as buffer strips between major arteries and residential developments. When integrated into the total community plan they enhance and give greater intensity
to the aesthetic appeal of the city.

Open space contributes to the fundamental principles of conservation. In addition to providing visual relief, it helps control the rapid run-off frequently found in urban places, thus preventing potential flood conditions. It helps to preserve the natural ecological processes pertaining to both natural vegetation and wildlife, which in itself is sufficient reason to justify its existence in urban regions.

Golf courses are open space, and thus fulfil these functions. In particular, they enhance the urban environment from an aesthetic standpoint. The well-groomed greens and fairways, the attractive and varied vegetation, the creeks and natural hazards are integrated into a functional open space environment which is considered an asset by most community members. Golf courses encourage natural ecological processes, thus providing one of the major attractions of the activity itself: the opportunity to observe the environment and to be a part of it. These intangible benefits are not limited to golfers, as they may be enjoyed by residents of the neighbourhood as well as by casual passers-by.

The rapid process of urbanization places the open space provided by golf courses in frequent jeopardy of being assimilated for commercial purposes. Rather than sacrifice the considerable contribution of golf courses to open space and recreation and urban aesthetics, municipalities should make a concerted effort to retain the courses.

C Managerial Recommendations

1. In order to meet recreation requirements for the future, the municipalities should begin a programme of land acquisition. Obtaining land now for recreation ensures that it will be available at reasonable cost,
and that recreation facilities will be properly located in the urban areas. Escalating land costs may soon preclude proper location procedures. It may be necessary for more senior levels of government to assist in the financing of such land acquisition.

2. The municipalities should make every effort to preserve existing golf courses. This can be achieved by purchasing them when they are available or by effecting legislation such as scenic easements, preferential assessments, tax deferrals, or lease-backs.

3. To encourage the private development of golf courses, investment capital should be made more readily available either through the Industrial Development Bank, the Conservation Authorities, or other similar government agencies interested in the provision of recreation land and open space. Capital should also be available for those existing golf courses which would benefit by expansion to eighteen holes.

4. Individuals and organizations owning large tracts of land should be encouraged to develop golf courses and other recreation facilities.

5. Farmers should be encouraged to convert unfarmed land into recreation facilities, especially golf courses, as a means of income.

6. Tourism should be exploited to a greater extent in the region than at present. Tourism resources such as the annual Festival at Stratford, the ethnic individuality of Mennonite communities, the Doon Pioneer Village, the universities, the Music Festival in Guelph — and the golf courses, accommodation and restaurants — should be more fully exploited. This area provides many recreation opportunities which would appeal to people in potential market centres such as Toronto and upper New York State. This type of advertising and co-ordination should logically be carried out by the Regional Tourist Council, and would increase the use
of all facilities.

7. In order to alleviate the problem of decline in use during the week and during the summer months of July and August, the golf course owners should make a concentrated effort to encourage more golf tournaments. This could be achieved by direct contact advertising with local business firms and various social groups. To encourage beginning golfers, a programme of free lessons and rental equipment should be inaugurated, particularly for women.

8. The formation of a regional golf course owners' association is desirable. An organization such as this could encourage and sponsor golf schools to improve knowledge of the game. Courses could be conducted during the winter, including films and instruction, which would do much to encourage new players. The regional owners' association could sponsor inter-club tournaments and competition to a greater extent than exists at present. The association could also provide much more extensive large scale advertising than individual owners could hope to, with the intent of stimulating further interest among non-golfers. This association could easily be connected with the Ontario Golf Association or the RCGA.

9. Many golfers suggest that a portable pass system be inaugurated. This would permit memberships to be used at all the courses in the region adding variety to the golfer's game. It seems logical that a portable pass system could be administered by the regional owners' association.

10. It is recommended that all those courses which experience severe weekend peaking operate on a reserved time basis. This would not only improve the quality of the recreational experience but also smooth the traffic flow at the course.
D Value of this Study

The examination of the golfing system in Waterloo and Wellington counties, using a systems approach, has merit from several points of view. As Ackerman suggests, the overriding goal in Geography is the understanding of the earth-wide man-environment system. This thesis contributes to the comprehension of the recreational subsystem by studying the interaction between the physical resources of the golf course sites and the behavioural aspects of golfers, as well as the characteristics of the activity.

The study also makes some contribution to the methodological techniques currently being utilized in Geography. The actual 'potential surface' technique has not, in the author's knowledge, been applied to recreation problems. The methodology developed for this thesis could lend itself to computerization easily, once the basic behavioural parameters are established.

Although there are numerous methods for establishing recreation site capability, the literature related to resource management is lacking in methods to determine site potential. The model developed in this thesis attempts to overcome the problem by integrating both physical site parameters and behavioural parameters.

A combination of the two concepts permits the evaluation of the proposed golf course site in terms not only of its physical resources (capability) but also of its market potential. The integration of these two sets of parameters is crucial if our urban recreation resources are to be effectively used.

It is a commonly accepted fact that the municipalities should provide recreation facilities for all segments of the population. This
thesis contributes to the planning for these facilities in three ways. By establishing the demand for golf courses in Waterloo and Wellington counties, the municipalities can estimate whether or not they have sufficient golf courses at present, as well as estimate future need. Secondly, it points out that golf courses contribute substantially to the appeal of the cityscape and to community open space requirements. By combining the recreation and open space functions, properly located golf facilities can be a substantial asset to the municipalities, thus enhancing the quality of urban life. The importance of preserving the existing golf courses can not be over-emphasized, and it is hoped that immediate action by the municipality will preserve those courses which are being threatened by encroaching urbanization.

Finally, it is hoped that this thesis adds to the body of knowledge in the sphere of urban recreation Geography. Only by establishing a backlog of empirical studies will a useful compilation of theory evolve.

E Limitations of This Study

It is not clear whether the study of any particular socio-economic system has a great deal of relevance to other socio-economic systems. It is questionable whether the same specific parameters that were found to exist in the Waterloo-Wellington region would be found in Toronto, London or Windsor. A more meaningful model of the golfing system should include other urban areas within Ontario. This would necessitate a complete inventory of all the facilities and a much larger sampling of golfers, beyond the scope of this study.

Evaluation of the golf courses was done on a very subjective basis. Another researcher may have included other variables in deter-
mining the overall quality of the courses. Compared to other regions, the golf courses may be of very poor or of a very high calibre. The need for a more stringent evaluation system is clear.

The estimation of demand has several limitations. The projection of the population is reliable enough, but the assumption that income will remain essentially the same is weak. Unlike the RCGA standards system, the income regression model only indicates the total number of courses, not the types needed. The income regression model should be updated and refined periodically.

In terms of understanding the participation in the activity, more statistically rigorous techniques should be employed. Simple regression analysis shows only correlation, not causation. Techniques such as factor analysis and graph theory which can show the total effect of each variable would be preferable.

F Further Research

1. One of the purposes of this study was to respond to the need for research on urban and user-oriented recreation. Just as a subsystem of the urban recreation system was considered here, research should be conducted into the other subsystems within the urban recreation milieu. Such investigations could very easily determine, among other factors, the recreational preferences of various ethnic groups within urban centres. Again, a systems approach would be useful.

2. It seems that recreation planning of the future will be involved in providing recreation complexes. Research should be conducted into which facilities and activities are compatible, and what are the land and resource requirements needed to provide them. It will be important
to understand how government agencies and private enterprise can work together to establish urban recreation complexes.

3. More refined methodological and research techniques are required. Instruments for measuring the varying character of sites and situations, and rating scales need to be more objective.

4. Urban recreation standards, including golf course standards, need to be re-evaluated if they are to be continually used as basic guidelines for planning. Urban areas vary in quality and character and each city must meet the needs of its "own" citizens. Employing 'rules of thumb' to assess these demands does not appear to be satisfactory.

5. The techniques used to measure recreation demand are in constant need of refinements. The application of graph theory has interesting potential particularly in measuring "incommensurables."

6. Studies should be done on the effect of using land for recreation purposes (as compared with other forms of land use) on land values, neighbourhood development, and their effects on people living in the urban environment. Investigations such as these may re-emphasize the necessity for even more open space and recreation areas.

7. An important topic of research concerns the effect of capital investment on facility use. A comparison study of various other recreation facilities, their use, and the amount of investment required would be useful in suggesting alternative recreation land uses, particularly in areas of the rural-urban fringe.

8. Just as systems for the classification of rural land for recreation capability have been developed, a similar system is needed for urban recreational land. A classification system such as this would include land suitable for park development, open space, scenic attractions, and
G Conclusion

The urban environment is composed of many complex interrelationships, and if it is to evolve in a manner which is both efficient functionally and pleasing to the quality of life, it must be carefully planned.

The present study presents the guidelines to be considered when planning the location of golf facilities. It is hoped that similar studies will be forthcoming in the near future, so that other resources can be planned with this objective. Because of his fundamental concern with the man-land environmental system, the Geographer is in an excellent position to contribute to the planning processes which will shape a meaningful interaction between man and his environment.
FOOTNOTES


GOLF COURSE OWNER–OPERATOR QUESTIONNAIRE

Section A

1. How many years has this course been in operation? __________

2. How long has the present management owned/operated the course? _____

3. Has there been a change in the type of club over the years: i.e. public to private? __________

4. Classification
   a) No. of holes _____9, _____18, Par 3 _____, Par 4 _____.
      __private country club
      __semiprivate/pay-as-you-play
      __strictly pay-as-you-play
      __municipally owned/no membership
      __municipally owned/memberships

5. Description of course
   a) total acreage of property __________.
   b) total acreage for golf course itself __________.
   c) number of acres devoted to parking and other facilities __________.
   d) total yardage of golf course __________.
   e) does course have irrigation system? __________
      greens only _____ whole course __________.

6. Description of facilities offered in conjunction with golf course
   a) snack bar __________
   b) dinner facilities __________
   c) licensed bar __________
   d) curling rink __________
   e) other recreation facilities (specify) __________
   f) golf professional __________
   g) caddies __________
   h) pro shop __________
   i) other __________

7. Does the course encourage organized tournaments?

Section B

Membership and Greens Fees Information (answer if applicable)

A. Semi–private and pay-as-you-play courses:
   Revenue
   1. What are the greens fees a) during the week __________ b) weekend __________
2. Approximately how many rounds are play per season? __________

3. What is an approximation of total revenue from pay-as-you-play patrons? ________________

4. How many members are there? __________

5. How much is the yearly membership fee? $______________

6. Approximately what is the total revenue from the members from above source? $______________

**Expenditures**

1. How much is the total land and building tax for the property? _____

2. What is the land assessment? $______________

3. Approximately how much are the yearly operating costs? $__________

4. How much is the net income? $______________

**B. Private Clubs**

**Revenue**

1. How many members are there currently at this club? _________

2. What are the total annual fees for each member? $______________

3. How are these fees comprised?
   Specify: Item  Cost
            ______  ______
            ______  ______

4. What is the total revenue derived from new members and membership fees? $______________

5. Approximately how much revenue is derived from the pro shop, dining facilities, bar, etc.? $______________

6. Total revenue from ALL SOURCES $______________.

**Expenditures**

1. What is the total land and building tax for the property? ______

2. Approximately how much are the yearly operating costs? ______

3. What is the land assessment? $_______

4. What is the net income? $______________
Section C

General Questions

1. Do you feel that municipalities should take part in the provision of golf facilities? (Explain)

2. Do you have all the business that you can handle? ___ yes ___ no. Comment:

3. How long do people have to wait to tee off on a busy day?

4. What is your busiest period of time? from _____ to _____

5. What is the slackest time? from _____ to _____

6. Do you plan any expansion of the facilities in the near future? Comment:

7. What do you consider the most important three factors in determining the location of a golf course?
   1. ________ 2. ________ 3. ________

8. What are the major advantages of this site? ____________________________

9. What are the major disadvantages, if any? ____________________________

10. Was a professional landscape architect consulted in the design of this course? ___ yes ___ no ___ don't know

11. What do you consider to be the major management problems? (Please explain.)
Appendix B

Golfer Questionnaire

Section A:

1. Over the period of one year how frequently do you play 18 Holes
   of golf?
   - 1 - 5
   - 6 - 10
   - 11 - 15
   - 16 - 20
   - 21 - 25
   - 26 - 30
   - 31 - 35
   - 36 - 40
   - 41 - 45
   - 46 - 50
   - 51 - 55
   - 56 - 60
   - 61 - 65
   - 66 - 70
   - 71 - 75
   More ________ How many? ________

2. If there were more facilities within the area would you play
   more frequently? ______ YES ______ NO

3. At pay as you play golf courses how much are you willing to pay
   for green fees?
   - $1.00
   - $1.50
   - $2.00
   - $2.50
   - $3.00
   - $3.50
   - $4.00
   - $4.50
   - $5.00
   - $5.50
   - $6.00

4. a) Do you belong as member to a golf and country club?
    ______ YES ______ NO
   
   b) What Type? ______ Semi Private ______ Private
   
   c) How long have you been a member? ________ Years.

5. a) If you were to join a semi private club how much would you pay
     for membership fees? $ ________
   
     b) If you were to join a private club how much would you pay for
        membership fees, initiation fees, club shares, etc.? $ ________
        - $50 - $100
        - $150
        - $200
        - $250
        - $300
        - $350
        - $400
        - $450
        - $500
        - $550
        - $600
        - $650
        - $700
        - $750
        - $800
        - $850
        - $900
        - $950
        - $1000
        More ________ state how much.

6. Including green fees, membership fees, social activities, clothing,
   golf equipment, and all other associated activities how much money
   do you spend on golf annually? $ ________
Appendix B cont'd

Section B:

1. How many miles are you willing to travel to play golf?

   1 - 5 miles  26 - 30 miles
   6 - 10      31 - 35
   11 - 15     36 - 40
   16 - 20     41 - 45
   21 - 25     46 - 50
   more? ___ state how far.

2. In relation to TIME, how long would you consider reasonable in
driving to a golf course? ________ minutes.

3. What golf courses in the general area of Waterloo and Wellington
   Counties do you play most frequently?

   List in order of preference:

   _______________ 1st
   _______________ 2nd
   _______________ 3rd
   _______________ 4th
   _______________ 5th

4. What is the distance from your home to the golf course you play
   MOST frequently? ________ miles.

5. When selecting a golf course to play, what factors do you consider
   most important?

   ___ the challenge of the course     ___ difficult     ___ easy
   ___ general condition of greens and fairways
   ___ social atmosphere
   ___ accessibility
   ___ quality of the pro shop etc.
   ___ other _________ specify

6. What factors would you consider in determining a good golf course
   location?

   1.
   2.
   3.
   4.
   5.
Appendix B cont'd

Section C:

1. a) Sex  __ M  __ F
   
b) Age ________
   
c) The name of the municipality or city where you live. ________

2. What type of occupation do you have?
   
   ___ Professional
   ___ Managers, officials
   ___ Sales, Personnel, clerical
   ___ Craftsmen
   ___ Labourer

3. Approximately what is your annual income?
   
   ___ under $3,000
   ___ $3,000 - $4,999
   ___ $5,000 - $7,499
   ___ $7,500 - $9,999
   ___ $10,000 - and over

4. Education:
   
   ___ Grade School
   ___ Some High School
   ___ Completed High School
   ___ Some College
   ___ College Degree

Section D: General Questions

1. Do you feel that there are sufficient golf course facilities within
   this general area?  ________ adequate  ________ not adequate

2. Do you feel that cities should play an active role in the provision
   of golf course facilities?  ________ YES  ________ NO

3. When do you play most of your games?
   
   ________ during the week (Monday - Thursday)
   ________ during the weekend (Friday - Sunday)
   ________ equally divided between week days and weekend.

4. How long does it usually take to play an 18 hole round of golf?
   
   ________ 3 hours  ________ 4 hours  ________ 5 hours  ________ 6 hours.

5. Do you feel that this is too time consuming?  ________ YES  ________ NO
Appendix B cont'd

6. How long are you willing to wait before you are able to tee off?
   _____ 10 minutes
   _____ 20 minutes
   _____ 30 minutes
   _____ 45 minutes
   _____ 60 minutes

7. If you do not feel there are adequate golfing facilities within
   the Waterloo and Wellington counties area check off the types
   you would most like to see developed.
   __ 18 hole private country clubs
   __ 18 hole semi private clubs
   __ 18 hole strictly pay as you play clubs
   __ 9 hole courses
   __ par 3 courses
   __ driving ranges/ miniature golf etc.

8. Rank in order of preference the summer recreation activities that
   you participate in:

   _____ Driving for pleasure
   _____ Picnicing
   _____ Nature Walks
   _____ Boating
   _____ Hiking
   _____ Swimming
   _____ Horseback Riding
   _____ Fishing
   _____ Camping
   _____ Hunting
   _____ Golfing
   _____ Other __________ Specify.
# Appendix C

City of Kitchener

DOON VALLEY GOLF CLUB

-Proposed Operating Budget For 1968-

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## ROCKWAY GOLF AND BOWLING CLUB

### STATEMENT OF REVENUE AND EXPENDITURES

FOR THE YEAR ENDING DECEMBER 31st, 1967

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Profit or Loss on Current Operations To Surplus & Deficit

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### APPENDIX D

**MARKET POTENTIAL SURFACE COMPUTATIONS**

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