

THE NATURE AND DEGREE OF DEMAND
FOR COTTAGING IN EASTERN MANITOBA
TO THE YEAR 1986

BY

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ABSTRACT

The allocation of outdoor recreation resources among competing uses is becoming an increasingly complex and sensitive issue. Cottaging is especially sensitive as it involves the individual appropriation of rights to use recreational land on a long term basis.

In order for rational planning to occur and so that resources may be distributed equitably, current and future demand for the various recreational activities must be understood. This research has attempted to determine the nature and degree of demand for cottaging in eastern Manitoba to the year 1986.

Municipal assessment records were utilized to identify trends in several aspects of cottaging between 1961 and 1976. These trends were projected to 1986 and were assessed in relation to responses to a multi-stage questionnaire on the future of cottage development in Manitoba.

The major findings are; that the demand for cottaging has increased significantly in recent years and this trend is expected to continue through 1986, cottage size and cottage lot size are steadily increasing, and that the Winnipeg River area is attracting an increasing proportion of cottagers at the expense of sites along the shore of Lake Winnipeg.

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CHAPTER 1: INTRODUCTION

1.1 The Context

In Manitoba, cottages provide a substantial portion of the accommodation facilities available to outdoor recreation enthusiasts. A survey of 1,000 Winnipeg households in 1971 determined the number of visitor days to Lake Winnipeg, by accommodation type, for the period May 1 to September 30, 1971. The breakdown given in Table 1.1 displays this fact clearly. In addition to the direct share of 52.55 percent, it is highly probable that many of the visitor days attributed to the Friends and Relatives category were spent at cottages.

A similar pattern was found for Whiteshell Provincial Park in 1973. The results from a visitor survey conducted by the Research and Data Services Branch, Manitoba Department of Tourism, Recreation and Cultural Affairs are displayed in Table 1.2.

The demand for outdoor recreation by Manitobans has been growing steadily in response to increasing levels of urbanization, leisure time, disposable income, mobility and population. Concomitant with this will be an increasing demand for cottaging and other accommodation facilities. A review of

Table 1.1: Lake Winnipeg Visitor Use by Accommodation
Type May 1 - September 30, 1971

Accommodation Type	Visitor Days	
	Number	Percent
Cottage	1,217,189	52.55
Camping	378,546	16.34
Friends and Relatives	421,367	18.19
Day Visits	281,851	12.17
Commercial	17,130	.75
Total	2,316,083	100.00

Source: Lake Winnipeg Recreational Demand Study,
P.M. Associates Ltd., Winnipeg, Manitoba, 1972.

Table 1.2: Whiteshell Visitors Use by
Accommodation Type, 1973

Accommodation Type	Visitor Days	
	Number	Percent
Cottage	774,868	46.39
Campground	661,950	39.63
Day Use	92,516	5.54
Commercial	140,999	8.44
Total	1,670,333	100.00

Source: Research and Data Services Branch, Manitoba Department
of Tourism, Recreation and Cultural Affairs, 1977.

the records of applications for cottage lots on Crown lands appears to support this conclusion. In the Eastern Region these applications have consistently outnumbered the lots available. (Table 1.3)

These figures do not represent actual demand. A 1975 study established that Crown land lots were underpriced relative to lots on private lands. Table 1.4 compares the 1977 annual lease fees with the fees that would be charged if they were calculated at 5% of the imputed market value of the lot.¹

It is the policy of the Provincial Government of Manitoba to make cottage lots on Crown land available at a non-subsidized rate.² If this is true then the non-subsidized rate will be that which prevails in the private market. True demand will be the quantity demanded at the price prevailing in the private market at any point in time.

1.2 The Problem

The number of applications for cottage lots on Crown land cannot be used to justify the planning of additional cottage lot subdivisions. Undoubtedly demand exists but the nature and degree of this demand is unknown at the present time. In order for the Parks Branch to rationally plan the development of new subdivisions and to optimize the allocation of outdoor recreation resources among competing uses the true nature and degree of demand for cottaging must be determined. To date, there has been little research done in this area.

Table 1.3: New Subdivisions and Applications of Cottage
Lots on Crown Lands, 1975-77^a

	Lot Available	Applications	Accepted ^b
<u>EASTERN REGION</u>			
1975 - Wanipigow	38	128	29
1976 - Black's Point	81	304	81
- Misc. ^c	21	174	21
1977 - Black's Point	62	201	62
<u>WESTERN REGION</u>			
1975-76 - Benyk's Point	28	11	6
<u>NORTHERN REGION</u>			
1976 - Athapapuskow & Manistikwan	31	15	8
- Rocky Lake	24	67	24
- Setting Lake	15	52	15
1977 - Rocky Lake	51	65	51

Source: D. Willacy, Parks Branch, November 12, 1976.

A. Jackett, Parks Branch, July 8, 1977.

^a To July 1, 1977.

^b Allocated via the lottery system.

^c Includes 12 cottage lots located at Beaver Creek, Lake St. Andrews, Lake St. George, Leaside Beach and Pinawa Bay, and 9 cottage lots located at Wanipigow which were not allocated in 1975.

Table 1.4: Comparison of 1977 Lease Fee Structure and Rates at 5% of Imputed Market Value for Cottages Accessible by Road in Eastern Region

Lot Location	Current Fees (1977)	Fee at 5% of Imputed Market Value
Lakeshore	\$75.00	\$267.00
Backtier	\$50.00	\$220.00

Source: Research and Data Services Branch, Department of Tourism, Recreation and Cultural Affairs, 1977.

In order to facilitate the planning of cottage development on Crown land this research proposes to determine the nature and degree of demand for cottaging in a selected area of Eastern Manitoba to the year 1986. For the purposes of this study the nature and degree of demand is understood to encompass:

1. Quantity demand - the sum of:
 - the number of cottages built on privately owned land in the selected area
 - the number of cottages available as a result of turnover in private stock in the selected area
2. Distribution - the location, within the selected area, of new cottages that are or will be built on privately owned land.
3. Ownership - the location of the principal residence of cottage owners.
4. Cottage Building Size - the average size of new cottages that are or will be built in the selected area.
5. Cottage Lot Size - the average size of new cottage lots in the selected area.

6. Cottage Quality - the average level of quality of new cottages in the selected area.

These aspects were chosen because they are directly relevant to Crown cottage development, planning, and policy. In addition, there has been little or no previous research on these aspects in Manitoba.

The problem will be resolved by identifying and projecting trends in private cottage development and by evaluating these projections in relation to selected factors that are most likely to influence the trends.

1.3 The Assumptions

1. The first assumption is that the demand for cottaging in the study area will continue to the year 1986.
2. The second assumption is that various factors interact to shape the nature and degree of the demand for cottaging and will continue to do so.
3. The third assumption is that trends in private cottage development reflect public tastes and preferences and are therefore an appropriate reference for the future planning of Crown cottage development.

1.4 The Delimitations

1. This research will not attempt to determine the nature and degree of demand for cottaging beyond the year 1986.
2. This research will not attempt to determine the nature and degree of demand for cottaging outside of the chosen study area.
3. This research will not attempt to recommend policy or planning alternatives for Crown cottage development.

1.5 The Study Area

The area selected for study is illustrated in Figure 1.1.

This area is comprised of the following units:

- Unit No. 1. R.M. of Bifrost
2. R.M. of Gimli
 3. Town of Gimli
 4. R.M. of St. Andrew
 5. Town of Winnipeg Beach
 6. Village of Dunnottar
 7. R.M. of St. Clements
 8. R.M. of Victoria Beach
 9. R.M. of Lac Du Bonnet

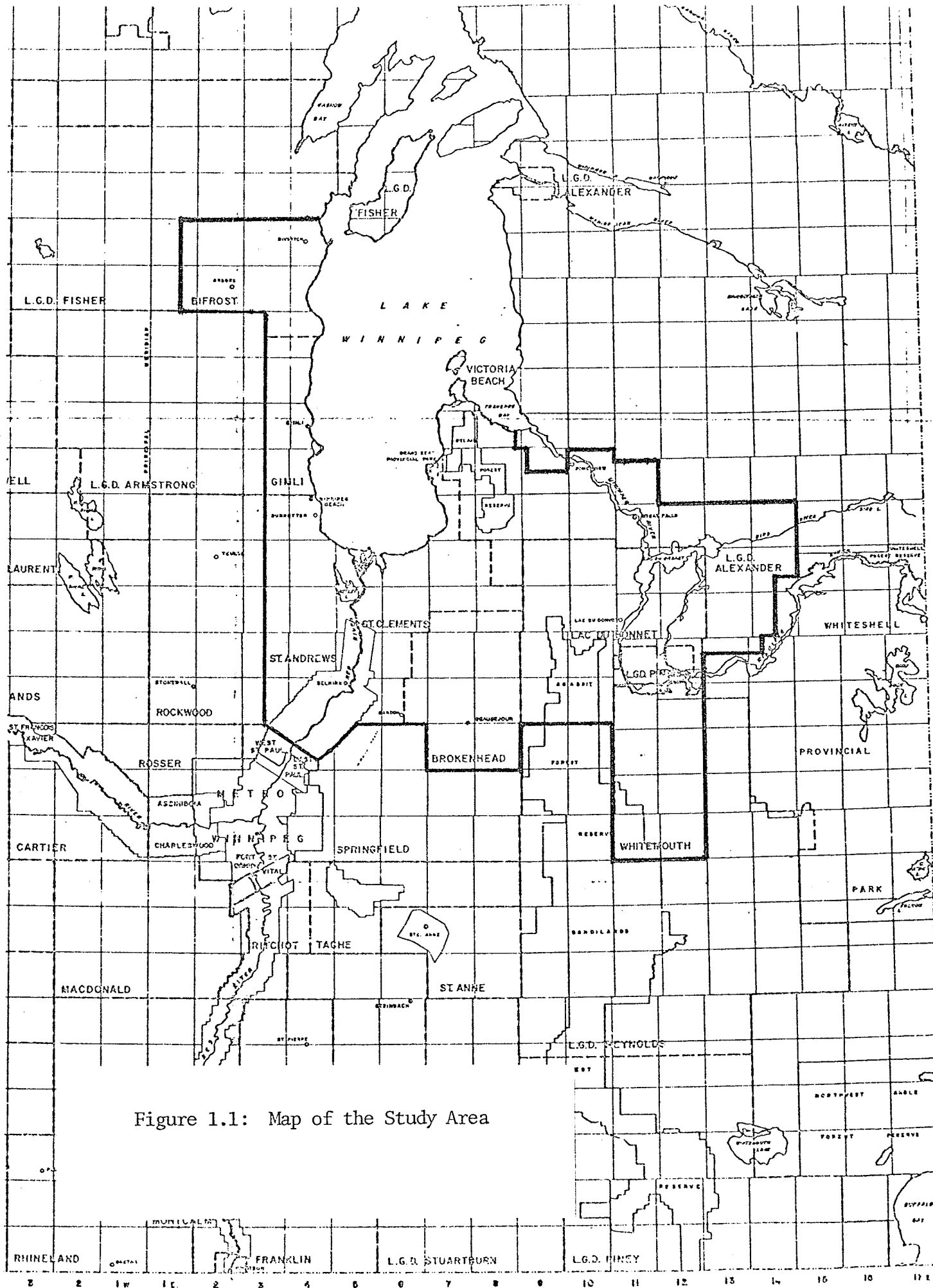


Figure 1.1: Map of the Study Area

10. L.G.D. of Alexander
11. R.M. of Brokenhead
12. R.M. of Whitemouth

Initially, the L.G.D. of Pinawa and the Village of Lac Du Bonnet were to be included in the Study Area. However, an insufficient number of observations in these two units warranted their exclusion from further analysis. The Town of Selkirk was not considered by this study.

The boundaries of this study area were determined by the following considerations:

- 1) The area encompassed the majority of private cottage developments in eastern Manitoba.
- 2) The area was the maximum size that could be adequately considered given the time and resource limitations of the researcher.

1.6 Definitions of Terms and Abbreviations

Cottage: A cottage is a permanently constructed dwelling that is used primarily for recreation at least part of the year. For the purposes of this study any dwelling listed on the municipal property tax rolls and classified as Code 10, Type 91 or 92 (1957 Manual) or Code 10, 12 or 14 (1967 Manual) and any dwelling located on a lot

leased by the Crown for vacation home purposes will be considered a cottage.

Field Assessment Sheet: A Field Assessment Sheet is the form an Assessor uses to collect information on a particular piece of property in order to determine its assessed value.

Abbreviation - F.A.S.

Sales Assessment Records: Sales Assessment Records are computer listings of all property transactions within the Province of Manitoba.

Abbreviation - S.A.R.

M.A.B.: Municipal Assessment Branch, Manitoba Department of Municipal Affairs.

R.M.: Rural Municipality

L.G.D.: Local Government District

Footnotes

1. The 5% level appears to represent a fair and equitable return to the Province for the use of Crown lands for vacation home purposes. Bank lending rates are about 2 1/2 times this amount but cottages are primarily used for only 3-6 months of any year.
2. E. Romanowski, "A Report on the Imputed Land Value of Cottage Lots on Crown Lands", Internal Report No. 70, Research and Data Services Branch, Manitoba Department of Tourism, Recreation and Cultural Affairs, 1975.

CHAPTER 2: REVIEW OF THE RELATED LITERATURE

2.1 Previous Research

Previous research on cottages in Manitoba has dwelt primarily on the socio-economic characteristics of cottage owners and on the use made of cottages. One of the first Manitoba cottage studies was conducted by E.T. Oswald in 1967. He discovered that:

The cottaging population was composed mostly of urban families of middle to upper income, with professional or managerial occupations, and the head of the house was usually middle aged or older. The main benefit derived from cottaging was relaxation from the mental stresses of their everyday life. The most popular passtime of the cottagers was water activities, especially boating which was probably related to fishing and family outings for the most part.¹

These findings were supported by the 1973 "Whiteshell Provincial Park Visitor Use Study" which found that:

The typical seasonal cottagers are Winnipeg residents who have higher family incomes and are older than the Manitoba population as a whole.²

2.2 Cottage Demand

No one study has dealt specifically with current or future demand for cottages. Several studies have, however, made reference to the fact that this demand is growing.

The "Recreation Study, West Shore of Lake Winnipeg, Netley Marsh to Hecla Island" (1966) discovered that:

In spite of the growing demand as reflected by the number of requests presently on file with the Department of Lands and Forests for summer cottage land-leases in Provincial Parks, it is apparent, that the Provincial Parks are rapidly becoming filled to capacity with leased sites; that the Western Shore of Lake Winnipeg is not among the competition for summer cottages or land leases; and that if conditions in the project area continue, a tremendous effort to sell existing cottages will result in a flooding of the cottage market with unwanted sites and cottages. Analysis of summer cottage advertising has indicated, that while prices for the more popular areas to the east of Winnipeg have steadily risen during the past four years, those in the Project Area have fallen.³

In the "Summary of Seasonal Home Reports for Three of the Major Study Areas: Lac Du Bonnet, Moose Lake, Turtle Mountain", it was stated that:

The actual demand for seasonal homes can only be roughly estimated, but the high occupancy rates, increasing rental fees and increase in lot bids ensures that a demand exists. Nichol in the Interlake Recreational Study undertaken for the F.R.E.D. Programme suggests that a minimum firm demand estimate would be 1,000 seasonal homes. He further concludes that a minimum estimate for future demand would be 5,000 units by the year 1980.⁴

"The Winnipeg Recreation and Travel Survey" (1973), using the same data base as the Lake Winnipeg Recreation Demand Study, anticipated that cottages would experience a rapid annual growth rate of between 15 to 25 per cent.⁵

Most recently, a study entitled "The Projected Recreational Use and Demand of Nopiming Provincial Park" stated that:

The public demand in cottage lots has not been met. There is substantial pressure in existence for cottage subdivisions in the newly established Nopiming Park.⁶

The pressure referred to in this quote was the number of applications being received for new lots in Crown land subdivisions. It has been shown that much of this apparent demand may be attributable to the price differential that exists between Crown and private cottage lots.

2.3 Cottage Supply

The supply of cottages and lots arises from several sources. The first of these is lots in Crown land subdivisions. They are developed by the Parks Branch specifically for vacation home purposes and are located both within and outside of Provincial Parks. In recent years the number of these lots has increased slowly. (Table 2.1)

Table 2.1: Number of Cottages Under the Jurisdiction of Department of Tourism, Recreation and Cultural Affairs^a

Year	Cottages
1967	4,404
1968	4,480
1969	4,481
1970	4,502
1971	4,566
1972	4,576
1973	4,586
1974	5,485 ^b
1975	5,562
1976	5,764
1977	5,900

^a Source: Parks Branch, Vacation Home Lots Summaries, 1967-1977.

^b 833 cottages were transferred from Department of Mines and Resources.

A second source of cottage lots is private subdivisions. These range from small (5-10 lots) to large (70 lots plus) developments. The increasing importance of this source can be inferred from Table 2.2. Undoubtedly, private subdivisions are a major source of supply.

Additional sources arise from turnover in the existing cottage stock. The turnover rate for cottages on Crown land is about 5 per cent annually making available approximately 250 cottages per year. (Table 2.3) The turnover rate in the private sector is about 4 per cent. Assuming there are 10,000 private cottages in Manitoba this would make 400 cottages available on an annual basis.

The estimated number of households with vacation homes in Manitoba is 24,000.⁷ Assuming 6,000 of these are located on Crown lands this would leave 18,000 cottages on private lands. This research suggests this estimate is too great. There are approximately 7,000 private cottages in the Study Area and probably no more than 3,000 in the rest of the Province. In N.W. Ontario there are perhaps 3,000-5,000 cottages owned by Manitobans. In total, a more likely estimate would be 20,000 rather than 24,000.

Table 2.2: Summary of Registered Plans of Subdivisions for
Cottage Lots in the LGD of Alexander from
January 1, 1964 to June 30, 1974

	1964-69	1970	1971	1972	1973	1974	Total
No. of Plans	4	1	1	2	5	5	18
No. of Acres	25.7	5	4	30	41.6	66.3	172.6
No. of Lots	61	11	12	80	71	130	365
No. of Lots Developed ^a	30	6	10	32	16	13	107

Source: "Land Division in Manitoba, Study of Selected Towns and Municipalities",
Municipal Planning Branch, Manitoba Department of Municipal Affairs, 1976.

^a As of October 29, 1974.

Table 2.3: Number of Assignments^a of Cottage Lots on
Crown Land and Turnover Rate, 1970-76

Year	Assignments	Turnover Rate (%)
1970	242	5.38
1971	267	5.85
1972	270	5.90
1973	255	5.56
1974	246	5.29
1975	347	6.24
1976 (November)	219	3.80
Total: 1,846		Average: 5.4%

Source: D. Willacy, Parks Branch, November 12, 1976.

^a Transfer by sale only. The list does not include changes via death, change of name by marriage, or lots transferred from husband to wife or vice versa.

Footnotes

1. E.T. Oswald, "An Analysis of Summer Cottaging in Manitoba", Canada Department of Forestry and Rural Development, 1968, p. 69.
2. Manitoba Department of Tourism, Recreation and Cultural Affairs, "Whiteshell Provincial Park Visitor Use Study: 1973", (in process), Research and Data Services Branch, p. 45.
3. Manitoba Department of Industry and Commerce, "Recreation Study, West Shore of Lake Winnipeg, Netley Marsh to Hecla Island", 1966, p. 45.
4. Manitoba Department of Tourism, Recreation and Cultural Affairs, "Summary of Seasonal Home Reports for Three of the Major Study Areas: Lac du Bonnet, Moose Lake, Turtle Mountain", Parks Branch, 1969, p. 1.
5. N. Nixon, "Present Ownership and Expected Ownership of Outdoor Recreation Equipment Among Winnipeg Residents", Report No. 119, Research and Data Services Branch, Manitoba Department of Tourism, Recreation and Cultural Affairs, 1972, p. iii.
6. D. Wang, "The Projected Recreational Use and Demand of Nopiming Provincial Park", Internal Report No. 109, Research and Data Services Branch, Manitoba Department of Tourism, Recreation and Cultural Affairs, 1977, p. vii.
7. Statistics Canada, Household Facilities and Equipment: May, 1976, Catalogue 64-202 Annual, Ottawa, 1976.

CHAPTER 3: RESEARCH DESIGN

3.1 The Research Methods

The importance of determining future demand for outdoor recreation "for any sort of reasonable planning" was aptly pointed out by J.L. Knetsch in 1969.¹ This research recognizes that principle and will be based upon techniques currently in use for forecasting purposes, Time Series Analysis and the Delphi Technique.

Time Series Analysis involves the measurement of the behavior of a variable over intervals of time.

The purpose of this technique is to understand past trends in the behavior of a particular phenomenon of interest. Often these trends are extrapolated in order to forecast future behavior of the phenomenon. In turn these extrapolations can be used in planning and decision making.²

Extrapolating past trends can be accomplished in two ways. The first method requires the preparation of a scattergram. Units of time, the independent variable, are scaled along the horizontal axis of the graph and units for the dependent variable are scaled along the vertical axis. The values of the dependent variable, observed at successive points in time, are then plotted. The trend line is derived by drawing a line which attempts to minimize the total vertical divergence of the plotted values from this line. The trend line can be extended or

extrapolated for future time periods.

The second method is similar to the first but is accomplished mathematically. The trend line that best fits the observed data is the one that minimizes the sum of the squared, vertical deviations from the line. This line is known as the regression line and can be represented by the equation:

$$\hat{Y} = a + bX$$

where \hat{Y} is the predicted value of the dependent variable Y for a given value of the independent variable X and a and b are constants. The values of a and b are derived from the following formulae:

$$b = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sum (X_i - \bar{X})^2}$$

$$a = \bar{Y} - b\bar{X}$$

where

X_i = the value of the independent variable

Y_i = the corresponding value of the dependent variable

\bar{X} = mean value of the independent variables

\bar{Y} = mean value of the dependent variables

These formulae can be written more simply if one lets

$$x = X_i - \bar{X} \text{ and } y = Y_i - \bar{Y}.$$

$$\begin{aligned}
 \text{Thus:} \quad \sum (X_i - \bar{X})^2 &= \sum x^2 \\
 \sum (Y_i - \bar{Y})^2 &= \sum y^2 \\
 \sum (X_i - \bar{X})(Y_i - \bar{Y}) &= \sum xy \\
 b &= \frac{\sum xy}{\sum x^2}
 \end{aligned}$$

This technique is known as the method of least squares and is the procedure employed in this research.

The equation for the regression line of Y on X represents the relationship between these variables. The strength of this relationship is denoted by the coefficient of determination, r^2 . The value of this statistic, ranging from a minimum of 0 to a maximum of 1, indicates the proportion of the variance in Y attributable to X. The formula for deriving r^2 is:

$$r^2 = \frac{b \sum xy}{\sum y^2}$$

The absolute amount of error associated with any prediction from the equation $\hat{Y} = a + bX$ is denoted by the standard error of the estimate, S E E. This statistic is simply the standard deviation of the actual Y values from the predicted \hat{Y} values and is derived by the formula:

$$S E E = \sqrt{\frac{\sum y^2 - b \sum xy}{n - 2}}$$

where n = number of paired observations of X and Y.

The preceding statistics will be supplied whenever projections are made in this research.

The principal weakness of Time Series Analysis is that it requires the assumption that all factors which interact to produce a particular pattern of behavior in a variable will continue to do so, without change, into the future. This assumption may not always be valid. Past conditions can change and new factors or developments may arise to influence variable behavior.

Under ideal conditions, multiple regression analysis would be employed. This method defines the behavior of a dependent variable as a function of a set of independent variables. These independent variables must first be selected or devised and measurements must be obtained. Limitations of data, time and resources precluded the use of this technique. Instead, behavior of dependent variables was defined as a function of the all inclusive independent variable, time.

In order to partially compensate for this limitation most researchers will qualify their projections by referring to current or potential factors that would influence the future behavior of a variable. In this research a multi-stage questionnaire based upon the Delphi Technique is used to expand and to systematize this procedure.

The Delphi technique is used to forecast the occurrence of specified long-term and short-term events and to generate estimates of the probability of specified conditions obtaining at future times. Another purpose is to obtain information on highly subjective or qualitative factors, such as values or perceptions. Unlike a conventional survey, Delphi technique enables feedback of survey results and additional information is used to improve the response of participants.³

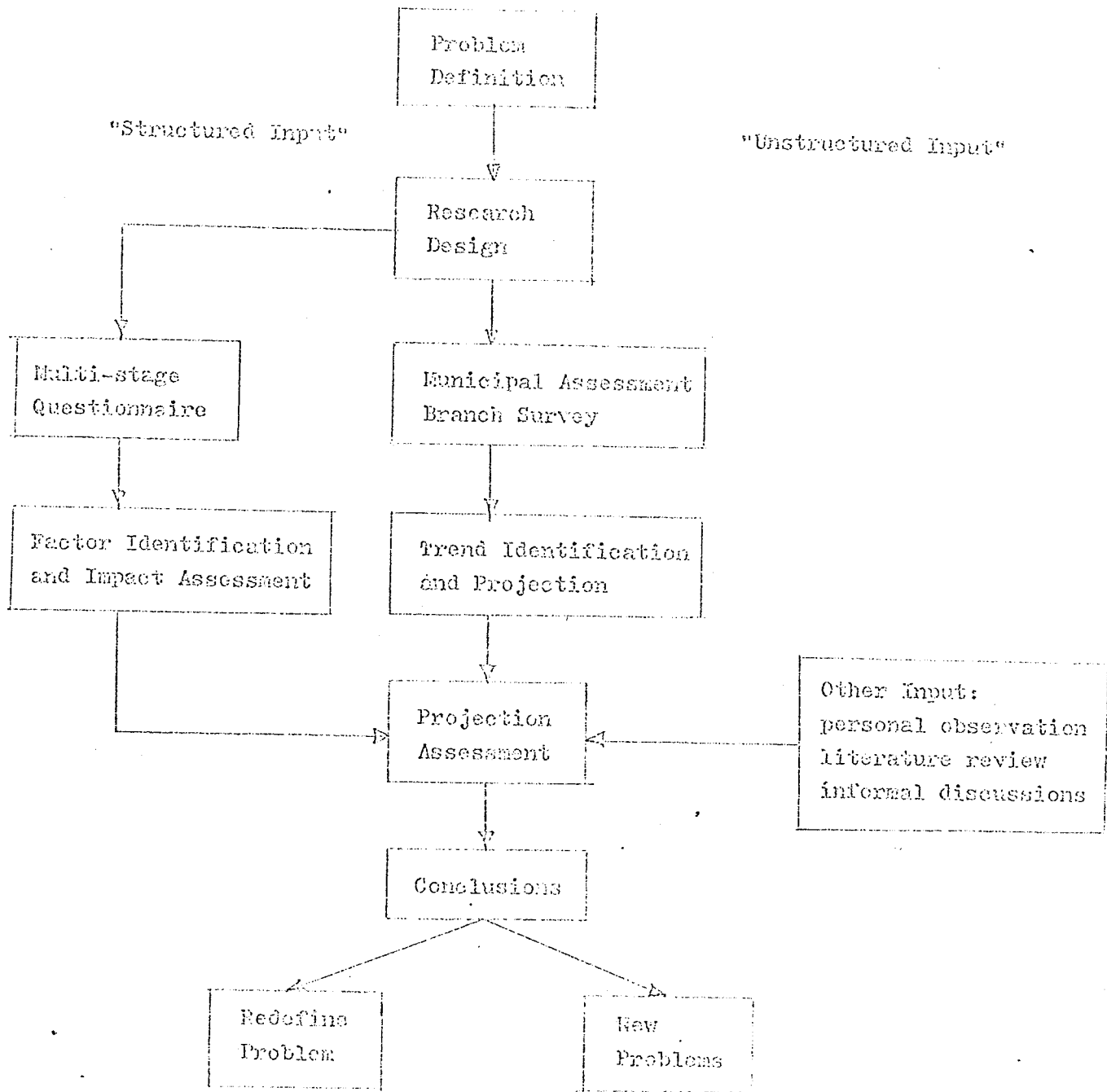
The identification and evaluation of the impact of present or future factors on the nature and degree of demand for cottaging was not considered amenable to rigorous quantitative analysis. The approach taken in this research, admittedly qualitative, permitted the systematic input of a wide body of expert opinion to the problem. This is illustrated in Figure 3.1.

Potential participants were selected on the basis of the experience related to cottage development, planning, and administration or their academic qualifications and interest. These people were approached, by phone or in-person, and the goals and procedures were briefly outlined. Twenty-seven people, a cross-section of business, government and academic interests, agreed to participate and these comprised the Relevant Expert group for this research.

3.2 The Data Sources

The data required for this research was obtained from two primary sources, a survey of Municipal Assessment Branch files and records, and a multi-stage questionnaire on the future

Figure 3.1 Stages in the Research Process



of cottage development. The Municipal Assessment Branch survey was designed and carried out by the author with two objectives. These were: 1) to provide an inventory and data base for all cottages in the Study Area and 2) to provide the necessary data for this specific research problem. The multi-stage questionnaire was designed and administered solely for the purposes of this research problem.

3.3 Municipal Assessment Branch Survey

The Location of the Data

The raw data for this research were located in the Field Assessment Sheet files and in the Sales Assessment Records of the Municipal Assessment Branch, Department of Municipal Affairs. The F.A.S. files for all units of the study area except No. 12, the R.M. of Whitemouth, are held in the M.A.B. regional office, 382 Main Street, Selkirk, Manitoba. The F.A.S. files for the R.M. of Whitemouth are held in the M.A.B. regional office, P.O. Box 370, Steinbach, Manitoba. The S.A.R.'s are held in the main office of the M.A.B., 13th Floor, Woodsworth Building, 405 Broadway Avenue, Winnipeg, Manitoba.

Prior to the commencement of this study verbal permission for access to this data was obtained from Mr. J. Tease, General Supervisor, M.A.B.

Data Collection Categories

Due to the nature of the data sources, this research was divided into two sectors, Cottage Population, comprised of data from F.A.S. files and Cottage Sales, comprised of data from S.A.R.'s.

The categories for which data was collected from F.A.S. files are:

- Unit: R.M., L.G.D., Town or Village, Nos. 1-12
corresponding to the listing in subsection 1.5.
- Land
Ownership: Crown or Private.
- Age: The year in which the cottage was built.
Categories are Pre 1961, 1961, 1962, 1976.
- Plan No.: Number of the Registered Plan of Subdivision in
which cottage is located.
- Land
Assessment: The current (1976) assessed value of the lot or
property on which the cottage is located, in
dollars.
- Building
Assessment: The current (1976) assessed value of the cottage
excluding additions, in dollars.
- Building Size: The total area of the cottage at date of
construction, including decks and verandas but
excluding patios and later additions, in ft.².

Lot Size: The total area of the lot or property on which the cottage is located, in ft.².

Owner's Residence Location: The address of the owner. (2) Winnipeg, (3) Other Manitoba, (4) Other Canadian and (5) Foreign.

The variables for which data was collected from S.A.R.'s are:

Unit: Same as Preceding

Plan No.: Same as Preceding

Land Assessment: The assessed value of the lot or property sold, at date of sale, in dollars.

Building Assessment: The assessed value of all buildings located on the lot or property at date of sale, in dollars.

Consideration: The total selling price of the cottage and lot, in dollars.

Sales Year: The year in which the sale was recorded, 1971, 1972, 1976.

Sales Month: The month in which the sale was recorded, (1) Jan. ... (12) December.

Data Collection and Treatment

The raw data located in F.A.S. files was transferred, and, where necessary, coded onto a data collection form designed for that purpose. A similar process was undertaken for the data located in the S.A.R.'s. The information collected on these forms was transferred to computer tape and processed by S.P.S.S. sub-programs CROSSTAB and CROSSBREAK. The program is displayed in Appendix A.

Criteria for the Admissability of the Data

The data collected on Cottage Population and Cottage Sales was subjected to certain criteria before it was admitted for analysis. This standardization process was necessary because of occasional irregularities in the raw data. The criteria, the consequences of employing the criteria, and the general reliability of the data are discussed below.

The criteria for determining whether any particular dwelling unit could be classed as a cottage for the purposes of this study were supplied by the coding system of the M.A.B. Occasionally, dwelling units with different codes appeared to be in use as cottages. These cases included mobile homes, cabooses and older dwellings that had been moved in. There was no accurate method for classing these as cottages and therefore they were excluded from analysis. A check in the R.M. of St. Clements, (Unit No.7) found that the number of these doubtful cases was less than 2% of the total number of cottages recorded. The totals for cottages in all units may therefore be slightly conservative.

The data collected under the category Age did not allow the identification of replacement cottages built to replace deteriorated or damaged cottages. Although additions to cottage stock were not differentiated from replacements of the existing stock there is no problem of double counting. This is avoided because the F.A.S. files record only the current stock as of July, 1976.

The criteria for the category Building Size was the area of the cottage when it was originally constructed, including decks and verandas but excluding patios and later additions. In the case of older cottages, particularly those built prior to 1961, additions

were not always indicated on the field sheets. If no addition was indicated then the current area of the cottage was taken as the original area. This may have contributed to an upward bias in average cottage size for earlier years.

The criteria for the category Lot Size was the area of the property on which the cottage was located. In several cases it was evident that a cottage owner held title to additional vacant lots in the immediate vicinity of his cottage. These were not always contiguous with the property on which his cottage was located and when they were it was not possible to determine if they served solely to increase the cottage lot area. The decision was made to exclude these additional lots from analysis. These situations were so few in relation to the totals it is unlikely that this decision had any appreciable effect.

The criteria for the category Owner's Residence Location was the address listed on the F.A.S. It became evident during data collection that Category 1, Permanent Residence Cottage, could not be reliably determined from the address. It was decided to reclassify all Category 1 cottages as Category 3, Other Manitoba and Permanent Residence Cottage was dropped from the analysis.

Criteria also had to be established for recording Cottage Sales data from the S.A.R.'s. These records listed all property transactions regardless of type. This included transfers within

families where the consideration was nominal, (i.e. \$1.00). In order to distinguish these transactions valid sales were defined as those in which the consideration exceeds the total assessed value. Sales not meeting this criteria were excluded from the analysis. A summary of transactions is displayed in Table 3.1.

The data for the remaining variables was consistently reliable and required no further standardization.

Assessment values are not strictly comparable between municipalities. This arises from the fact that complete reassessments of all real property occur in different years for different units. The year in which the assessments were first used for the various units in the Study Area are given below.

<u>Unit</u>	<u>Year</u>
1) R.M. of Bifrost	1972
2) R.M. of Gimli	1971
3) Town of Gimli	1977
4) R.M. of St. Andrews	1970
5) Town of Winnipeg Beach	1972
6) Village of Dunnottar	1972
7) R.M. of St. Clements	1970
8) R.M. of Victoria Beach	1970
9) R.M. of Lac du Bonnet	1973

Table 3.1: Summary of Valid and Non Valid Transactions, 1971-1976

Unit	1971		1972		1973		1974		1975		1976		Total
	Valid	Not Valid	Valid	Not Valid	Valid	Not Valid	Valid	Not Valid	Valid	Not Valid	Valid	Not Valid	
R.M. of Bifrost	0	0	1	4	1	6	1	0	2	1	3	0	19
R.M. of Gimli	21	9	42	20	47	20	44	12	33	7	56	4	315
Town of Gimli	2	0	5	0	6	2	5	1	2	2	4	1	30
R.M. of St. Andrews	17	1	12	1	19	4	9	6	18	9	11	0	107
Town of Winnipeg Beach	11	5	65	17	72	5	71	10	45	16	48	11	376
Village of Dunnottar	57	7	33	23	40	5	34	13	59	7	44	10	332
R.M. of St. Clements	24	12	45	16	45	7	54	11	32	11	33	7	297
R.M. of Victoria Beach	29	4	44	22	24	32	26	6	27	12	37	6	269
R.M. of Lac du Bonnet	8	1	6	8	9	6	16	0	14	3	14	0	85
L.G.D. of Alexander	4	4	18	10	23	8	17	12	19	13	29	7	164
R.M. of Brokenhead	1	0	0	1	0	0	1	0	0	0	0	0	3
R.M. of Whitemouth	2	2	2	0	1	1	1	0	0	0	0	1	10
Total	176	45	273	122	287	96	279	71	251	81	279	47	2,007

(cont'd)

	<u>Unit</u>	<u>Year</u>
10)	L.G.D. of Alexander	1973
11)	R.M. of Brokenhead	1972
12)	R.M. of Whitemouth	1972

Additional Categories

The computer program was designed to produce a number of additional categories from the available data. The categories created for Cottage Population are:

Total
Assessment: Building Assessment plus Land Assessment for each cottage, in dollars.

Building
Assessment/
Building Size: Building Assessment divided by Building Size for each cottage, in $\$/ft^2$.

The categories created for Cottage Sales are:

Total
Assessment: Building Assessment plus Land Assessment for each cottage sold, in dollars.

Assessment-
Sales Ratio: Total Assessment divided by Consideration for each cottage sold.

3.4 The Multi-stage Questionnaire

This questionnaire was designed and conducted to provide the data necessary for resolving this research problem. Stages 1 and 2 were directed towards identifying and ranking the major factors that would influence the nature and degree of demand for cottaging to the year 1986. Stages 3 and 4 were directed towards evaluating the impact these factors would have on cottaging. An outline of the process is displayed in Table 3.2.

The participant group comprised 27 persons, representing a cross section of business, government, and academic interests. Of this number, 20 completed Stage 1, 19 completed Stage 2, 16 completed Stage 3 and 16 completed Stage 4.⁴ The participation rate was gratifying considering the nature of the questions. These required careful consideration and evaluation on the part of the participants and were thus apt to be regarded as an unwelcome burden.

The general procedure that was employed likely had an effect on the number of responses received. In Stage 1, the questions were mailed out and responses were to be completed and returned by mail. Despite follow-up phone calls only 20 responses were obtained. Thereafter, the questions were structured so as to allow responses to be obtained by telephone. A specific date was emphasized in the covering letter as to when collection

Table 3.2: Process Outline^a for Multi-stage Questionnaire

<u>Activity</u>	<u>Data Completed</u>
1. Develop Delphi task	Oct. 24, 1977
2. Select and contact participants	Oct. 28
3. Prepare and mail Stage 1	Oct. 31
4. Follow-up telephone calls	Nov. 25
5. Analysis of Stage 1 responses	Dec. 12
6. Prepare and mail Stage 2	Dec. 14
7. Collect responses by telephone	Jan. 27, 1978
8. Analysis of responses	Jan. 28
9. Prepare and mail Stage 3	Jan. 30
10. Collect responses by telephone	Feb. 16
11. Analysis of responses	Feb. 18
12. Prepare and mail Stage 4	Feb. 20
13. Collect responses by telephone	Mar. 10
14. Analysis of responses	Mar. 24
15. Prepare and mail summary report to participants.	Apr. 25
Elapsed time	184 days

^aFrom Group Techniques for Program Planning: A Guide to Nominal Group and Delphi Processes, Delbecq, A.L. Van de Ven, A.H., Gustafson, P.H., Scott, Foreseman and Co., Glenview, Ill., 1975.

would begin. This modification appreciably improved the participation rate in subsequent stages.

Stage One

In Stage 1 the package displayed in Appendix B, Figures 1-3, was sent out to each participant. The initial letter was considered very important to the success of this questionnaire. Accordingly, it was composed so as to encourage and support participation. The value of the experience was stressed and, as further inducement, a reward was offered to those completing the questionnaire.

In No Limits to Growth, T.F. Carney has observed that:

If a group thinks itself to be expert ... it usually is. Expertise seems to give a kind of extra, sixth-sense 'feel' for a situation.⁵

This self-image was also encouraged in the covering letter.

The task put to the participants in Stage 1 read as follows:

Please list and briefly describe the major factors or trends that, in your considered opinion, are presently affecting or will, in the next 10 years, affect cottage development in Manitoba.

It was designed to be as broad as possible to permit all conceivable responses without biasing or influencing the participant. A secondary objective was to stimulate participant's thinking about this subject.

Answers were to be completed on the form provided and returned in a stamped, pre-addressed envelope that was also enclosed. Follow-up phone calls were made several weeks after the initial mailing but despite this reminder only 20 responses were obtained after 6 weeks.

Stage Two

The results from Stage 1 were sorted into broad categories and were then edited to eliminate any duplication. Those remaining were compiled in a master list. Considerable care was taken in this process to avoid modifying or changing the nature of an individual's response. In total, 29 different factors, with minimal overlap, were identified and these formed the basis for Stage 2.

The second mailing, displayed in Appendix B, Figures 4-8, went to the remaining 20 participants. In this Stage they were requested to rank, from 1 to 10, the 10 Most Significant and 10 Least Significant factors contained in the master list. The instructions provided were explicit and detailed so as to simplify and facilitate the process. Answer forms were provided and one week after the mailing the participants were contacted by telephone to obtain their responses. It proved difficult to contact several participants as they were away on holidays but after 5 weeks 19 responses were obtained.

Stage Three

The responses to Stage 2 permitted the researcher to rank the entire master list of 29 factors. This was accomplished by means of a point system. Ten points were awarded to a factor for first position on the Most Significant list, 9 points for second position and so on. Similarly, 10 points were subtracted from a factor for first position on the Least Significant List, 9 points for second position, and so on. Ties were decided on the basis of the number of times a factor appeared on the Most Significant list. The factors were then ranked according to the net amount of points each had received.

In Stage 3 the mailing displayed in Figures 9-12 in Appendix B, was sent to 16 participants as 3 of the previous 19 had advised the researcher that they wished to withdraw from further participation. The remaining participants were requested to evaluate the impact of the 10 Most Significant factors on 4 aspects of cottage development. These aspects were:

- 1) The demand for cottaging.
- 2) The average size of new cottages.
- 3) The average size of new cottage lots.
- 4) The level of quality of new cottages.

A 5 point scale was provided with which to indicate the impact; --, -, 0, +, ++. The symbols were interpreted as, strong decrease, decrease, no effect or indeterminable, increase and strong

increase, respectively. Answer forms were again provided and responses were collected by telephone. After 2 weeks from the date of the mailing 16 responses had been obtained.

Stage Four

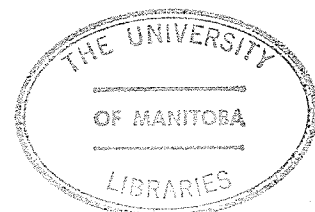
From these responses, the percentage distribution under the impact scale was calculated for each factor on each aspect. Choices which 2 or less participants had selected were deleted and essentially the same task, but with constrained choice and with feedback of the group's perceptions, was mailed out to 16 participants in Stage 4.

The purpose of this last mailing, displayed in Figures 13-19 in Appendix B, was to enable participants to re-assess their evaluations in light of the group results from Stage 3. The tendency in these subsequent rounds is to move towards the most likely result as indicated by the consensus of group opinion. In cases where consensus is not achieved, this indicates that the impact of the factor is not determinable and is as likely to be positive as negative.

All participants were contacted by telephone 1 week after Stage 4 had been mailed and all 16 responses were retrieved within 3 weeks.

Footnotes

1. J. L. Knetsch, "Assessing the Demand for Outdoor Recreation", Journal of Leisure Research, Vol. 1, No. 1, 1969, p. 85.
2. The Ontario Research Council on Leisure, Analysis Methods and Techniques for Recreation Research and Leisure Studies, OR-OS Reference System, Component III, Environment Canada, 1977, p. 66.
3. Ibid, p. 120.
4. The majority of participants who failed to complete the multi-stage questionnaire were representatives of business interests. This was not considered to have influenced the results but it does indicate one of the major problems encountered in conducting a Delphi exercise.
5. T.F. Carney, No Limits to Growth, Harbeck and Associates, Winnipeg, 1976, p.41.



CHAPTER 4: RESULTS

4.1 The Municipal Assessment Branch Survey

Quantity Demand and Distribution

As of July 31, 1976 a total of 7,226 cottages were located on privately owned lots in the Study Area. Data for the category Age, the year in which a cottage was built, was available for 6,652 cases. This accounts for 92% of the total number of cottages. (Table 4.1)

The proportion of cottages built prior to 1961 was 65.1% for the Study Area as a whole. However, this varied substantially between individual units. In traditional cottaging areas, such as the Town of Winnipeg Beach and the Village of Dunnottar, the proportion of cottages built prior to 1961 was 92.0 and 85.7 percent respectively. In what may be regarded as frontier areas, such as the R.M. of Bifrost and the L.G.D. of Alexander, only 10.6 and 14.3 percent of the cottages were built prior to 1961.

The number of new cottages built annually from 1961 to 1976 averaged 145 but this growth was not steady. During the years 1961 to 1971 inclusive the annual average was only 111 cottages. This more than doubled to 226 cottages for the years 1972 to 1975. A comparable number were probably built in 1976 but the data only covers the first 7 months of that year.

Table 4.1 Number of Cottages Built on Private Land by Year and by Unit

***** CROSSTABULATION OF *****																
AGE	YEAR WHEN BUILT 1959 + VALUE												BY UNIT		RM LGD OR TOWN	
CONTROLLING FOR..																
CROWN FORM	CROWN LAND? FORM CODE - POPULATION												VALUE.. 2 NO	POPULATION		

UNIT																
COUNT	UNIT												ROW		TOTAL	
COL PCT	IBIFROST	GIMLI RM	GIMLI TN	RM O ST	WINNIPEG	DUNNOTTA	RM O ST	VICTORIA	RM LAC D	ALEXANDE	BROCKENHE	WHITEMOU	ROW		TOTAL	
TOT PCT	1	2	3	4	5	6	7	8	9	10	11	12	ROW		TOTAL	
AGE	ANDREWS BEACH T R TOWN CLEMENTS BCH RM U BONNET R L G D AD R M TH R M												ROW		TOTAL	
UP TO 1960	1	13	630	110	111	932	848	870	655	75	77	3	7	4331		
	0.3	14.5	2.5	2.6	21.5	19.6	20.1	15.1	1.7	1.8	0.1	0.2	65.1			
	10.6	60.7	95.7	45.7	92.0	85.7	65.2	71.7	23.8	14.3	23.1	46.7				
	0.2	9.5	1.7	1.7	14.0	12.7	13.1	9.8	1.1	1.2	0.0	0.1				
	2	0	34	1	5	6	11	26	21	6	5	0	0	115		
	0.0	29.6	0.9	4.3	5.2	9.6	22.6	19.3	5.2	4.3	0.0	0.0	1.7			
	0.0	3.3	0.9	2.1	0.6	1.1	1.9	2.3	1.9	0.9	0.0	0.0				
	0.0	0.5	0.0	0.1	0.1	0.2	0.4	0.3	0.1	0.1	0.0	0.0				
	3	1	26	0	8	4	6	33	16	5	7	0	0	106		
	0.9	24.5	0.0	7.5	3.8	5.7	31.1	15.1	4.7	6.6	0.0	0.0	1.6			
	0.8	2.5	0.0	3.3	0.4	0.6	2.5	1.8	1.6	1.3	0.0	0.0				
	0.0	0.4	0.0	0.1	0.1	0.1	0.5	0.2	0.1	0.1	0.0	0.0				
	4	0	15	1	10	6	10	35	20	2	14	0	0	113		
	0.0	13.3	0.9	8.8	5.3	8.8	31.0	17.7	1.8	12.4	0.0	0.0	1.7			
	0.0	1.4	0.9	4.1	0.6	1.0	2.6	2.2	0.6	2.6	0.0	0.0				
	0.0	0.2	0.0	0.2	0.1	0.2	0.5	0.3	0.0	0.2	0.0	0.0				
	5	4	27	0	9	6	11	33	11	7	34	0	0	142		
	2.8	19.0	0.0	6.3	4.2	7.7	23.2	7.7	4.9	23.9	0.0	0.0	2.1			
	3.3	2.6	0.0	3.7	0.6	1.1	2.5	1.2	2.2	6.3	0.0	0.0				
	0.1	0.4	0.0	0.1	0.1	0.2	0.5	0.2	0.1	0.5	0.0	0.0				
	6	2	27	1	3	3	10	21	9	5	19	1	1	102		
	2.0	26.5	1.0	2.9	2.9	9.8	20.6	8.8	4.9	18.6	1.0	1.0	1.5			
	1.6	2.6	0.9	1.2	0.3	1.0	1.6	1.0	1.6	3.5	7.7	6.7				
	0.0	0.4	0.0	0.0	0.0	0.2	0.3	0.1	0.1	0.3	0.0	0.0				
	7	3	20	0	2	4	10	15	14	7	10	0	0	85		
	3.5	23.5	0.0	2.4	4.7	11.8	17.6	16.5	8.2	11.8	0.0	0.0	1.3			
	2.4	1.9	0.0	0.8	0.4	1.0	1.1	1.5	2.2	1.9	0.0	0.0				
	0.0	0.3	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.0	0.0			
COLUMN TOTAL	123	1038	115	243	1013	989	1335	914	315	539	13	15	6652			
(CONTINUED)	1.8	15.6	1.7	3.7	15.2	14.9	20.1	13.7	4.7	8.1	0.2	0.2	100.0			

Table 4.1 (cont'd)

***** C R O S S T A B U L A T I O N O F *****																								
AGE	YEAR WHEN BUILT 1959 + VALUE												BY UNIT	RM LGD OR TOWN										
CONTROLLING FOR..													VALUE..	NO										
CROWN	CROWN LAND?												VALUE..	1										
FORM	FORM CODE - POPULATION												POPULATION											

UNIT																								
COUNT	IBIFROST												GIMLI RM	GIMLI TN	RM O ST	WINNIPEG	DUNNOTTA	RM O ST	VICTORIA	RM LAC D	ALEXANDE	BROKENHE	WHITEMOU	ROW
ROW PCT	IR M												ANDREWS	BEACH T	R TOWN	CLEMENTS	BCH RM	U BONNET	R L G D	AD R M	TH R M	TOTAL		
COL PCT	1	2	3	4	5	6	7	8	9	10	11	12												
TOT PCT	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I		
8	1	20	0	6	1	3	19	13	8	8	0	1												
I	1.3	25.0	0.0	7.5	1.3	3.8	23.8	16.3	10.0	10.0	0.0	1.3										80		
I	0.8	1.9	0.0	2.5	0.1	0.3	1.4	1.4	2.5	1.5	0.0	6.7										1.2		
I	0.0	0.3	0.0	0.1	0.0	0.0	0.3	0.2	0.1	0.1	0.0	0.0												
9	3	12	1	7	5	22	18	16	5	9	2	0												
I	3.0	12.0	1.0	7.0	5.0	22.0	18.0	16.0	5.0	9.0	2.0	0.0										100		
I	2.4	1.2	0.9	2.9	0.5	2.2	1.3	1.8	1.6	1.7	15.4	0.0										1.5		
I	0.0	0.2	0.0	0.1	0.1	0.3	0.3	0.2	0.1	0.1	0.0	0.0												
10	9	30	0	11	1	4	35	17	17	19	1	1												
I	6.2	20.7	0.0	7.6	0.7	2.8	24.1	11.7	11.7	13.1	0.7	0.7										145		
I	7.3	2.9	0.0	4.5	0.1	0.4	2.6	1.9	5.4	3.5	7.7	6.7										2.2		
I	0.1	0.5	0.0	0.2	0.0	0.1	0.5	0.3	0.3	0.3	0.0	0.0												
11	4	13	0	4	4	7	33	16	19	18	0	1												
I	3.4	10.9	0.0	3.4	3.4	5.9	27.7	13.4	16.0	15.1	0.0	0.8										119		
I	3.3	1.3	0.0	1.6	0.4	0.7	2.5	1.8	6.0	3.3	0.0	6.7										1.8		
I	0.1	0.2	0.0	0.1	0.1	0.1	0.5	0.2	0.3	0.3	0.0	0.0												
12	15	15	0	15	2	6	20	14	2	27	0	0												
I	12.9	12.9	0.0	12.9	1.7	5.2	17.2	12.1	1.7	23.3	0.0	0.0										116		
I	12.2	1.4	0.0	6.2	0.2	0.6	1.5	1.5	0.6	5.0	0.0	0.0										1.7		
I	0.2	0.2	0.0	0.2	0.0	0.1	0.3	0.2	0.0	0.4	0.0	0.0												
13	11	33	0	5	3	2	23	13	27	53	1	0												
I	6.4	19.3	0.0	2.9	1.8	1.2	13.5	7.6	15.8	31.0	0.6	0.0										171		
I	8.9	3.2	0.0	2.1	0.3	0.2	1.7	1.4	9.6	9.8	7.7	0.0										2.6		
I	0.2	0.5	0.0	0.1	0.0	0.0	0.3	0.2	0.4	0.8	0.0	0.0												
14	14	35	1	14	7	9	40	23	30	62	0	1												
I	5.9	14.8	0.4	5.9	3.0	3.8	16.9	9.7	12.7	26.3	0.0	0.4										236		
I	11.4	3.4	0.9	5.8	0.7	0.9	3.0	2.5	9.5	11.5	0.0	6.7										3.5		
I	0.2	0.5	0.0	0.2	0.1	0.1	0.6	0.3	0.5	0.9	0.0	0.0												
COLUMN TOTAL	123	1038	115	243	1013	989	1335	914	315	539	13	15										6652		
(CONTINUED)	1.8	15.6	1.7	3.7	15.2	14.9	20.1	13.7	4.7	8.1	0.2	0.2										100.0		

Table 4.1 (cont'd)

***** C P O S S T A B U L A T I O N O F *****														
AGE	YEAR WHEN BUILT 1959 + VALUE				BY UNIT				RM LGD OR TOWN					
CONTROLLING FOR..														
CROWN FORM	CROWN LAND? POPULATION				VALUE..				2 NO 1 POPULATION					

UNIT														
CCUNT I														
ROW PCT	IBIFROST	GIMLI RM	GIMLI TN	RM D ST	WINNIPEG	DUNNOTTA RM	O ST	VICTORIA RM	LAC D	ALEXANDE	FROKENHE	WHITENO	ROW	TOTAL
COL PCT	IR M	1 I	2 I	3 I	4 I	5 I	6 I	7 I	8 I	9 I	10 I	11 I	12 I	
AGE	1 I	2 I	3 I	4 I	5 I	6 I	7 I	8 I	9 I	10 I	11 I	12 I		
15	11	31	0	13	4	8	40	16	44	59	3	1	1	230
	4.8	13.5	0.0	5.7	1.7	3.5	17.4	7.0	19.1	25.7	1.3	0.4	3.5	
	8.9	3.0	0.0	5.3	0.4	0.8	3.0	1.8	14.0	10.9	23.1	6.7		
	0.2	0.5	0.0	0.2	0.1	0.1	0.6	0.2	0.7	0.9	0.0	0.0		
16	28	36	0	11	16	7	40	25	37	66	1	1	1	268
	10.4	13.4	0.0	4.1	6.0	2.6	14.9	9.3	13.8	24.6	0.4	0.4	4.0	
	22.8	3.5	0.0	4.5	1.6	0.7	3.0	2.7	11.7	12.2	7.7	6.7		
	0.4	0.5	0.0	0.2	0.2	0.1	0.6	0.4	0.6	1.0	0.0	0.0		
17	4	34	0	9	9	15	34	15	19	52	1	1	1	193
	2.1	17.6	0.0	4.7	4.7	7.8	17.6	7.8	9.8	26.9	0.5	0.5	2.9	
	3.3	3.3	0.0	3.7	0.9	1.5	2.5	1.6	6.0	9.6	7.7	6.7		
	0.1	0.5	0.0	0.1	0.1	0.2	0.5	0.2	0.3	0.8	0.0	0.0		
MISSED	0M	39M	1M	127M	167M	37M	31M	14M	107M	24M	6M	21M	574M	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
COLUMN TOTAL	123	1038	115	243	1013	989	1335	914	315	539	13	15	6652	
	1.8	15.6	1.7	3.7	15.2	14.9	20.1	13.7	4.7	8.1	0.2	0.2	100.0	

The distribution of new cottages among units of the Study Area is displayed in Table 4.1. The trends for the R.M.'s of St. Andrews and Lac du Bonnet may be understated since data under the category Age was available for only 65.7% and 74.6% of the cases in these units respectively.

Cottage sales data was only available for the years 1971 to 1976 inclusive. The data includes all transactions involving cottages on privately owned land except those where the selling price was less than the total assessed value of the property.

During the years 1971 to 1976 there were a total of 1,545 transactions for an annual average of 257. The number of sales, the turnover rate and the average selling price of cottages by year for units of the Study Area is displayed in Table 4.2.

The average annual turnover rate for private cottages for this period was 4.22%. This is significantly less ($p < .001$) than the 5.4% rate previously determined for Crown cottages.

The highest average annual turnover rates occurred in the Towns of Gimli (10.4%) and Winnipeg Beach (5.2%), and in the R.M.'s of St. Andrews (6.7%) and Whitemouth (8.7%). The lowest rates were found in the R.M.'s of Bifrost (1.3%) and St. Clements (3.2%).

Table 4.2: Number of Sales, Turnover Rate and Average
Selling Price of Private Cottages by Units,
1971-1976

Unit	1971		1972		1973	
R.M. of Bifrost	0	-	1	1.5	1	1.3
	-		8000		8500	
R.M. of Gimli	21	2.4	42	4.7	47	5.0
	5087		4904		6586	
Town of Gimli	2	5.3	5	13.2	6	15.4
	4750		5720		14,400	
R.M. of St. Andrews	17	8.9	12	6.1	19	9.0
	4429		7888		7295	
Town of Winnipeg Beach	11	1.1	65	6.6	72	7.3
	4759		3827		4735	
Village of Dunnottar	57	6.0	33	3.5	40	4.2
	5174		5326		6542	
R.M. of St. Clements	24	2.1	45	3.8	45	3.7
	6300		5879		6241	
R.M. of Victoria Beach	29	3.5	44	5.3	24	2.8
	6176		6663		8106	
R.M. of Lac Du Bonnet	8	5.1	6	3.2	9	4.2
	5306		5275		8889	
L.G.D. of Alexander	4	1.6	18	6.0	23	6.4
	3500		5539		5471	
R.M. of Brokenhead	1	14.3	0	-	0	-
	5500		-		-	
R.M. of Whitemouth	2	18.2	2	18.2	1	8.3
	375		1400		250	

Key:

a	b
c	

a - Number of Sales

b - Turnover Rate (%)

c - Average Selling Price (\$)

Table 4.2 (cont'd)

Unit	1974		1975		1976	
R.M. of Bifrost	1	1.1	2	1.7	3	2.4
	1,000		13,300		21,167	
R.M. of Gimli	44	4.5	33	3.3	56	5.4
	6,526		7,397		12,881	
Town of Gimli	5	12.8	2	5.1	4	10.3
	8,520		5,800		16,125	
R.M. of St. Andrews	9	4.0	18	7.7	11	4.5
	5,306		14,528		14,991	
Town of Winnipeg Beach	71	7.2	45	4.5	48	4.7
	6,543		6,954		10,649	
Village of Dunnottar	34	3.5	59	6.1	44	4.4
	8,114		10,448		15,518	
R.M. of St. Clements	54	4.3	32	2.5	33	2.5
	8,394		9,830		12,238	
R.M. of Victoria Beach	26	3.0	27	3.0	37	4.0
	11,229		15,941		17,165	
R.M. of Lac Du Bonnet	16	6.2	14	4.7	14	4.4
	9,166		10,579		9,543	
L.G.D. of Alexander	17	4.0	19	3.9	29	5.4
	8,353		7,654		12,076	
R.M. of Brokenhead	1	9.1	0	-	0	-
	4,500		-		-	
R.M. of Whitemouth	1	7.7	0	-	0	-
	1,000		-		-	

Key:

a	b
c	

a - Number of Sales

b - Turnover Rate (%)

c - Average Selling Price (\$)

In 1971 the average selling price of private cottages was \$5,295.00. By 1976 the average price had climbed to \$13,373.00, an increase of 250%. The percentage increase in average price over the preceding year is displayed in the following table. Increases in the Consumer Price Indices of All Items and Housing for the City of Winnipeg are added for comparative purposes.

Table 4.3: Increase in Average Cottage Price and Selected Consumer Price Indices^a 1971 to 1976 (in percent)

	1971-72	1972-73	1973-74	1974-75	1975-76
Cottages	.5	19.6	21.5	29.4	33.6
C.P.I. All Items (Winnipeg)	3.8	6.4	10.7	12.4	8.7
C.P.I. Housing (Winnipeg)	2.1	5.5	8.3	12.9	14.7

^aSource: Statistics Canada, Catalogues 62-002, 62-010

Ownership

Data for Owner's Residence Location was available for 6,887 cases, 95.3% of the total. The distribution by ownership category is displayed in Table 4.4.

In all units, Winnipeg residents own a majority of cottages. They account for 82.2% of the total. Other Manitoba residents own 10.6% overall but their share increases to 29.7% and 30.5% in the R.M.'s of St. Andrews and Whitemouth. Other Canadian residents own 2.1% overall but account for 5.4% of the cottages in the R.M. of Victoria Beach. Foreign residents own only 0.4% of all private cottages in the Study Area.

Data for Owner's Residence Location was missing for a considerable number of cases in the R.M. of Lac du Bonnet and in the L.G.D. of Alexander. This was caused by the fact that many cottage owners in these units lease the lots on which their cottages are located. They are not taxed directly and thus their addresses were not available.

Comparable data was obtained for 980 cottages located on Crown land in the Study Area (Table 4.4a) and data was also available for cottages in Whiteshell Provincial Park. The distributions among ownership categories for private, Crown, and Whiteshell cottages are displayed in Table 4.5.

Table 4.4: Private Cottage Owner's Residence
Location by Unit, 1976

UNIT	2	3	4	5	m.v.	Total
R.M. of Bifrost	111	11	1	0	0	123
R.M. of Gimli	937	82	21	6	31	1,077
Town of Gimli	107	5	3	0	0	115
R.M. of St. Andrews	206	110	9	2	43	370
Town of Winnipeg Beach	1,064	94	14	5	3	1,180
Village of Dunnottar	917	78	25	4	2	1,026
R.M. of St. Clements	1,139	188	15	5	19	1,366
R.M. of Victoria Beach	801	72	50	2	3	928
R.M. of Lac du Bonnet	210	53	7	0	152	422
L.G.D. of Alexander	406	59	9	3	86	563
R.M. of Brokenhead	17	2	0	0	0	19
R.M. of Whitemouth	24	11	1	0	0	36
TOTAL	5,940	765	155	27	339	7,226

Key 2 - Winnipeg
3 - Other Manitoba
4 - Other Canadian
5 - Foreign
m.v. - missing values

Table 4.4a: Crown Cottage Owner's Residence
Location by Unit, 1976

UNIT	2	3	4	5	m.v.	Total
R.M. of St. Andrews	47	7	1	0	0	55
R.M. of St. Clements	499	11	10	1	0	521
R.M. of Victoria Beach	36	1	0	0	0	37
R.M. of Lac du Bonnet	154	14	2	0	9	179
L.G.D. of Alexander	151	31	2	0	4	188
Total	887	64	15	1	13	980

Key 2 - Winnipeg
 3 - Other Manitoba
 4 - Other Canadian
 5 - Foreign
 m.v. - Missing values

Table 4.5: Owner's Residence Location for Private, Crown and Whiteshell Provincial Park^a Cottages

		Category					Total
		2	3	4	5	m.v.	
Private Cottages	No.	5,940	765	155	27	339	7,226
	%	82.2	10.6	2.1	0.4	4.7	100%
Crown Cottages	No.	887	64	15	1	13	980
	%	90.5	6.6	1.5	0.1	1.3	100%
Whiteshell Cottages	No.	2,744	167	69	6	-	2,986
	%	91.9	5.6	2.3	0.2	-	100%
Total	No.	9,571	996	239	34	352	11,192
	%	85.5	8.9	2.1	.4	3.1	100%

^aSource: Research and Data Services Branch, Department of Tourism, Recreation and Cultural Affairs, 1977.

Key 2 - Winnipeg
 3 - Other Manitoba
 4 - Other Canadian
 5 - Foreign
 m.v. - missing values

Cottage Building Size

Data for Cottage Building Size was available for 6,648 private cottages (92.07%) and for 871 Crown cottages, (88.9%). The average cottage size by Age and Building Class for these two populations is displayed in Tables 4.6 and 4.7.

The average size of private cottages in the Study Area is 755 ft.², only slightly larger than the 604 ft.² average for Crown cottages.

Cottages less than 1,000 ft.² make up the majority of both private and Crown cottages. Private cottages less than 500 ft.² average 384 ft.² and account for 20.0% of all private cottages. The next class, 500-1,000 ft.², average 730 ft.² and account for 61.9% of all private cottages. The average size of Crown cottages less than 500 ft.² is 435 ft.² and these account for 35.0% of all Crown cottages. The next class, 500-1,000 ft.², average 667 ft.² and account for 61.1% of all Crown cottages. A considerable percentage of private cottages (18.2%) are larger than 1,000 ft.². The majority of these fall in the 1,000-1,500 ft.² class and the average size is 1,167 ft.². Only 3.9% of Crown cottages are larger than 1,000 ft.² and none are larger than 2,000 ft.².

There does not appear to be any particular relationship between cottage size and Owner's Residence Location. (See Tables 4.8 and 4.9).

Table 4.6 Average Size of Private Cottages by Building Class and Age

***** C R O S S---B R E A K D O W N O F *****													
BCLASS	BUILDING CLASS	BY AGE		YEAR WHEN BUILT									1959 + VALUE
CONTROLLING FOR...													
FORM	CROWN LAND?	VALUE..		2 NO									
FORM	FORM CODE - POPULATION	VALUE..		1 POPULATION									
VARIABLE AVERAGED...	BSIZE	BUILDING SIZE IN 100 SQ FT											
***** PAGE 1 OF 2 *****													
AGE													
	MEAN	COUNT									UP TO 19	ROW	
	STD DEV	1	2	3	4	5	6	7	8	9	TOTAL		
1 - 500 SQ FT	3.85	3.77	4.15	3.66	4.29	4.38	4.11	4.09	3.70		3.84		
	1091	9	13	13	19	12	11	19	8		1328		
	4163.76	23.48	54.00	47.62	81.56	52.55	45.24	77.76	30.26		5103.19		
	0.83	0.86	0.96	1.16	0.82	0.67	0.99	0.94	1.12		0.91		
> - 1000 SQ FT	7.35	7.28	7.63	7.66	7.60	7.63	7.39	7.69	7.97		7.30		
	2591	98	76	81	102	61	60	51	35		4113		
	18275.64	712.54	580.06	620.14	775.16	465.33	443.70	392.34	518.14		36045.35		
	1.34	1.15	1.24	1.25	1.38	1.43	1.22	1.45	1.29		1.35		
> - 1500 SQ FT	11.75	11.53	11.89	11.87	11.45	11.49	11.23	11.71	11.49		11.57		
	559	7	15	17	20	26	14	9	25		1052		
	6558.12	79.32	173.33	201.85	228.96	293.69	157.20	105.37	287.13		12279.67		
	1.34	1.13	1.73	1.57	1.07	1.42	1.04	1.25	1.25		1.32		
> - 2000 SQ FT	16.80	15.06	15.52	16.36	15.60	16.02	0.0	15.84	17.79		16.67		
	85	1	2	2	1	2	0	1	2		159		
	1423.03	15.05	31.04	32.72	15.60	32.04	0.0	15.84	35.58		2516.71		
	1.47	0.0	0.11	1.70	0.0	0.74	0.0	0.0	2.50		1.38		
> 2000 SQ FT	29.51	0.0	0.0	0.0	0.0	29.77	0.0	0.0	0.0		28.65		
	13	0	0	0	0	1	0	0	0		16		
	384.53	0.0	0.0	0.0	0.0	29.77	0.0	0.0	0.0		455.42		
	16.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		14.92		
COLUMN TOTAL	7.12	7.32	7.66	7.99	7.76	8.51	7.60	7.39	8.71		7.55		
	4329	115	106	113	142	102	85	80	100		6648		
	33810.29	841.36	243.40	902.33	1101.28	878.38	646.14	591.31	871.16		50202.73		
(CONTINUED)	3.35	1.96	2.50	2.73	2.55	3.48	2.31	2.72	2.75		3.22		

50

Table 4.6 (cont'd)

***** C R O S S---B R E A K D O W N O F *****											
PCCLASS	BUILDING CLASS	BY AGE					YEAR WHEN BUILT	1959 * VALUE			
CONTROLLING FOR..							VALUE..	2 NO			
CROWN	CROWN LAND?						VALUE..	1 POPULATION			
FORM	FORM CODE - POPULATION						VALUE..	1 POPULATION			

VARIABLE AVERAGED..	B SIZE	BUILDING SIZE IN 100 SQ FT									
***** PAGE 2 OF 2											
AGE											
	MEAN I										ROW
	COUNT I										TOTAL
	SUM I										
	STD DEV I	10 I	11 I	12 I	13 I	14 I	15 I	16 I	17 I		
PCCLASS											
1 - 500 SQ FT	1	3.27 I	3.60 I	3.43 I	3.40 I	3.77 I	3.66 I	3.60 I	3.75 I	3.84	
		22 I	13 I	13 I	23 I	26 I	23 I	15 I	8 I	1328	
		78.52 I	49.40 I	44.53 I	78.22 I	97.94 I	84.24 I	54.06 I	30.04 I	5103.19	
		1.13 I	0.72 I	1.04 I	1.16 I	0.91 I	1.00 I	1.01 I	1.28 I	0.91	
> - 1000 SQ FT	2	7.75 I	7.80 I	7.69 I	7.77 I	7.68 I	7.70 I	8.00 I	8.15 I	7.30	
		39 I	95 I	73 I	107 I	145 I	151 I	152 I	119 I	4113	
		767.95 I	683.41 I	561.09 I	831.75 I	1120.62 I	1162.66 I	1216.07 I	937.04 I	30045.35	
		1.22 I	1.26 I	1.26 I	1.24 I	1.14 I	1.24 I	1.16 I	1.22 I	1.35	
> - 1500 SQ FT	3	11.95 I	10.79 I	11.65 I	11.39 I	11.59 I	11.55 I	11.76 I	11.91 I	11.67	
		21 I	15 I	27 I	37 I	60 I	53 I	89 I	56 I	1052	
		242.14 I	161.84 I	314.46 I	420.96 I	695.48 I	611.92 I	1046.28 I	690.91 I	12279.07	
		1.47 I	0.73 I	1.26 I	1.18 I	1.27 I	1.29 I	1.33 I	1.40 I	1.32	
> - 2000 SQ FT	4	15.78 I	15.59 I	15.93 I	16.52 I	16.72 I	16.86 I	16.94 I	16.33 I	16.67	
		3 I	5 I	3 I	3 I	3 I	3 I	11 I	12 I	139	
		47.34 I	62.96 I	47.78 I	49.56 I	50.16 I	50.59 I	186.39 I	195.97 I	2316.71	
		0.71 I	1.36 I	1.48 I	0.90 I	1.11 I	0.76 I	1.27 I	1.14 I	1.38	
> 2000 SQ FT	5	0.0 I	0.0 I	0.0 I	22.72 I	22.30 I	0.0 I	0.0 I	0.0 I	28.65	
		0 I	0 I	0 I	1 I	1 I	0 I	0 I	0 I	16	
		0.0 I	0.0 I	0.0 I	22.72 I	22.30 I	0.0 I	0.0 I	0.0 I	458.42	
		0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	14.98	
COLUON TOTAL		7.83	8.12	8.54	8.21	8.42	8.30	9.37	9.61	7.55	
		145	119	116	171	236	230	267	193	6642	
		1125.56	957.61	957.86	1403.21	1986.70	1909.41	2502.75	1853.96	50202.73	
		2.76	2.74	2.93	3.05	2.86	2.70	2.95	2.95	3.22	

Table 4.7 Average Size of Crown Cottages by Building Class and Age

***** C R O S S --- B R E A K D O W N O F *****												
BCLASS	BUILDING CLASS	BY AGE									YEAR WHEN BUILT	1959 * VALUE
CONTROLLING FOR..												
CADEN	CROWN LAND?	VALUE.. 1 YES										
FORM	FORM CODE - POPULATION	VALUE.. 1 POPULATION										

VARIABLE AVERAGE...	BSIZE	BUILDING SIZE IN 100 SQ FT										

***** PAGE 1 OF 2 *****												
AGE												
MEAN I												
COUNT I UP TO 19												
SUM I 40												
BCLASS	STD DEV I	1 I	2 I	3 I	4 I	5 I	6 I	7 I	8 I	9 I	ROW	TOTAL
1 - 500 SQ FT	4.24 I	4.45 I	4.65 I	4.51 I	4.80 I	4.80 I	4.80 I	4.80 I	4.80 I	3.64 I	4.35	
	232 I	5 I	10 I	14 I	12 I	15 I	1 I	5 I	1 I	1 I	305	
	984.02 I	22.24 I	46.47 I	63.12 I	57.60 I	72.00 I	4.80 I	24.00 I	3.84 I	1326.17		
	0.51 I	0.73 I	0.27 I	0.69 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.52	
> - 1000 SQ FT	6.41 I	7.26 I	7.12 I	6.96 I	6.85 I	7.02 I	6.67 I	6.60 I	6.60 I	6.60 I	6.67	
	240 I	4 I	15 I	43 I	29 I	27 I	20 I	13 I	12 I	12 I	532	
	1537.55 I	29.04 I	106.76 I	299.19 I	198.67 I	139.65 I	139.42 I	88.84 I	79.16 I	3548.86		
	1.25 I	1.21 I	1.13 I	1.20 I	1.11 I	1.19 I	1.14 I	1.00 I	0.93 I	1.19		
> - 1500 SQ FT	11.14 I	11.33 I	11.09 I	11.06 I	0.0 I	10.24 I	11.62 I	10.20 I	0.0 I	0.0 I	11.07	
	10 I	1 I	2 I	4 I	0 I	1 I	3 I	1 I	0 I	0 I	33	
	111.40 I	11.35 I	22.18 I	44.24 I	0.0 I	10.24 I	34.85 I	10.20 I	0.0 I	0.0 I	365.35	
	1.07 I	0.0 I	0.61 I	0.82 I	0.0 I	0.0 I	0.47 I	0.0 I	0.0 I	0.90		
> - 2000 SQ FT	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	18.46	
	0 I	0 I	0 I	0 I	0 I	0 I	0 I	0 I	0 I	0 I	18.46	
	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0	
	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0 I	0.0	
COLUMN TOTAL	3.46	6.26	6.50	6.66	6.25	6.32	7.21	6.32	6.38	6.04		
	482	16	27	61	41	43	24	19	13	871		
	2633.00	62.64	175.41	403.55	256.27	271.59	173.07	120.04	83.00	5295.06		
	1.66	2.42	1.97	1.99	1.32	1.54	2.03	1.49	1.17	1.84		

(CONTINUED)

Table 4.7 (cont'd)

***** C R O S S---B R E A K D O W N O F *****

BCLASS	BUILDING CLASS	BY AGE	YEAR WHEN BUILT	1959	VALUE					
CONTROLLING FOR..										
CROWN	CROWN LAND?	VALUE..	1	YES						
FORM	FORM CODE - POPULATION	VALUE..	1	POPULATION						
VARIABLE AVERAGED...	BSIZE	BUILDING SIZE	IN 100 SQ FT							
PAGE 2 OF 2										
AGE										
	MEAN									
	COUNT									
	SUM									
BCLASS	STD DEV	10	11	12	13	14				
		15	16	17		ROW TOTAL				
1 - 500 SQ FT	1	4.59	0.0	4.70	4.80	0.0	4.80	5.00	4.80	4.35
		3	0	3	1	0	1	1	1	305
		14.58	0.0	14.10	4.80	0.0	4.80	5.00	4.80	1326.17
		0.10	0.0	0.17	0.0	0.0	0.0	0.0	0.0	0.52
> - 1000 SQ FT	2	6.87	6.85	6.93	6.73	7.37	7.24	7.09	6.73	6.67
		17	22	21	24	13	5	3	24	532
		116.72	150.68	145.54	161.60	55.82	36.20	21.2	161.53	3548.66
		0.92	1.10	1.30	0.99	1.37	0.91	1.35	0.89	1.19
> - 1500 SQ FT	3	0.0	0.0	11.56	12.16	10.88	10.61	10.24	0.0	11.07
		0	0	2	1	4	3	1	0	33
		0.0	0.0	23.12	12.16	43.52	31.84	10.24	0.0	365.35
		0.0	0.0	1.37	0.0	1.07	0.29	0.0	0.0	0.90
> - 2000 SQ FT	4	0.0	0.0	0.0	0.0	0.0	18.48	0.0	0.0	18.48
		0	0	0	0	0	1	0	0	1
		0.0	0.0	0.0	0.0	0.0	18.48	0.0	0.0	18.48
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COLUMN TOTAL		6.56	6.85	7.03	6.87	6.20	9.13	7.30	6.65	6.04
		20	22	26	26	17	10	5	25	371
		131.30	150.68	182.76	176.56	139.34	91.32	36.50	166.33	5258.66
		1.12	1.10	1.95	1.43	1.99	3.86	2.10	0.95	1.84

Table 4.8: Number and Average Size of Private Cottages by Building Class and Owner's Residence Location

Building Class	Winnipeg		Other Manitoba		Other Canadian		Foreign	
	Average Size	No.	Average Size	No.	Average Size	No.	Average Size	No.
To 500 ft. ²	386	1158	363	231	386	29	385	7
500-1000 ft. ²	730	3680	719	436	744	100	734	13
1000-1500 ft. ²	1169	959	1148	85	1202	18	1158	6
1500-2000 ft. ²	1670	118	1701	12	1615	6	1566	1
>2000 ft. ²	2651	15	0	0	2083	1	0	0
All Classes	757	5930	674	764	773	154	768	27

Table 4.9: Number and Average Size of Crown Cottages by Building Class and Owner's Residence Location

Building Class	Winnipeg		Other Manitoba		Other Canadian		Foreign	
	Average Size	No.	Average Size	No.	Average Size	No.	Average Size	No.
To 500 ft. ²	436	310	446	13	430	5	0	0
500-1000 ft. ²	667	547	711	45	663	10	672	1
1000-1500 ft. ²	1104	29	1159	6	0	0	0	0
1500-2000 ft. ²	1848	1	0	0	0	0	0	0
All Classes	602	887	699	64	586	15	672	1

Table 4.10 compares the average size of cottages built before 1961 and those built from 1961 to 1976 by Building Class. There has been an obvious movement towards larger cottages for both private and Crown categories.

Table 4.10 : Average Size of Private and Crown Cottages Built Before and After 1961 by Building Class

Building Class	Private				Crown			
	Pre '61		'61-'76		Pre '61		'61-'76	
	Ave. Size	%	Ave. Size	%	Ave. Size	%	Ave. Size	%
to 500 ft. ²	385	25.0	380	10.7	424	48.1	469	18.8
500-1,000 ft. ²	705	59.9	773	65.6	641	49.8	689	75.1
1,000-1,500 ft. ²	1,173	12.8	1,160	21.3	1,114	2.1	1,104	5.9
1,500-2,000 ft. ²	1,428	2.0	1,646	2.3	0	0	1,848	.2
> 2,000 ft. ²	2,951	.3	2,493	.1	0	0	0	0

The average size of private cottages is greatest in the Town of Gimli (832 ft.²), the Village of Dunnottar (841 ft.²) and in the L.G.D. of Alexander (827 ft.²). The average size is smallest in the R.M.'s of St. Andrews (688 ft.²), St. Clements (655 ft.²), Brokenhead (641 ft.²) and Whitemouth (575 ft.²). (Table 4.11).

The average size of Crown cottages is greatest in the R.M. of Lac Du Bonnet (729 ft.²) and in the L.G.D. of Alexander (743 ft.²). It is least in the R.M. of St. Clements (527 ft.²). (Table 4.12).

Table 4.11: Average Size of Private Cottages
by Age and Unit

	Pre '61	'61	'62	'63	'64	'65
R.M. of Bifrost	472	-	570	-	482	888
R.M. of Gimli	673	748	755	709	771	800
Town of Gimli	830	864	-	864	-	1,248
R.M. of St. Andrews	572	740	661	816	632	755
Town of Winnipeg Beach	766	787	1,300	1,007	777	1,488
Village of Dunnottar	832	757	779	920	819	980
R.M. of St. Clements	555	686	783	694	788	848
R.M. of Victoria Beach	740	758	899	899	836	1,015
R.M. of Lac Du Bonnet	718	609	590	660	867	784
L.G.D. of Alexander	675	736	830	839	787	789
R.M. of Brokenhead	396	-	-	-	-	540
R.M. of Whitemouth	528	-	-	-	-	280
Average	712	732	796	799	776	861

Table 4.11 (cont'd)

	'66	'67	'68	'69	'70	'71
R.M. of Bifrost	811	548	817	783	578	728
R.M. of Gimli	717	825	815	723	735	774
Town of Gimli	-	-	672	-	-	-
R.M. of St. Andrews	672	586	767	815	821	592
Town of Winnipeg Beach	757	912	899	1,510	1,147	722
Village of Dunnottar	821	1,240	969	808	774	932
R.M. of St. Clements	741	672	884	843	891	981
R.M. of Victoria Beach	740	802	894	799	794	916
R.M. of Lac Du Bonnet	752	764	518	576	739	694
L.G.D. of Alexander	851	532	1,023	868	832	908
R.M. of Brokenhead	-	-	515	960	-	-
R.M. of Whitemouth	-	384	-	808	320	-
Average	760	739	871	783	812	834

Table 4.11 (cont'd)

	'72	'73	'74	'75	'76	Average
R.M. of Bifrost	760	703	824	863	747	736
R.M. of Gimli	845	912	849	945	987	731
Town of Gimli	-	800	-	-	-	832
R.M. of St. Andrews	912	835	785	1,087	1,001	688
Town of Winnipeg Beach	680	1,015	778	916	803	779
Village of Dunnottar	780	726	949	953	1,029	841
R.M. of St. Clements	907	890	883	942	941	655
R.M. of Victoria Beach	989	976	870	985	968	781
R.M. of Lac Du Bonnet	717	627	788	957	1,029	758
L.G.D. of Alexander	795	856	795	917	967	827
R.M. of Brokenhead	683	-	964	704	336	641
R.M. of Whitemouth	-	864	936	864	480	575
Average	821	842	830	937	961	755

Table 4.12: Average Size of Crown Cottages by Age and Unit

	Pre '61	'61	'62	'63	'64	'65	'66	'67	'68
R.M. of St. Andrews	602	728	480	816	573	-	-	-	-
R.M. of St. Clements	478	480	517	564	566	565	606	601	600
R.M. of Victoria Beach	606	-	-	-	-	-	1,109	-	560
R.M. of Lac Du Bonnet	634	619	707	759	733	821	880	738	-
L.G.D. of Alexander	726	664	707	644	708	833	720	612	781
Average	546	626	650	666	625	632	721	632	638

Table 4.12: (cont'd)

	'69	'70	'71	'72	'73	'74	'75	'76	Average
R.M. of St. Andrews	-	-	-	-	-	644	-	-	613
R.M. of St. Clements	627	654	605	632	672	704	631	653	527
R.M. of Victoria Beach	-	-	816	-	-	-	-	-	624
R.M. of Lac Du Bonnet	742	701	-	789	852	1,268	500	-	729
L.G.D. of Alexander	747	725	785	947	815	857	944	960	743
Average	656	685	703	687	820	913	730	665	604

Cottage Lot Size

Data for Cottage Lot Size was available for 5,427 private cottages (75.1%) and for 750 Crown cottages (76.5%). The average lot size by Age and Lot Class for these two populations is displayed in Tables 4.13 and 4.14.

The average size of private lots in the Study Area is 60,017 ft.², 7 times the 8,472 ft.² average of Crown lots. Much of this difference is due to the fact that there were 252 private lots larger than 2 acres averaging over 1,000,000 ft.² and only 7 Crown lots over 2 acres that averaged only 160,798 ft.².

Lots less than 1 acre (43,560 ft.²) in size make up the majority of both private and Crown lots. The average size of private lots less than 1 acre is 11,409 ft.² and this category accounts for 93.4% of all private lots. The average size of Crown lots less than 1 acre is 6,438 ft.² and this category accounts for 98.1% of all Crown lots.

Winnipeg residents own the majority of private lots in all lot size categories but their share diminishes as the categories get larger. Eighty-eight percent of private lots up to 1 acre in extent are owned by Winnipeg residents whereas 70% of lots from 1-2 acres and only 62.4% of lots greater than 2 acres are owned by this group. Other Manitoba residents own 9.4% of private lots up to 1 acre in extent, 23.1% of lots from 1-2 acres and 34.3% of lots greater than 2 acres. In addition, the average size of private

Table 4.13 Average Size of Private Cottage Lots by Lot Class and Age

***** C R O S S --- B R E A K D O W N O F *****													
LCCLASS	LOT CLASS	ACRES APPROX	BY AGE					YEAR WHEN BUILT	1959 + VALUE				
CONTROLLING FOR.	CROWN LAND?		VALUE..		2 NO			VALUE..		1 POPULATION			
FORM	FORM CODE	- POPULATION											

VARIABLE AVERAGE	LSIZE	LOT SIZE	IN 100 SQ FT										
***** PAGE 1 OF 2													
		MEAN	AGE										
		COUNT	UP TO 19										
		SUM	60										ROW
LCCLASS	SYD DEV		1	2	3	4	5	6	7	8	9	TCTAL	
UP TO 1 ACRE	1	103.54	117.42	127.37	126.58	128.13	130.28	125.42	145.14	107.49		114.09	
		3507	96	82	89	102	73	65	61	69		5065	
		1363111.44	11272.10	10444.52	11265.93	13069.38	9510.25	8152.30	8853.77	7416.52		1578297.88	
		63.54	69.22	85.46	78.38	60.03	82.64	67.07	73.98	44.03		67.90	
> - 2 AC	2	627.02	682.36	871.20	801.50	609.62	709.65	837.25	658.95	479.16		628.45	
		56	3	1	3	7	4	1	4	1		105	
		35112.91	2047.07	671.20	2404.51	4267.32	2838.60	837.25	2635.82	479.16		66615.56	
		125.99	218.07	0.0	92.20	147.73	188.90	0.0	77.25	0.0		142.09	
> 2 ACRES	3	8690.15	3426.31	7930.09	1838.23	7132.22	9106.76	16765.15	1093.36	17592.27		10365.67	
		117	7	4	1	9	8	4	3	6		252	
		12895.05	2794.69	6044.30	0.0	8364.97	7598.13	26791.79	80.98	25845.84		15453.97	
COLUMN TOTAL		384.50	351.92	494.67	166.76	690.90	1002.39	1086.43	217.20	1492.75		600.17	
		3680	103	87	93	118	85	70	68	76		5427	
		1414972.00	37303.37	43036.10	15508.67	81526.69	85202.94	76050.13	14769.66	113449.31		3257138.00	
		2741.71	1065.40	1995.75	226.12	2873.46	3426.15	6806.93	236.70	8188.42		3962.64	

(CONTINUED)

Table 4.13 (cont'd)

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*****
LCLASS LOT CLASS ACRES APPROX BY AGE YEAR WHEN BUILT 1959 * VALUE
CONTROLLING FOR...
CROWN CROWN LAND? VALUE.. 2 NG
FORM FORM CODE - POPULATION VALUE.. 1 POPULATION
*****
VARIABLE AVERAGED... LSIZE LOT SIZE IN 100 SQ FT
*****

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PAGE 2 OF 2

LCLASS	AGE										RCW TOTAL
	MEAN I	10 I	11 I	12 I	13 I	14 I	15 I	16 I	17 I	18 I	
UP TO 1 ACRE	130.74	128.88	142.49	150.93	150.12	158.05	149.34	147.49	114.09	5069	
> - 2 AC	871.20	0.0	446.03	479.66	548.33	600.37	620.56	694.00	628.45	106	
> 2 ACRES	14630.15	18793.72	10589.91	10454.05	12374.18	14422.07	15422.69	5658.82	10385.97	252	
COLUMN TOTAL	1524.03	2597.94	1152.32	1065.53	1014.23	1469.69	1467.70	509.92	600.17	5427	
	175269.50	223222.81	107165.44	121579.13	162277.31	242818.94	273736.75	64249.75	3257138.00	7553.10	
	7553.10	10768.51	4932.00	4690.91	6304.01	6895.38	7263.86	2033.25	3962.64		

Table 4.14 Average Size of Crown Cottage Lots by Lot Class and Age

***** C R O S S--B R E A K D O W N O F *****

LCLASS LOT CLASS ACRES APPROX BY AGE YEAR WHEN BUILT 1959 + VALUE

CONTROLLING FOR..

CROWN CROWN LAND? VALUE.. 1 YES

FORM FORM CODE - POPULATION VALUE.. 1 POPULATION

VARIABLE AVERAGED.. LSIZE LOT SIZE IN 100 SQ FT

***** PAGE 1 OF 2

AGE

LCLASS	STD DEV	AGE										ROW TOTAL
		1	2	3	4	5	6	7	8	9		
UP TO 1 ACRE	57.29	116.06	114.23	88.16	66.82	45.47	70.93	44.63	63.37	64.38		
	411	8	23	45	36	38	21	14	12	736		
	23544.58	928.50	2627.25	3967.10	2405.47	1728.00	1489.55	624.75	760.47	47386.06		
	59.53	56.82	61.99	69.40	59.81	46.37	61.98	44.72	70.39	64.21		
> 2 AC	697.53	0.0	0.0	714.38	0.0	0.0	0.0	0.0	0.0	699.94		
	6	0	0	1	0	0	0	0	0	7		
	4185.20	0.0	0.0	714.33	0.0	0.0	0.0	0.0	0.0	4899.58		
	116.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.15		
> 2 ACRES	1200.57	0.0	0.0	2130.08	1711.91	0.0	1193.60	0.0	0.0	1607.98		
	3	0	0	1	1	0	1	0	0	7		
	3819.71	0.0	0.0	2130.08	1711.91	0.0	1193.60	0.0	0.0	11255.83		
	419.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	615.81		
COLUMN TOTAL	74.64	116.06	114.23	144.93	111.28	45.47	121.96	44.63	63.37	84.72		
	420	8	23	47	37	35	22	14	12	750		
	31348.49	928.50	2627.25	6811.56	4117.38	1728.00	2683.15	624.75	760.47	63541.46		
	159.42	56.82	61.99	316.99	276.81	46.37	246.88	44.72	70.39	181.12		

(CONTINUED)

Table 4.14 (cont'd)

***** CROSS-BREAKDOWN OF *****												
LCLASS	LOT CLASS	ACRES APPROX	BY AGE		YEAR WHEN BUILT		1959 +		VALUE			
CONTROLLING FOR..			CROWN		CROWN LAND?		POPULATION		VALUE..		YES	
FORM			FORM CODE		POPULATION		VALUE..		POPULATION			

VARIABLE AVERAGED..			LSIZE		LOT SIZE IN 100 SQ FT							
***** PAGE 2 OF 2 *****												
AGE												
	MEAN	COUNT	SUM									ROW
LCLASS	STD DEV	10	11	12	13	14	15	16	17	TOTAL		
UP TO 1 ACRE	45.64	90.79	85.59	44.14	146.94	137.36	65.75	34.92	64.38			
	17	18	23	23	14	6	3	24	736			
	775.91	1634.20	1968.59	1015.15	2057.10	824.19	197.25	838.00	47385.06			
	61.07	100.81	68.41	46.32	53.65	146.64	72.97	34.14	54.21			
> - 2 AC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	699.94			
	0	0	0	0	0	0	0	0	7			
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4899.58			
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.15			
> 2 ACRES	0.0	0.0	0.0	0.0	0.0	0.0	2600.53	0.0	1607.58			
	0	0	0	0	0	0	1	0	7			
	0.0	0.0	0.0	0.0	0.0	0.0	2600.53	0.0	11255.83			
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	615.81			
COLUMN TOTAL	45.64	90.79	85.59	44.14	146.94	137.36	699.44	34.92	84.72			
	17	18	23	23	14	6	4	24	736			
	775.91	1634.20	1968.59	1015.15	2057.10	824.19	2797.78	838.00	63541.46			
	61.07	100.81	68.41	46.32	53.65	146.64	1268.79	34.14	181.12			

lots owned by Winnipeg residents is consistently smaller than the average size of private lots owned by Other Manitoba residents. (Table 4.15).

The average size of Crown lots less than 1 acre in extent leased by Winnipeg residents is 6,889 ft.². The average lot size for Other Manitoba residents is 11,707 ft.². (Table 4.16).

Table 4.17 compares the average lot size for cottages built before 1961 and for those built from 1961 to 1976 by lot class. In all cases average lot size is larger for cottages built from 1961 to 1976.

The average size of private lots less than 1 acre in extent is greatest in the R.M.'s of Bifrost (20,694 ft.²), St. Andrews (18,291 ft.²), Lac Du Bonnet (17,883 ft.²) and Brokenhead (21,943 ft.²) and in the L.G.D. of Alexander (18,226 ft.²). The smallest average sizes for this category are found in the Towns of Gimli (7,719 ft.²), Winnipeg Beach (8,959 ft.²), the Village of Dunnottar (9,704 ft.²), and the R.M. of Whitemouth (8,321 ft.²). Generally, average lot sizes in this class are greater in recent years ('71-'76) excepting the R.M.'s of Bifrost and Brokenhead, the Town of Gimli, the Village of Dunnottar and the L.G.D. of Alexander. (Table 4.18).

The average size of Crown lots less than 1 acre in extent is greatest in the R.M. of Lac Du Bonnet (16,302 ft.²) and the L.G.D. of Alexander (16,614 ft.²). The average size is smallest in the R.M. of St. Clements (2,585 ft.²). (Table 4.19).

Table 4.15: Number and Average Size of Private Cottage Lots by Lot Class and Owner's Residence Location

Lot Class	Owner's Residence Location							
	Winnipeg		Other Manitoba		Other Canadian		Foreign	
	Average Size	No.	Average Size	No.	Average Size	No.	Average Size	No.
Less than 1 Acre	11,197	4,717	14,084	506	11,384	119	14,714	21
1-2 acres	63,020	91	68,079	30	58,936	7	63,050	2
More than 2 Acres	896,886	204	1,102,050	112	3,079,401	9	583,704	2
All Classes	48,187	5,012	204,627	648	218,384	135	64,100	25

Table 4.16: Number and Average Size of Crown Cottage Lots by Lot Class and Owner's Residence Location

Lot Class	Owner's Residence Location							
	Winnipeg		Other Manitoba		Other Canadian		Foreign	
	Average Size	No.	Average Size	No.	Average Size	No.	Average Size	No.
Less than 1 Acre	6,899	756	11,707	33	3,536	11	2,475	1
1-2 acres	71,969	2	69,649	6	0	0	0	0
More than 2 acres	144,255	6	260,053	1	0	0	0	0
All Classes	8,148	764	26,607	40	3,536	11	2,475	1

Table 4.17: Average Lot Size of Private and Crown Cottages
 Built Before and After 1961 by Lot Class

Lot Class	Private				Crown			
	Pre 1961		1961-76		Pre 1961		1961-76	
	Average Size	%	Average Size	%	Average Size	%	Average Size	%
Less than 1 acre	10,354	95.3	13,776	89.4	5,729	97.9	7,336	98.5
1-2 acres	62,702	1.5	63,005	2.9	69,753	1.4	71,438	.3
More than 2 acres	869,015	3.2	1,181,840	7.7	120,657	.7	190,903	1.2

Table 4.18: Average Size of Private Lots Less Than
1 Acre in Extent by Age and Unit

	Pre '61	'61	'62	'63	'64	'65
R.M. of Bifrost	25,298	-	21,825	-	29,006	29,013
R.M. of Gimli	9,559	9,761	8,967	10,875	11,729	12,494
Town of Gimli	7,733	8,184	-	8,184	-	-
R.M. of St. Andrews	17,871	18,167	23,867	16,114	17,972	7,450
Town of Winnipeg Beach	8,859	9,925	7,610	8,660	7,076	8,483
Village of Dunnottar	9,719	8,565	9,582	9,187	10,045	11,930
R.M. of St. Clements	11,502	13,379	11,371	13,137	9,959	14,667
R.M. of Victoria Beach	11,638	11,661	11,756	11,852	11,242	11,750
R.M. of Lac Du Bonnet	15,701	19,584	31,423	8,125	15,000	16,200
L.G.D. of Alexander	20,359	17,417	17,535	19,076	17,627	14,104
R.M. of Brokenhead	26,037	-	-	-	-	-
R.M. of Whitemouth	7,935	-	-	-	-	10,850
Average	10,354	11,742	12,737	12,658	12,813	13,028

Table 4.18 (cont'd)

	'66	'67	'68	'69	'70	'71
R.M. of Bifrost	20,632	43,264	21,781	22,690	32,012	22,196
R.M. of Gimli	13,082	13,569	9,312	11,642	12,440	10,012
Town of Gimli	-	-	8,184	-	-	-
R.M. of St. Andrews	14,148	17,150	12,589	19,402	11,603	18,600
Town of Winnipeg Beach	14,217	7,100	7,810	-	10,567	6,875
Village of Dunnottar	8,618	21,830	9,286	9,860	7,946	7,570
R.M. of St. Clements	9,160	13,106	11,239	9,209	10,230	9,747
R.M. of Victoria Beach	14,412	11,646	11,220	14,162	11,308	15,421
R.M. of Lac Du Bonnet	8,125	12,258	8,125	10,897	10,990	7,405
L.G.D. of Alexander	16,640	21,175	16,038	19,259	17,611	16,822
R.M. of Brokenhead	-	-	15,000	6,534	-	-
R.M. of Whitemouth	-	-	-	-	9,148	-
Average	12,542	14,514	10,749	13,074	12,698	14,249

Table 4.18 (cont'd)

	'72	'73	'74	'75	'76	Average
R.M. of Bifrost	19,155	20,433	20,053	16,726	16,927	20,694
R.M. of Gimli	13,131	13,930	10,570	14,499	14,580	10,536
Town of Gimli	-	4,950	-	-	-	7,719
R.M. of St. Andrews	12,950	15,446	22,145	21,008	23,156	18,291
Town of Winnipeg Beach	6,600	10,830	10,292	12,421	13,159	8,959
Village of Dunnottar	7,500	10,247	9,231	8,666	9,717	9,704
R.M. of St. Clements	15,747	12,364	11,663	12,655	13,840	11,630
R.M. of Victoria Beach	12,909	13,140	15,245	11,446	13,470	11,886
R.M. of Lac Du Bonnet	25,468	18,688	20,160	23,705	19,875	17,883
L.G.D. of Alexander	15,130	19,442	20,561	17,722	16,743	18,226
R.M. of Brokenhead	-	-	20,700	-	-	21,943
R.M. of Whitemouth	-	-	-	7,000	10,000	8,321
Average	15,093	15,012	15,805	14,934	14,749	11,409

Table 4.19: Average Size of Crown Lots Less than 1 Acre in Extent by Age and Unit

	Pre '61	'61	'62	'63	'64	'65	'66	'67	'68
R.M. of St. Andrews	14,151	12,900	14,500	13,500	11,500	-	-	-	-
R.M. of St. Clements	2,589	2,475	2,411	2,525	2,544	2,588	2,475	2,706	2,517
R.M. of Victoria Beach	9,197	-	-	-	-	-	9,150	-	-
R.M. of Lac Du Bonnet	17,139	15,000	15,338	15,496	15,375	14,700	14,750	15,000	-
L.G.D. of Alexander	17,308	15,000	15,455	18,670	15,000	15,150	16,210	15,000	17,799
Average	5,729	11,606	11,423	8,816	6,682	4,547	7,093	4,463	6,337

Table 4.19 (cont'd)

	'69	'70	'71	'72	'73	'74	'75	'76	Average
R.M. of St. Andrews	-	-	-	-	-	39,204	-	-	15,144
R.M. of St. Clements	2,515	2,475	2,475	2,674	2,475	2,525	2,363	2,822	2,585
R.M. of Victoria Beach	-	-	9,150	-	-	-	-	-	9,194
R.M. of Lac Du Bonnet	14,410	22,494	-	15,000	14,856	20,640	-	-	16,302
L.G.D. of Alexander	25,456	15,407	15,801	16,520	16,119	15,000	15,000	18,900	16,614
Average	4,564	9,079	8,559	4,414	14,694	13,736	6,575	3,492	6,438

Cottage Quality

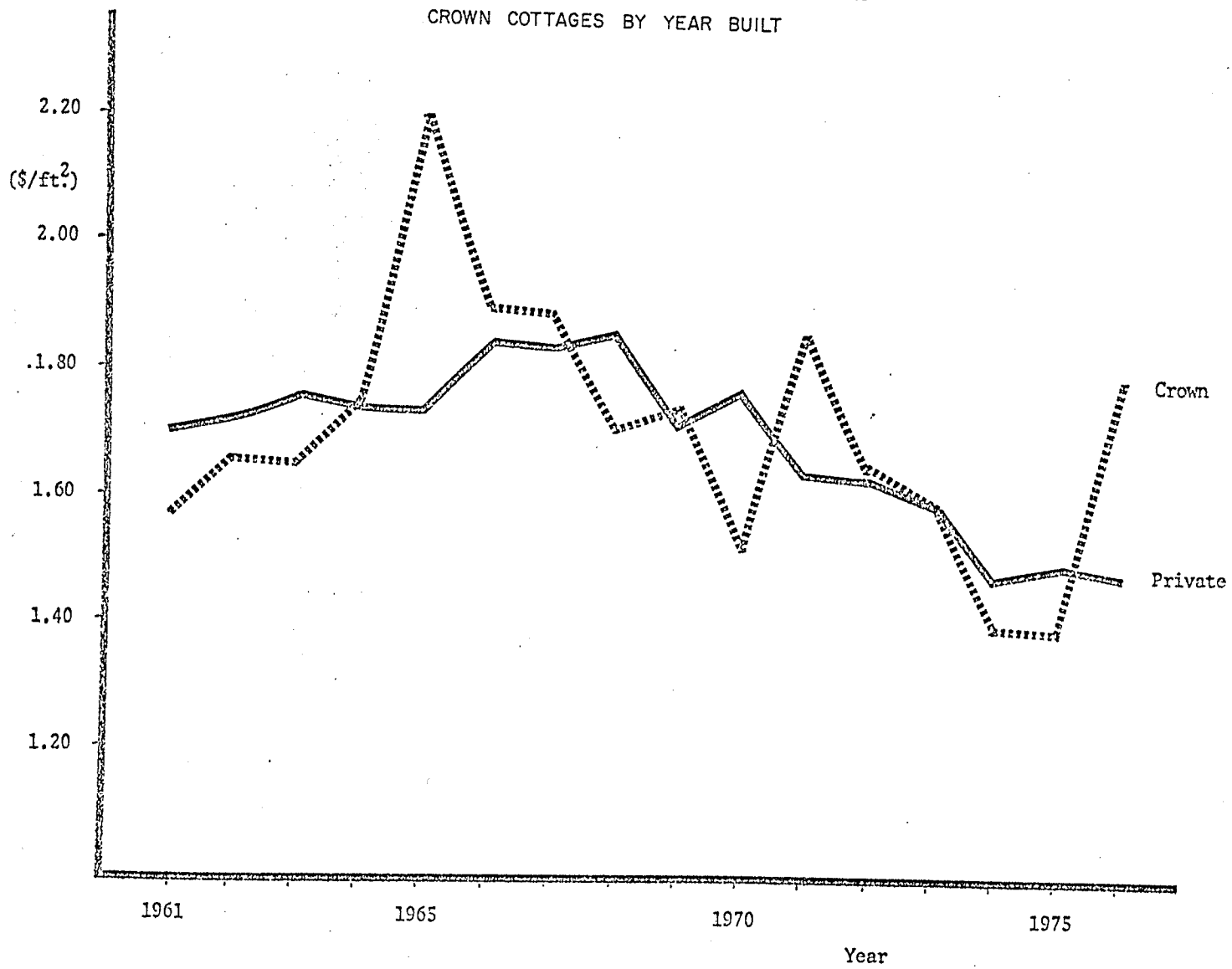
Data for Cottage Quality was available for 6,647 private cottages (92.0%) and for 870 Crown cottages (88.8%). The variable that is used for this analysis is Building Assessment divided by Building Size. This modification corrects for the strong influence exerted by the volume of the structure on its assessed value. It is assumed that wall heights are relatively constant for all cottages in the Study Area. The resulting measure of quality then is dollars per ft.² (\$/ft.²) and the higher the value, the higher the quality of the cottage.

Quality may be interpreted so as to mean the presence or absence or nature of such features as plumbing facilities, heating systems, interior and exterior finish, insulation, and type of foundation. This measure is not specific in the sense of indicating any one type of feature or its absence, rather it gives a relative perspective and system of rating.

Figure 4.1 illustrates the average quality level for private and Crown cottages by the year they were built. There does not appear to be any significant differences between private and Crown cottages. Cottages built between 1965 and 1968 tend to have the highest values for both private and Crown categories. Cottages built after 1970 tend to have the lowest values. This distribution is relatively consistent for all units in the Study Area except the R.M. of Victoria Beach. In this unit, private

FIGURE 4.1

AVERAGE QUALITY LEVEL OF PRIVATE AND
CROWN COTTAGES BY YEAR BUILT



cottages built after 1970 tend to have values greater than those in preceding years. This exception is not apparent among Crown cottages in this unit. (Table 4.20 and 4.21)

Values in all cases may tend to be lower for the earlier years because of a higher depreciation rate used in determining their assessed value.

There appears to be an inverse relationship between Cottage Quality and Lot Size. Table 4.22 gives the average quality level for private and Crown cottages by Lot Class.

Table 4.22: Average Quality Level of Private and Crown Cottages by Lot Class

Lot Class	Average \$/ft. ²	
	Private	Crown
Less than 1 acre	1.38	1.37
1-2 acres	1.26	1.26
Greater than 2 acres	1.15	1.20

Cottages owned by Foreign residents have the highest average quality values for both private and Crown categories. The lowest average values occur among Other Canadian owners but little difference is evident between Winnipeg and Other Manitoba residents overall. (Table 4.23)

Table 4.20 : Average Quality Level of
Private Cottages by Age and Unit

	Pre '61	'61	'62	'63	'64	'65
R.M. of Bifrost	0.97	-	1.47	-	1.36	1.53
R.M. of Gimli	1.18	1.65	1.66	1.52	1.83	1.67
Town of Gimli	1.70	2.06	-	2.26	-	2.28
R.M. of St. Andrews	1.22	1.63	1.43	1.74	1.48	1.54
Town of Winnipeg Beach	1.17	1.74	1.93	1.64	1.49	1.78
Village of Dunnottar	1.36	1.76	2.10	1.90	2.16	2.19
R.M. of St. Clements	1.16	1.55	1.86	1.71	1.80	1.73
R.M. of Victoria Beach	1.28	1.79	1.73	1.93	1.87	2.01
R.M. of Lac Du Bonnet	1.26	1.63	1.48	1.86	1.57	1.60
L.G.D. of Alexander	1.36	2.21	1.30	1.79	1.64	1.64
R.M. of Brokenhead	0.87	-	-	-	-	0.54
R.M. of Whitemouth	0.66	-	-	-	-	0.89
Average	1.24	1.70	1.72	1.76	1.74	1.74

Table 4.20 (cont'd)

	'66	'67	'68	'69	'70	'71
R.M. of Bifrost	1.38	1.20	1.72	1.69	1.13	1.37
R.M. of Gimli	1.74	1.73	1.56	1.51	1.28	1.36
Town of Gimli	-	-	2.62	-	-	-
R.M. of St. Andrews	1.76	1.74	1.65	1.53	1.94	1.55
Town of Winnipeg Beach	1.97	2.38	1.64	1.81	2.02	1.87
Village of Dunnottar	2.03	2.90	1.87	1.75	2.01	1.49
R.M. of St. Clements	1.88	1.71	2.19	2.06	1.79	1.72
R.M. of Victoria Beach	1.86	1.90	2.08	2.09	1.86	2.08
R.M. of Lac Du Bonnet	1.70	1.93	1.85	1.24	1.83	1.87
L.G.D. of Alexander	1.94	2.00	1.64	1.72	1.96	1.71
R.M. of Brokenhead	-	-	0.82	1.11	-	-
R.M. of Whitemouth	-	1.04	-	0.61	0.91	-
Average	1.84	1.84	1.86	1.72	1.77	1.64

Table 4.20 (cont'd)

	'72	'73	'74	'75	'76	Average
R.M. of Bifrost	1.46	1.41	1.14	1.09	0.88	1.27
R.M. of Gmili	1.49	1.46	1.38	1.43	1.40	1.32
Town of Gimli	-	2.30	-	-	-	1.73
R.M. of St. Andrews	1.13	1.33	1.48	1.23	1.37	1.37
Town of Winnipeg Beach	1.62	1.72	1.90	1.78	1.36	1.21
Village of Dunnottar	1.79	1.98	1.83	1.92	1.57	1.44
R.M. of St. Clements	1.80	1.57	1.65	1.68	1.54	1.37
R.M. of Victoria Beach	2.33	2.23	1.99	1.80	1.84	1.47
R.M. of Lac Du Bonnet	1.66	1.38	1.37	1.40	1.45	1.45
L.G.D. of Alexander	1.55	1.61	1.41	1.47	1.47	1.56
R.M. of Brokenhead	0.65	-	0.67	1.12	0.89	0.82
R.M. of Whitemouth	-	0.95	0.81	2.19	1.02	0.87
Average	1.63	1.60	1.48	1.50	1.48	1.38

Table 4.21: Average Quality Level of Crown Cottages by Age and Unit

	Pre '61	'61	'62	'63	'64	'65	'66	'67	'68
R.M. of St. Andrews	0.81	0.93	0.67	0.25	0.96	-	-	-	-
R.M. of St. Clements	0.97	2.23	1.97	1.85	1.89	2.44	2.00	1.97	1.76
R.M. of Victoria Beach	1.16	-	-	-	-	-	1.54	-	1.23
R.M. of Lac du Bonnet	1.49	1.59	1.58	1.54	1.69	1.49	1.83	1.72	-
L.G.D. of Alexander	1.37	1.54	1.61	1.57	1.52	1.52	1.72	1.76	1.74
Average	1.08	1.57	1.66	1.65	1.75	2.20	1.90	1.89	1.71

Table 4.21: cont'd

	'69	'70	'71	'72	'73	'74	'75	'76	Average
R.M. of St. Andrews	-	-	-	-	-	1.06	-	-	0.81
R.M. of St. Clements	1.74	1.69	1.98	1.64	2.10	1.89	1.38	1.82	1.36
R.M. of Victoria Beach	-	-	1.16	-	-	-	-	-	1.17
R.M. of Lac du Bonnet	1.71	1.49	-	1.25	1.51	1.22	1.56	-	1.55
L.G.D. of Alexander	1.79	1.27	1.80	2.08	1.60	1.22	1.31	1.09	1.49
Average	1.74	1.52	1.86	1.64	1.60	1.40	1.39	1.79	1.38

Table 4.23: Average Quality Level of Private and Crown Cottages by Owner's Residence Location

Owner's Residence Location	Average in \$/ft. ²	
	Private Cottages	Crown Cottages
Winnipeg	1.36	1.39
Other Manitoba	1.36	1.31
Other Canadian	1.23	1.12
Foreign	1.40	1.53

4.2 The Multi-stage Questionnaire

Stage One

The task put to the participants in Stage One read as follows:

Please list and briefly describe the major factors or trends that, in your considered opinion, are presently affecting, or will, in the next 10 years, affect cottage development in Manitoba.

Twenty of the initial 27 participants responded and they identified 29 distinct factors. These factors and the frequency of their occurrence on the response forms are listed below.

<u>Master List of Factors Affecting Cottage Development</u>	<u>Frequency of Occurrence</u>
1. The level of net disposable income per household.	9
2. The rate of inflation.	2
3. The rate of unemployment.	2
4. The increasing cost of energy.	8
5. The costs of other consumer goods and services.	1
6. The costs of cottages and cottage lots.	6
7. The level of taxation and maintenance costs of cottages.	1

(cont'd)

8. The degree to which cottages are viewed as investment opportunities.	2
9. Tax incentives to cottage ownership.	2
10. The level of personal savings.	1
11. The degree of environmental protection regulation by the Provincial Government.	2
12. Provincial government land-use policy with respect to Crown, agricultural and Park lands.	8
13. Municipal government attitudes towards cottage development.	1
14. The degree of leisure time.	5
15. General population increase.	2
16. The age structure of the population: (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing).	8
17. The structure of employment; (i.e. percentages of whitecollar and professional workers relative to blue collar workers).	1
18. The degree of urbanization.	3
19. Changing residential modes; (i.e. single-detached home ownership vs. apartment or condominium).	2
20. Improved planning and design of cottages and subdivisions.	2
21. The popularity of year round recreation activities.	2
22. The general desire for the "wilderness experience".	3
23. The popularity of winter vacations.	3
24. The level of winter foreign vacations.	2

25. The availability and cost of alternative recreation opportunities.	5
26. The accessibility, in terms of distance and travel time of new cottage development.	8
27. The level of services (hydro, telephone, etc.) available in new cottage developments.	2
28. The quality of new cottage lands, in terms of water quality, local environment and site construction ease.	4
29. The national political climate, (i.e. Quebec separation).	1

Stage Two

In Stage Two the participants were requested to rank the 10 most significant and the 10 least significant factors from the master list. Nineteen of 20 possible responses were obtained and the Master List of Factors was then ranked according to the point system previously described. The Ranked Master List of Factors and the points each received under the two categories appears below.

Ranked Master List of Factors Affecting Cottage Development	POINTS		Net
	Most Significant	Least Significant	
1. The level of net disposable income per household.	122	- 2	120
2. The accessibility in terms of distance and travel time of new cottage development.	87	0	87

(cont'd)

3. The costs of cottages and cottage lots.	98	- 11	87
4. The degree to which cottages are viewed as investment opportunities.	76	- 5	71
5. The rate of inflation.	72	- 6	66
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	77	-22	55
7. The degree of leisure time.	47	-11	36
8. The level of personal savings.	50	-21	29
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	37	-11	26
10. The availability and cost of alternative recreation opportunities.	32	- 8	24
11. The increasing cost of energy.	31	-12	19
12. The costs of other consumer goods and services.	35	-16	19
13. The popularity of year-round recreation activities.	33	-18	15
14. The level of taxation and maintenance cost of cottages.	19	-23	-4
15. Provincial government land use policy with respect to Crown, agricultural and Park lands.	33	-38	-5
16. Changing residential modes; (i.e. single-detached homeownership vs. apartment or condominium.)	30	-37	-7

17. The level of services (hydro, telephone, etc.) available in new cottage developments.	30	-40	-10
18. Municipal government attitudes towards cottage development.	21	-34	-13
19. The rate of unemployment.	11	-29	-18
20. The degree of environmental protection legislation by the provincial government.	7	-28	-21
21. The popularity of winter vacations.	0	-25	-25
22. Improved planning and design of cottages and subdivisions.	15	-48	-33
23. The degree of urbanization.	4	-45	-41
24. Tax incentives to cottage ownership.	10	-56	-46
25. General population increase.	7	-66	-59
26. The level of winter foreign vacations.	4	-76	-72
27. The general desire for the "wilderness experience".	4	-79	-75
28. The structure of employment, (i.e. percentages of white collar and professional workers relative to blue collar workers.)	0	-82	-82
29. The national political climate, (i.e. Quebec separation).	1	-150	-149

Stage Three

In Stage Three the remaining 16 participants were requested to evaluate the impacts of the 10 most significant factors, derived in Stage Two, on four aspects of cottage development. A 5 point impact scale; --, -, 0, +, ++, was employed representing Strong Decrease, Decrease, No effect or indeterminable, Increase, and Strong Increase, respectively. The frequency of responses under the impact scale for the factors on the four aspects of cottage development is given in Tables 4.24-4.27.

Table 4.24:

Frequency of Responses Under the Impact Scale for the Ten
Most Significant Factors on Aspect 1, The Demand for Cottaging

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	1	1	0	5	9
2. The accessibility in terms of distance and travel time of new cottage developments.	1	4	3	7	1
3. The costs of cottages and cottage lots.	1	6	4	3	2
4. The degree to which cottages are viewed as investment opportunities.	1	2	3	8	2
5. The rate of inflation.	1	2	4	6	3
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	1	4	6	5
7. The degree of leisure time.	0	0	4	10	2
8. The level of personal savings.	0	2	5	7	2
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	1	12	3	0
10. The availability and cost of alternative recreation opportunities.	1	6	3	6	0

Table 4.25:

Frequency of Responses Under the Impact Scale for the Ten
Most Significant Factors on Aspect 2, The Average Size of New Cottages

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	0	3	2	4	7
2. The accessibility in terms of distance and travel time of new cottage developments.	0	2	12	1	1
3. The costs of cottages and cottage lots.	1	10	2	1	2
4. The degree to which cottages are viewed as investment opportunities.	0	1	7	7	1
5. The rate of inflation.	0	6	8	0	2
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	6	8	2	0
7. The degree of leisure time.	1	0	9	6	0
8. The level of personal savings.	0	2	7	5	2
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	2	10	4	0
10. The availability and cost of alternative recreation opportunities.	2	2	10	2	0

Table 4.26: Frequency of Responses Under the Impact Scale for the Ten Most Significant Factors on Aspect 3, The Average Size of New Cottage Lots

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	2	3	5	4	2
2. The accessibility in terms of distance and travel time of new cottage developments.	2	1	1	2	0
3. The costs of cottages and cottage lots.	1	11	2	2	0
4. The degree to which cottages are viewed as investment opportunities.	0	1	5	10	0
5. The rate of inflation.	0	5	8	3	0
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	2	13	1	0
7. The degree of leisure time.	0	0	9	6	1
8. The level of personal savings.	0	2	7	7	0
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	2	7	5	2
10. The availability and cost of alternative recreation opportunities.	0	4	11	1	0

Table 4.27:

Frequency of Responses Under The Impact Scale for the Ten
Most Significant Factors on Aspect 4, The Level of Quality of New Cottages

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	0	1	2	7	6
2. The accessibility in terms of distance and travel time of new cottage developments.	0	2	10	3	1
3. The costs of cottages and cottage lots.	0	7	4	3	2
4. The degree to which cottages are viewed as investment opportunities.	0	1	3	10	2
5. The rate of inflation.	0	6	6	3	1
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	1	9	5	1
7. The degree of leisure time.	0	1	4	10	1
8. The level of personal savings.	0	2	3	10	1
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	1	8	6	1
10. The availability and cost of alternative recreation opportunities.	1	3	11	1	0

Stage Four

In Stage Four the results from Stage Three were fed back to the participants for re-evaluation. Impact categories which 2 or less participants had chosen were deleted. The participants were requested to evaluate the impacts of the 10 most significant factors on the 4 aspects of cottage development within the constrained impact categories. The frequency of responses under the constrained impact scales are given in Tables 4.28-4.31.

Table 4.28: Frequency of Responses to Stage Four Under Constrained Choice of Impacts:
Aspect 1, The Demand for Cottaging

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	0	0	0	5	11
2. The accessibility in terms of distance and travel time of new cottage development.	0	4	1	11	0
3. The costs of cottages and cottage lots.	0	10	5	1	0
4. The degree to which cottages are viewed as investment opportunities.	0	0	5	11	0
5. The rate of inflation.	0	0	7	8	1
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	0	4	10	2
7. The degree of leisure time.	0	0	1	15	0
8. The level of personal savings.	0	0	4	12	0
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	0	9	7	0
10. The availability and cost of alternative recreation opportunities.	0	7	6	3	0
	0	21	42	83	14

Table 4.29: Frequency of Responses to Stage Four Under Constrained Choice of Impacts: Aspect 2, The Average Size of New Cottages

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	0	2	0	10	4
2. The accessibility in terms of distance and travel time of new cottage development.	0	2	12	1	1
3. The costs of cottages and cottage lots.	1	10	2	1	2
4. The degree to which cottages are viewed as investment opportunities.	0	0	6	10	0
5. The rate of inflation.	0	6	10	0	0
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	4	12	0	0
7. The degree of leisure time.	0	0	9	7	0
8. The level of personal savings.	0	0	5	11	0
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	0	14	2	0
10. The availability and cost of alternative recreation opportunities.	2	2	10	2	0
	3	26	80	44	7

Table 4.30: Frequency of Responses to Stage Four Under Constrained Choice of Impacts: Aspect 3, The Average Size of New Cottage Lots

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	0	1	9	6	0
2. The accessibility in terms of distance and travel time of new cottage development.	2	1	11	2	0
3. The costs of cottages and cottage lots.	1	11	2	2	0
4. The degree to which cottages are viewed as investment opportunities.	0	0	7	9	0
5. The rate of inflation.	0	4	11	1	0
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	2	13	1	0
7. The degree of leisure time.	0	0	11	5	0
8. The level of personal savings.	0	0	8	8	0
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	0	10	6	0
10. The availability and cost of alternative recreation opportunities.	0	3	13	0	0
	3	22	95	40	0

Table 4.31: Frequency of Responses to Stage Four Under Constrained Choice of Impacts: Aspects 4, The Level of Quality of New Cottages

Factors	Impacts				
	--	-	0	+	++
1. The level of net disposable income per household.	0	0	1	7	8
2. The accessibility in terms of distance and travel time of new cottage development.	0	0	11	5	0
3. The costs of cottages and cottage lots.	0	9	1	6	0
4. The degree to which cottages are viewed as investment opportunities.	0	0	4	12	0
5. The rate of inflation.	0	4	10	2	0
6. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing.)	0	0	10	6	0
7. The degree of leisure time.	0	0	5	11	0
8. The level of personal savings.	0	0	4	12	0
9. The quality of new cottage lands in terms of water quality, local environment and site construction ease.	0	0	9	7	0
10. The availability and cost of alternative recreation opportunities.	0	3	13	0	0
	0	16	68	68	8

CHAPTER 5: ANALYSIS AND DISCUSSION

5.1 The Demand for Cottaging

As of July 31, 1976 a total of 7,226 cottages were located on privately owned lots in the Study Area. Cottages built prior to 1961 accounted for 65% or 4,331 of this amount. The rate of growth was steady from 1960 to 1971 averaging 111 cottages per year. Since 1971, however, there has been a significant increase (250%) in annual additions to private cottage stock.

Figure 5.1 illustrates the trend in the growth of private cottages from 1960 to 1975. The equation for the regression line that best fits these observed values is:

$$\hat{Y} = 4117.56 + 130.28 X$$

with $r^2 = .972$ (5.89)

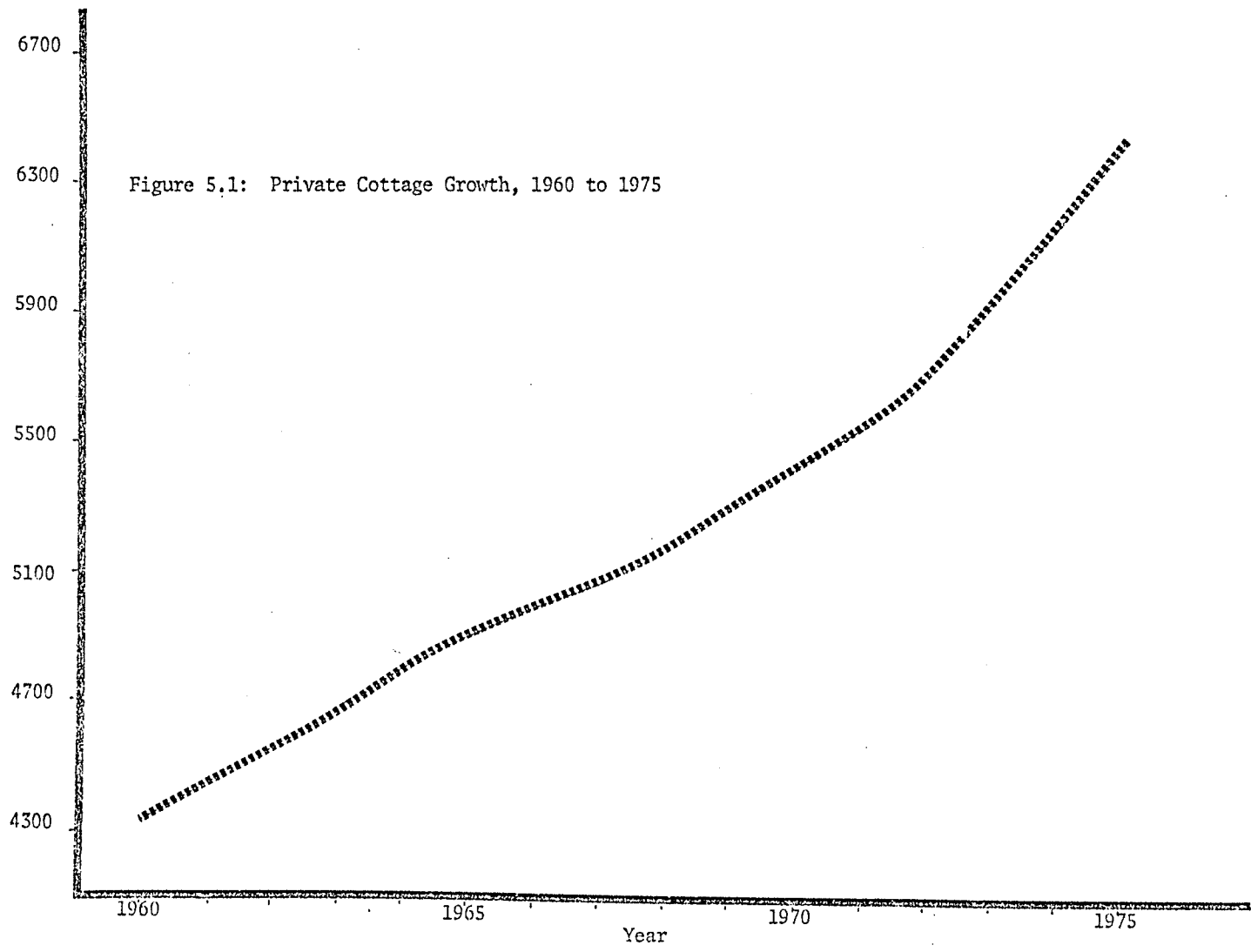
and SEE = 108.58

This equation was derived from the data displayed in Appendix C, Table 1 according to the procedure outlined in Chapter 3.

Projected values for 1980 and 1986 are 6,853 and 7,635 respectively. Total private cottage stock in 1980 and 1986 would therefore be 7,427 and 8,209 respectively. (Projected value plus 574 cottages in missing value category.)

Total
Number of
Private
Cottages

Figure 5.1: Private Cottage Growth, 1960 to 1975



Alternatively, the increased activity in recent years (1972-75) could be regarded as abnormal, due, perhaps, to an adjustment in supply. It could then be assumed that the trend prevailing between 1960 and 1971 would be re-established in 1976 after the market had adjusted. In order to determine the projected 1980 and 1986 values for total private cottage stock it is necessary to calculate the regression equation for the period 1960 to 1971 and increase the intercept (value of a) by the difference between the actual and projected value of Y in 1975. (Appendix C, Table 2)

The equation for the regression line that best fits the trend from 1960 to 1971 is:

$$\hat{Y} = 4230.37 + 109.02 X$$

with $r^2 = .997$ (1.73)

and $SEE = 20.75$

The difference between the actual and the projected value for 1975 is 484. Therefore, with this equation, the projected values for total private cottage stock in 1980 and 1986 are 7,578 and 8,232 respectively.

If it is assumed that the trend exhibited for the years 1972 to 1975 is not abnormal and that it will, in fact, continue, then yet another projection may be constructed based upon these 4 latest years. (Appendix C, Table 3)

The equation for the regression line that best fits this trend is:

$$Y = 5476 + 243.2 X$$

with $r^2 = .999$ (5.94)

and $SEE = 13.28$

The projected values for total private cottage stock in 1980 and 1986 would then be 8,239 and 9,698 respectively.

The three sets of projections for 1980 and 1986 are displayed in Table 5.1.

Table 5.1: Projected Total Private Cottage Stock in 1980 and 1986

Projection	1980	1986
1	7,427	8,209
2	7,578	8,232
3	8,239	9,698

Stated briefly, projection 1 anticipates an average of 130 cottages built annually on private lots in the Study Area to 1986. However, this figure has been exceeded during the years 1972 to 1976. Projection 2 accounts for the aberration in recent years but anticipates an average of only 109 cottages built annually to 1986. Projection 3, based on the four latest years for which complete data is available, anticipates an average of 243

cottages built annually on private lots from 1972 to 1986. The differences between these projections are considerable, ranging from a low of 8,209 to a high of 9,698 cottages by 1986.

Several factors suggest that the high projection will most accurately reflect the future pattern of demand for cottaging in the Study Area.

Foremost among these are the results from the Multi-stage Questionnaire. The participants identified what they considered to be the 10 most significant factors affecting cottage development. The responses to Stages 3 and 4 indicate that 6 of these 10 factors will have a positive impact on the demand for cottaging to 1986. Only 1 factor is clearly indicated as having a negative impact and, of the remainder, 2 may be classed as slightly positive and 1 slightly negative. (Table 4.28)

Additional evidence in support of this collective view is found in the Report and Recommendations of The Winnipeg Land Prices Inquiry Commission. This report cites 5 reasons behind the rapid escalation in Winnipeg housing prices during the early seventies. These are:

1. The number of house seekers increased as

- "Post-war babies", a demographic group of very large size, reached house-buying age.
2. Rapid inflation substantially enlarged family incomes, enabling and inducing many families to spend more on housing.
 3. The federal government fostered home ownership by granting tax concessions and other forms of financial assistance to home buyers.
 4. The prospect of continuing sharp increases in house prices persuaded many people to buy early a house that they would need later.
 5. The poor showing of securities markets induced many people to buy a house as a superior form of investment.¹

Rising demand for housing in Winnipeg coincided with a rising demand for cottaging. This relationship is displayed in Table 5.2. Increasing affluence and the investment potential of cottages were probably responsible for the increases in cottage prices and demand from 1972 to 1974 but, contrary to the trend in the housing market, cottage prices and demand continued their strong upward climb through 1976. This divergence can be attributed to the fact that the baby-boom generation is reaching the age and income levels at which it is most apt to purchase cottages. (Table 5.3).

Table 5.2: Comparison of Average Prices Paid for Winnipeg Houses and Cottages in the Study Area, 1971 to 1976

Category	1971	1972	1973	1974	1975	1976
Cottages: Price	5,295	5,324	6,366	7,736	10,008	13,373
% Increase	-	.5	19.6	21.5	29.4	33.6
New Houses: Price	21,500	23,800	27,600	36,700	43,500	51,200
% Increase	-	10.7	16.0	32.0	18.5	17.7
Old Houses: Price	-	19,600	21,600	27,600	33,500	39,500
% Increase	-	-	10.2	27.8	21.4	17.9

Source: Report and Recommendations of the Winnipeg Land Prices Inquiry Commission, 1977.

Table 5.3: Manitoba and Winnipeg Population by
Five Year Age Groups, 1971

Age Group	Manitoba	Winnipeg	
0 - 4	85,415	43,215	
5 - 9	100,200	49,795	
10 - 14	101,185	49,980	Future Market
15 - 19	96,335	50,880	
20 - 24	85,480	53,015	
25 - 29	66,940	40,385	
30 - 34	54,820	31,500	
35 - 39	52,630	30,235	
40 - 44	53,460	30,425	
45 - 49	56,465	32,615	
50 - 54	51,035	28,440	
55 - 59	48,835	26,990	
60 - 64	39,890	21,530	Current Market
65 - 69	32,370	17,155	
70+	63,195	34,100	
Total	988,245	540,260	

Source: Manitoba Department of Industry and Commerce,
"Regional Analysis Program Southern Manitoba:
Updated", Vol. 1, Winnipeg, 1975, Table D11.

... the majority of purchases are made by people in the 30-35 year age bracket. The large bulge of postwar babies will begin to reach this age starting in about 1975 and, therefore, we may expect to look forward to a marked increase in demand for cottages from 1975 on.²

R. C. Bellan has estimated that the effects of the baby-boom generation will last until approximately 1985.³ Thus, the impact of this factor on the demand for cottaging is likely to last until 1990.

The price differential for cottages and lots that exists between Manitoba and North Western Ontario may also be contributing to increased demand in this province. In the past, many potential cottage owners have chosen to locate in North Western Ontario. A 1968 study noted that:

Ontario also attracts Manitoba cottagers, especially in the Lake of the Woods area ... where the majority of cottagers are from Winnipeg.⁴

and

In July, 1970, Ontario auctioned 72 summer home lots located in the Kenora area Every lot was sold to a Manitoban.⁵

However, in 1975, the prices for lake-front lots on Lake of the Woods, at one subdivision, ranged from \$88.00 to \$125.00 per front foot. In the same year the price per front foot ranged from \$28.00 to \$77.00 for lake-front lots in the Winnipeg River area of Manitoba.⁶ Increases in the cost of gasoline will also contribute to a widening of these price differences.⁷

On the basis of the foregoing evidence, a reversion to levels of demand obtaining during the years 1960 to 1971 is considered improbable. The majority of facts indicate that recent (1972-1975) levels of demand for cottaging will continue to 1986. Therefore, the high projection of total private cottage stock in 1980 and 1986 of 8,239 and 9,698 cottages, respectively, is selected as best representing anticipated demand for cottaging.

5.2 The Distribution of Cottages

For this subsection the Study Area has been divided into 3 geographic regions, A, B and C. Region A consists of Units 1-6 located on the western shore of Lake Winnipeg. Region B consists of Units 7 and 8 located along the southwestern shore of Lake Winnipeg. Region C consists of Units 9-12, east of Lake Winnipeg and bordering Whiteshell Provincial Park. The current distribution of private cottages by data collection unit was displayed in Table 4.1. This level of disaggregation was not employed for projecting future distribution as this would have required a more detailed analysis of the cottage lot supply situation and such analysis was considered beyond the scope of this research.

The number and share of private cottages built annually in each region of the Study Area is displayed in Table 5.4. The trends for each region's share of cottages built annually are illustrated in Figure 5.2.

The equation for the regression line that best fits the trend for Region A is:

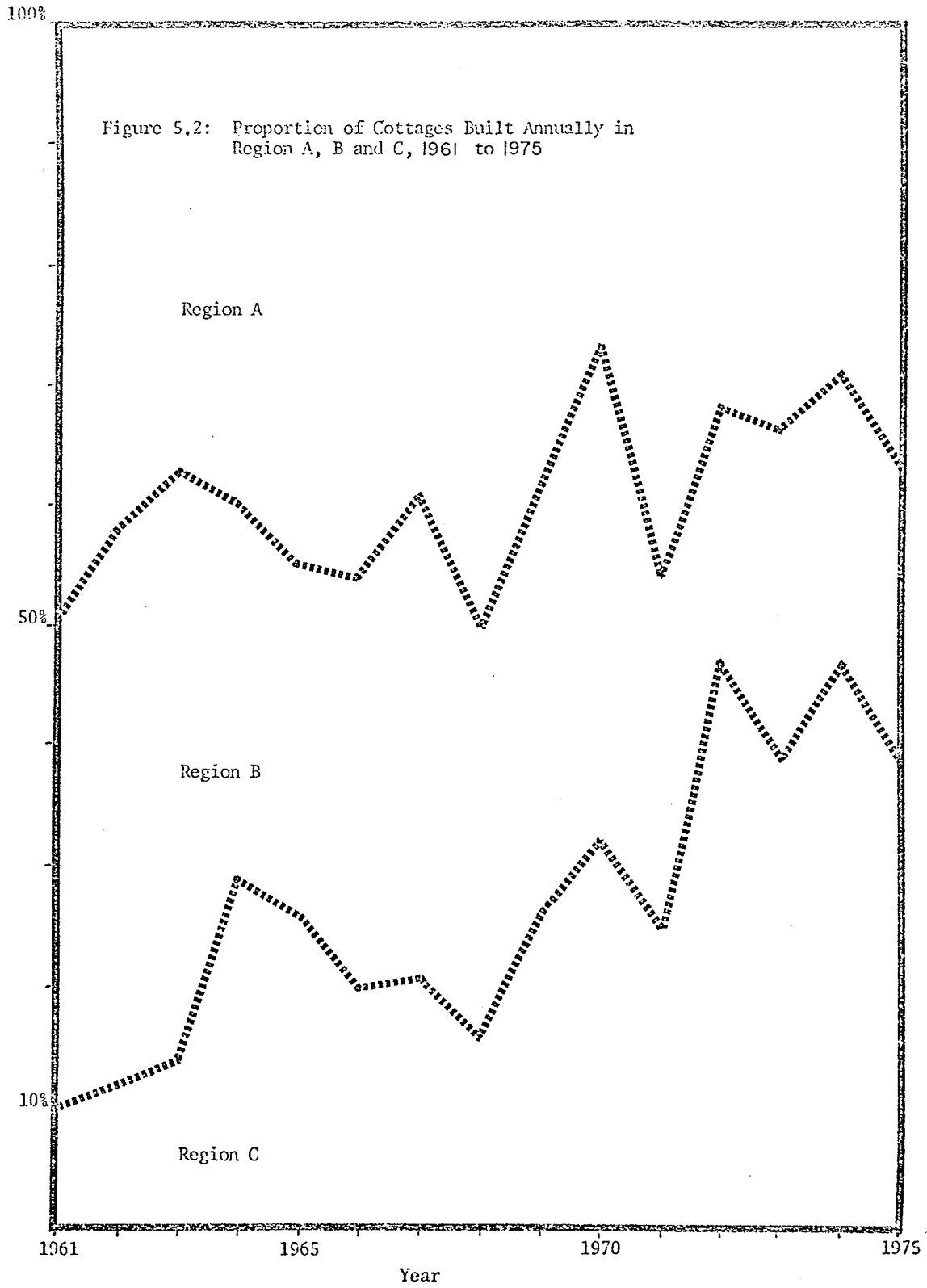
$$\hat{Y} = 46.7 + (-.9) X$$

with $r^2 = .32$

and SEE = 6.1 (Appendix C, Table 4)

Table 5.4: Number and Share of Private Cottages Built Annually in Regions of the Study Area

Region		Pre '61	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70	'71	'72	'73	'74	'75	Total
A	No.	2644	57	45	42	57	46	39	31	50	55	32	53	54	80	67	98	3450
	Column %	61	50	42	37	40	45	46	39	50	38	27	46	32	34	29	37	53
B	No.	1525	47	49	55	44	30	29	32	34	52	49	34	36	63	56	65	2200
	Column %	35	40	46	49	31	29	34	40	34	36	41	29	21	27	24	24	34
C	No.	162	11	12	16	41	26	17	17	16	38	38	29	81	93	107	105	809
	Column %	4	10	12	14	29	26	20	21	16	26	32	25	47	39	47	39	13



The equation for the regression line that best fits the trend in Region B is:

$$\hat{Y} = 44.7 + (-1.38) X$$

with $r^2 = .557$ (.35)

and SEE = 5.7 (Appendix C, Table 5)

The equation for the regression line that best fits the trend in Region C is:

$$\hat{Y} = 8.7 + 2.27 X$$

with $r^2 = .706$ (.41)

and SEE = 6.8 (Appendix C, Table 6)

These equations indicate that proportionately fewer private cottages built annually will be located in Regions A and B whereas a greater proportion will be located in Region C. The projected proportions for each region in 1980 and 1986 are given in Table 5.5.

The increasing proportion of private cottages being located in Region C can be attributed to several factors. Firstly, it is generally recognized that the Shield type environment characteristic of this region, holds the greatest attraction for Manitoba recreationists. Secondly, the number of Crown cottage lots, located in this environment, increased by only 149 between 1965 and 1975.⁸ Thirdly, lower cottage and lot prices in this region may be attracting potential

Table 5.5: Projected Share of Private Cottages
Built Annually by Region, 1980 and 1986

Region	1980	1986
A	29	23
B	17	9
C	54	68
	100%	100%

cottage owners who would otherwise have located in Northwestern Ontario. Lastly, overcrowding in traditional areas (Units 5,6, 7 and 8) may persuade potential cottage owners to locate in this region for privacy and seclusion.

The trends in all regions, although indicative of the future distribution of private cottages, are very much subject to supply considerations. In Region A much of the prime cottage land close to Winnipeg has already been developed but there still exists substantial acreage in private hands that could be developed.

In Region B again much of the prime land is already developed. New cottage subdivisions are being located on poor quality land with no adequate beaches.⁹ The proximity of these subdivisions to Winnipeg may overcome these drawbacks but this indicates that cottage lands are becoming increasingly scarce in this region.

In Region C, aside from Units 11 and 12, the major portion of lands belong to the Crown. At present, there does not appear to be any shortage of private cottage lots but with the rapid increase projected this could become a problem. It does not appear that any significant development will occur in the R.M.'s of Brokenhead and Whitemouth. If a shortage of private cottage lots does arise then this will significantly increase public pressure for opening up Crown lands to cottage developments.

Overall, the cottage lot supply situation does not appear to represent a critical constraint. An Ontario cottage study has shown that 55% of all cottagers drive less than 100 miles and more than 75% drive less than 150 miles to reach their cottages.¹⁰ More than 50% of the respondents in this survey cited "close to home" as a reason for originally selecting their cottage area.¹¹ In Manitoba an analysis of Crown cottage lot lease and permit holders in Parks Branch Eastern Region (excluding Whiteshell Provincial Park) found that approximately 60% lived within 100 miles and 90% lived within 150 miles of their cottage.¹² The potential for new development within a 100 mile radius of Winnipeg remains high but, as much of this land is owned by the Crown, either increased public involvement is necessary or some arrangements will have to be made with private interests.

5.3 The Ownership Pattern of Cottages

The distribution of private cottages by Owner's Residence Location was displayed in Table 4.4. In all units of the Study Area Winnipeg residents own a majority of the cottages.

This pattern has changed only to a minor degree in the past 10 years. A 1967 study found that about 90% of private cottages in the sample were owned by Winnipeg residents.¹³ A comparison of the results of this study and the results obtained in this research for private and Crown cottages is presented in Table 5.6.

The increase in the share of cottage owners residing in Other Manitoba locations may be real or it may be due to an increased use, by former Winnipeg residents, of cottages as permanent residences. This latter possibility is indicated as share of Other Manitoba residents did not increase for Crown or Whiteshell cottages where permanent residency is prohibited by the Provincial Park Lands Act. Resolving this question would require additional research.

The data does not indicate any substantial change in ownership patterns and it can be expected that Winnipeg residents will continue to dominate the cottage market.

Table 5.6 Comparison of Cottage Owner's Permanent Residence Location, 1967^a and 1976

	Year	Owner's Residence Location				
		2	3	4	5	m.v.
Private Cottages	1967	89.9%	3.7%	.9%	0%	5.5%
	1976	82.2	10.6	2.1	.4	4.7
Crown Cottages	1967	90.5	9.5	0	0	0
	1976	90.5	6.6	1.5	.1	1.3
Whiteshell Cottages	1967	91.7	6.0	1.0	0	1.3
	1976	91.9	5.6	2.3	.2	0
All Cottages	1967	91.1	5.5	.9	0	2.5
	1976	85.5	8.9	2.1	.4	3.1

^aSource: T. E. Oswald, "An Analysis of Summer Cottaging in Manitoba", 1968.

Key: 2 - Winnipeg
 3 - Other Manitoba
 4 - Other Canadian
 5 - Foreign
 m.v. - missing values

5.4 Average Cottage Size

The average size of private cottages in the Study Area is 755 ft.², only slightly larger than the 604 ft.² average for Crown cottages. (Tables 4.6 and 4.7) Since 1961 the average size of private and Crown cottages has steadily increased. These trends are illustrated in Figure 5.3.

The equation for the regression line that best fits the trend for private cottages is:

$$\hat{Y} = 753 + 7.5 X \quad (2.59)$$

with $r^2 = .391$

and SEE = 43.3 (Appendix C, Table 7)

The equation for the regression line that best fits the trend for Crown cottages is:

$$\hat{Y} = 592 + 12.5 X \quad (3.53)$$

with $r^2 = .49$

and SEE = 59.0 (Appendix C, Table 8)



These equations indicate that the average size of cottages built annually on Crown land is increasing at a faster rate than that for cottages built on private land. These rates of increase are still modest but this may reflect the previously mentioned upward bias in the average size of cottages built in earlier years. The projected average size of private and Crown cottages for the years 1980 and 1986 displayed in Table 5.7 should therefore be considered as conservative estimates.

Table 5.7 Projected Average Size of Private and Crown Cottages in 1980 and 1986

	1980	1986
Private Cottages	930 ft. ²	948 ft. ²
Crown Cottages	842	917

Responses to the multi-stage questionnaire, Table 4.29, support these projections. Three factors are clearly indicated as having a positive impact on average cottage size, six factors are indicated as having no effect or indeterminable impact and only one factor is indicated as having a negative impact on cottage size.

5.5 Average Cottage Lot Size

This section will only assess the future of private cottage lot size. The size of cottage lots on Crown land is subject to the policies of the Parks Branch, Department of Tourism, Recreation and Cultural Affairs and is therefore not amenable to projection.

The majority (93.4%) of private cottage lots in the Study Area are less than 1 acre in extent and have an average size of 11,409 ft.². Two percent of all private lots range from 1-2 acres in extent and the remainder, 4.6%, are larger than 2 acres.

The average size of private lots less than 1 acre in extent has increased steadily since 1961. This trend is not apparent in the two larger Lot Class categories, however, the frequency of private lots larger than 2 acres has increased in recent years. (Table 4.13) These large lots are almost evenly distributed among the 3 regions of the Study Area defined in section 5.2. Region A accounts for 35%, Region B for 33% and Region C for 32% of the 252 lots in this Lot Class. The average size of these lots is 22.4, 17.2 and 32.3 acres in Regions A, B and C respectively.

If these holdings are comprised of desirable cottage lands they may be regarded as a form of reserve supply. At 2.5 cottage lots per acre and leaving aside 10% for roads and services

there are 4,435, 3,250 and 5,814 lots potentially available in Regions A, B and C, respectively. On the other hand, these holdings may be poorly drained and some distance from water thus reducing their desirability and supply potential. Further research in this respect is necessary to reach any firm conclusions.

Figure 5.4 illustrates the trend in the size of private cottage lots less than 1 acre in extent since 1961. The equation for the regression line that best fits this trend is:

$$\hat{Y} = 11,609 + 229.2 X$$

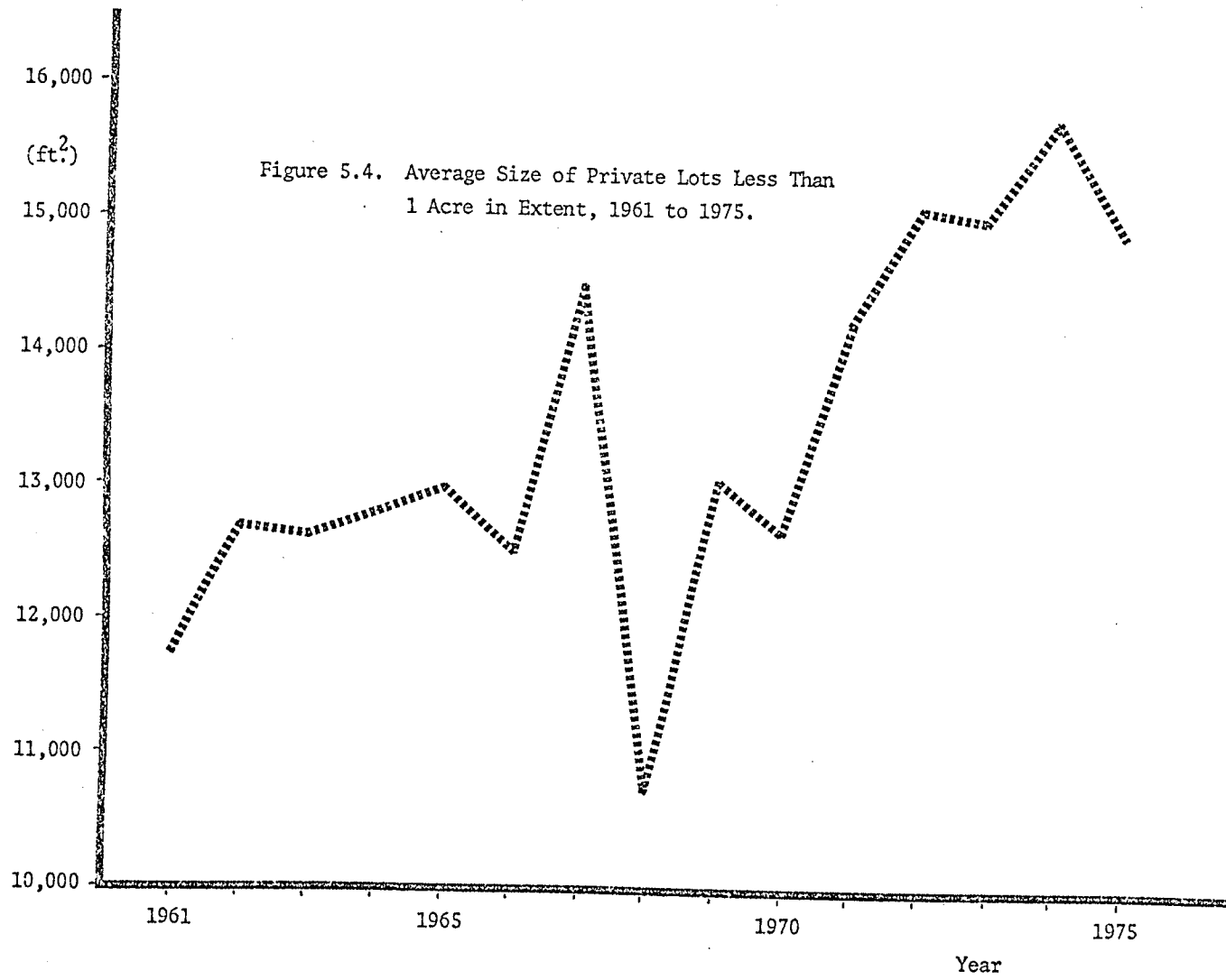
(60.72)

with $r^2 = .523$

and $SEE = 1016$ (Appendix C, Table 9)

The projected average size of lots in this Lot Class for 1980 and 1986 is, therefore, 16,193 ft.² and 17,568 ft.², respectively.

These results must be interpreted with some caution as the use averages for the Study Area has obscured the variation between individual units. A review of Table 4.18 suggests that units of the Study Area may be divided into two subclasses. In one, the average lot size ranges between 16,000 and 20,000 ft.². This subclass includes the R.M.'s of Bifrost, St. Andrews, and Lac du Bonnet and the L.G.D. of Alexander and these units are the least extensively developed of all units in the Study Area. In these units the average size of private lots fluctuated around 20,000 ft.² between 1961 and 1976. In some cases the trend



appears to be toward slightly smaller average lot sizes.

The other subclass includes the remaining units of the Study Area and average lot size ranges from 10,000 to 15,000 ft.². In these units the trend appears to be towards stable or slightly increasing average lot sizes.

Responses to the multi-stage questionnaire, Table 4.30, reflect this situation. No factors are clearly indicated as having a positive impact on cottage lot size although 2 may be considered as slightly positive. Only 1 factor is clearly indicated as having a negative impact and the remaining 7 are classed as no effect or indeterminable.

5.6 Cottage Quality

Private and Crown cottages built in the Study Area in the years 1965 to 1968 tend to have the highest average quality values. Those built since 1970 tend to have the lowest average quality values. This pattern is consistent between units with the exception of the R.M. of Victoria Beach. In this unit private cottages built since 1970 tend to have the highest average quality values. (Tables 4.21 and 4.22)

The general pattern suggests that cottages are improved to their maximum level 8-10 years after they are built. If this is true then it is logical to assume that the market value of these cottages will be higher, on average, than cottages built more recently. Sales data for 1976 was correlated with cottages built between 1965 and 1970 and between 1971 and 1976; to test this hypothesis.

In 1976, 15 of 279 sales involved cottages built in the years 1965 to 1970. The mean value of consideration paid was \$18,923.00 with a standard deviation of \$5,102. There were 63 sales that involved cottages built in the years 1971 to 1976 and the mean value of consideration paid in this group was \$12,366.00 with a standard deviation of \$9,815.

The variances of the two samples were tested to determine whether the samples were drawn from populations sharing a common variance. The null hypothesis is:

$$H_0 = \sigma_1^2 = \sigma_2^2$$

with the alternative

$$H_a = \sigma_1^2 \neq \sigma_2^2$$

and with a .05 level of significance. The test statistic is:

$$F_{v_1, v_2} = \frac{S_1^2}{S_2^2}$$

with the degrees of freedom

$$v_1 = n_1 - 1$$

$$v_2 = n_2 - 1$$

where S_1^2 = larger sample variance

S_2^2 = smaller sample variance

$$S_1^2 = (9,815)^2 = 96334225$$

$$v_1 = 63 - 1 = 62$$

$$S_2^2 = (5,102)^2 = 26030404$$

$$v_2 = 15 - 1 = 14$$

$$F = \frac{96334225}{26030404} = 3.7$$

This critical value of F at a .05 level of significance is 2.6142 and since $F = 3.7$ the null hypothesis must be rejected.

This test is a necessary prerequisite to a test of the differences between means where the population variances are

unknown and possibly unequal. In this case, the simple t test cannot be used because it was concluded that $\sigma_1^2 \neq \sigma_2^2$. The appropriate test is the Aspin - Welch test¹⁴.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

with the degrees of freedom for t:

$$v = \frac{1}{\frac{k^2}{v_1} + \frac{(1-k)}{v_2}}$$

where $v_1 = n_1 - 1 = 62$

$v_2 = n_2 - 1 = 14$

$$k = \frac{S_1^2/n_1}{S_1^2/n_1 + S_2^2/n_2} = .468$$

A one-tailed test will be used since the null hypothesis is:

$$H_0: u_1 = u_2$$

with the alternative

$$H_a: u_1 < u_2$$

and with a .05 level of significance.

$$v = \frac{1}{.0035 + .038} = 24$$

$$t = \frac{12,366 - 18,923}{\sqrt{3264474.8}}$$

$$t = \frac{-6557}{1806.8}$$

$$t = -3.629$$

The critical value for t with 24 degrees of freedom at a .05 level of significance is -1.711 and therefore the null hypothesis, $u_1 = u_2$ must be rejected in favor of the alternative hypothesis that $u_1 < u_2$ at a .05 level of significance.

These tests support the pattern indicated in Figure 4.1 and it can be concluded that cottages are improved to their maximum level of quality 8-10 years after they are built.

It is also interesting to note that cottages built in recent years are more likely to be sold than are cottages built between 1965 and 1970. This is determined by testing the observed distribution of the 279 cottage sales in 1976 among the age categories defined against the expected distribution.

The test statistic is:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

with the degrees of freedom:

$$v = \text{number of categories} - 1$$

where

O_i = observed distribution of 1976 cottage sales among the age categories

E_i = expected distribution of 1976 cottage sales if the distribution was due to chance

The necessary data is summarized in Table 5.8. The value of the test statistic is:

$$X^2 = .005 + 4.65 + 2.82$$

$$X^2 = 7.475$$

with degrees of freedom = $3 - 1 = 2$

The critical value for X^2 with 2 degrees of freedom at the .05 level of significance is 5.991 and therefore it can be concluded that the observed distribution of cottage sales from 1976 is not due to chance.

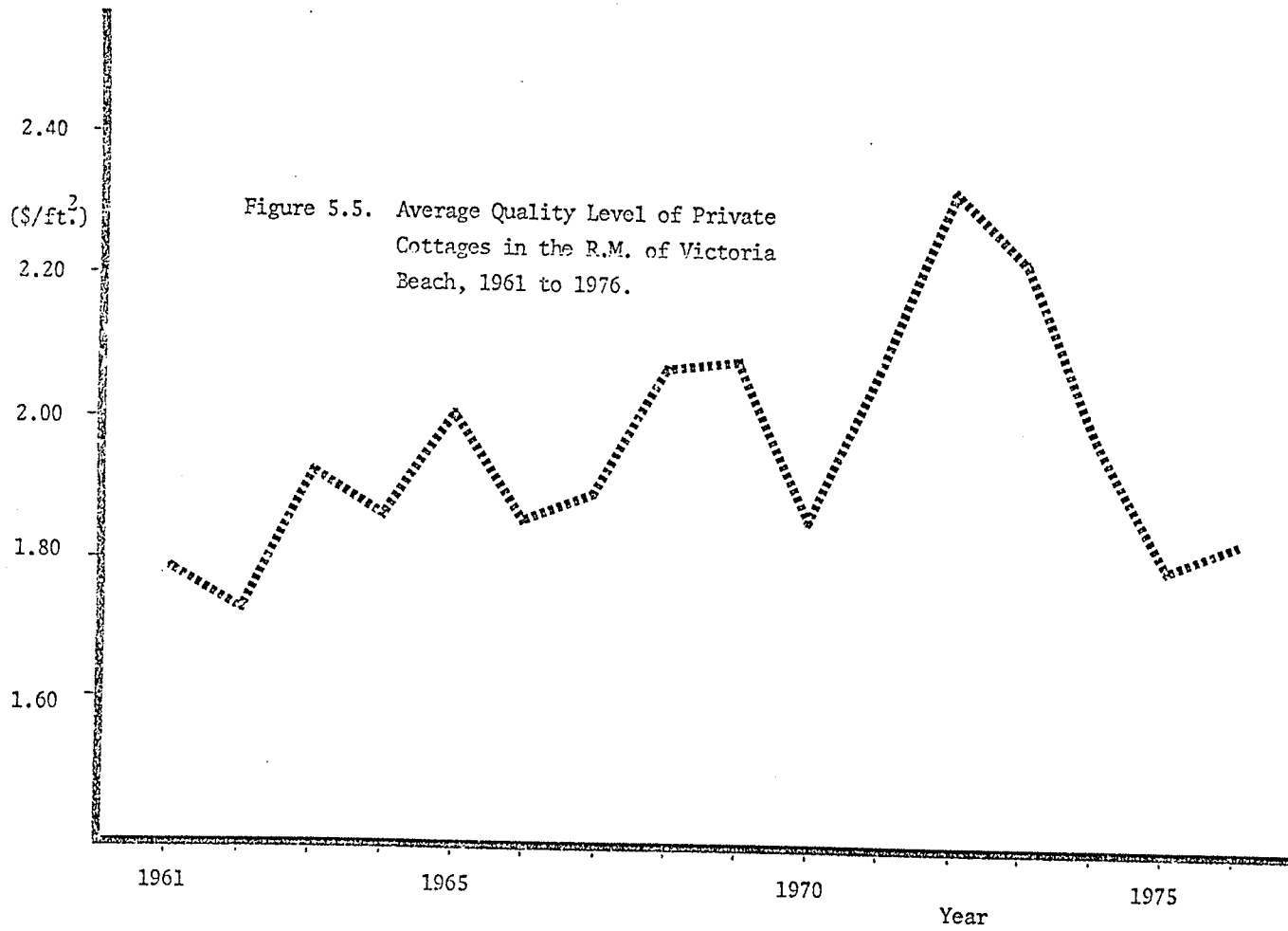
Table 5.8: Data Required to Calculate the Chi Squared
Statistic for the Distribution of 1976
Cottage Sales

	Cottage Age Category		
	to 1964	1965-1970	1971-1976
Observed Frequency	201	15	63
Expected ^a Frequency	202	26	51
$\frac{(O - E)^2}{E}$.005	4.65	2.82

^aExpected frequency is determined by dividing the number of private cottages in the Study Area in an age category by the total number of private cottages. The resultant is then multiplied by the number of cottages sold in 1976.

Responses to the multi-stage questionnaire indicate that the average quality level of new cottages may be increasing. Four factors are clearly indicated as having a positive impact on new cottage quality and the remainder are classed as having no effect or indeterminable impact. (Table 4.31)

If this does occur then the previously mentioned anomaly in the average quality level of private cottages in the R.M. of Victoria Beach may be an indication of the future. The pattern in this unit is illustrated in Figure 5.5.



It can also be hypothesized that increased use of cottages during the winter season would result in an increase in average cottage quality. A 1967 cottage study found that 43.5% of all respondents used their cottage in the winter season.¹⁵ A study completed in 1975 found that 88% of cottage owners surveyed visited their cottages during the winter and 58.9% usually stayed overnight or longer.¹⁶ If this trend towards increased winter usage is occurring then potential cottage owners might be induced to establish their new cottages so as to take advantage of winter opportunities. This would require adequate heating systems and other amenities that would show up in increased assessments.

Unfortunately, there are no concrete indications that the average quality level of new cottages is increasing. More research is necessary before any firm conclusions on this aspect can be reached.

Foonotes:

1. R.C. Bellan, "Report and Recommendations of The Winnipeg Land Prices Inquiry Commission", Province of Manitoba, Queen's Printer, 1977, p.81.
2. Ontario Department of Tourism and Information, "Analysis of Ontario Cottage Survey", Travel Research Report No. 55, Travel Research Branch, 1971, p. 71.
3. R.C. Bellan, op. cit., p.77.
4. E.T. Oswald, "An Analysis of Summer Cottaging in Manitoba", Department of Forestry and Rural Development, 1968, p. 13.
5. R.M. Kabaluk, "The Implications of Leasing Versus Selling Crown Land for Summer Homes", Masters Practicum, Natural Resource Institute, University of Manitoba, 1971, p.42.
6. E. Romanowski, "A Report on the Imputed Land Value of Cottage Lots on Crown Land", Internal Report No. 70, Research and Data Services Branch, Manitoba Department of Tourism, Recreation and Cultural Affairs, 1975.
7. However, an Ontario study "suggests that the response of recreational land prices to changes in gasoline prices will moderate the effect of gasoline price increases on recreational travel". A.J. Robson and D.T. Scheffmen, "The Crunch, the Boom and the Recreational Land Market", Canadian Journal of Economics, XI, No.1, February, 1978.
8. Manitoba Department of Tourism, Recreation and Cultural Affairs, Parks Branch, "Vacation Home Lots Summaries", 1966 and 1976.
9. From comments received in responses to Stage 1 of Multi-stage Questionnaire.
10. Ontario Department of Tourism and Information, op. cit., p. 19.
11. Ibid, p. 23.
12. L.R. Legal, "The Implications of the Use of Park and Crown Land Cottages as Permanent Residences", Masters Practicum, Natural Resource Institute, University of Manitoba, 1976, p. 37.
13. E.T. Oswald, op. cit., p.31.
14. I.W.Burr, "Applied Statistical Methods", Academic Press Inc., New York, 1974, p. 232.
15. E.T. Oswald, op. cit., p. 55.
16. L.R. Legal, op. cit., p. 44.

CHAPTER 6: CONCLUSIONS

6.1 The Problem

The number of applications for cottage lots on Crown land cannot be used to justify the planning of additional cottage lot subdivisions. Undoubtedly demand exists but the nature and degree of this demand is unknown at the present time. In order for the Parks Branch to rationally plan the development of new subdivisions and to optimize the allocation of outdoor recreation resources among competing uses the true nature and degree of demand for cottaging must be determined. To date, there has been little research done in this area.

In order to facilitate the planning of cottage development on Crown land this research proposed to determine the nature and degree of demand for cottaging in a selected area of Eastern Manitoba to the year 1986. For the purposes of this study the nature and degree of demand was understood to encompass:

1. Quantity demand - the sum of:
 - the number of cottages built on privately owned land in the selected area.
 - the number of cottages available as a result of turnover in private stock in the selected area.
2. Distribution - the location, within the selected area, of new cottages that are or will be built on privately owned land.
3. Ownership - the location of the principal residence of cottage owners.
4. Cottage Building Size - the average size of new cottages that are or will be built in the selected area.

5. Cottage Lot Size - the average size of new cottage lots in the selected area.
6. Cottage Quality - the average level of quality of new cottages in the selected area.

These aspects were chosen because they are directly relevant to crown cottage development, planning, and policy. In addition, there has been little or no previous research on these aspects in Manitoba.

6.2 The Data Sources and Research Methods

The data required for this research was obtained from two primary sources, a survey of Municipal Assessment Branch files and records, and a multi-stage questionnaire on the future of cottage development. The Municipal Assessment Branch survey was designed and carried out by the author with two objectives. These were: 1) to provide an inventory and data base for all cottages in the Study Area, and 2) to provide the necessary data for this specific research problem. The multi-stage questionnaire was designed and administered solely for the purposes of this research.

The research methods employed herein were based upon two techniques currently in use for forecasting purposes, Time Series Analysis and the Delphi Technique. Trends in the past behavior of relevant dependent variables were derived from the

data produced by the Municipal Assessment Branch survey and were statistically projected by simple linear regression techniques. In order to partially compensate for the limitations inherent in this method responses to the multi-stage questionnaire by the Relevant Expert group were used to qualify and to assess these projections. The integration of multi-stage questionnaire results with the quantitative results of the Municipal Assessment Branch Survey is summarized in Figures 6.1 to 6.4. These figures are not intended to be summaries of conclusions but rather are provided to point out the convergence and interrelatedness of two different approaches to the problem.

Figure 6.1 Aspect 1, The Demand for Cottaging

Municipal Assessment Branch Survey Results	Multi-stage Questionnaire Results	Other Input
<p>Projection 1: Total private cottage stock in 1980 and 1986 will be 7427 and 8209. Average annual increase required from 1975 is 107.</p> <p>Projection 2: Total private cottage stock in 1980 and 1986 will be 7578 and 8252. Average annual increase required from 1975 is 109.</p> <p>Projection 3: Total private cottage stock in 1980 and 1986 will be 8239 and 9698. Average annual increase required from 1975 is 243.</p>	<p>The Relevant Expert group has concluded that:</p> <ul style="list-style-type: none"> - the impact of 1 factor will cause a strong increase in cottage demand. - the impact of 5 factors will cause an increase in cottage demand. - the impact of 1 factor will cause a decrease in cottage demand. <p>Overall, an increase in the demand for cottaging is indicated.</p>	<p>Several of the positive factors identified by the Relevant Expert group were found to have had similar impacts on the Winnipeg housing market.</p> <p>Higher land prices in N.W. Ontario may be contributing to increased demand in Manitoba</p>

Conclusion: Projection 3 most accurately reflects anticipated demand for cottaging to 1986.

Figure 6.2 Aspect 2, The Average Size of New Cottages

Municipal Assessment Branch Survey Results	Multi-stage Questionnaire Results	Other Input
<p>Private Cottages: The average size of private cottages in 1980 and 1986 will be 930 and 948 square feet. The average annual rate of increase is 7.5 square feet per year.</p> <p>Crown Cottages: The average size of Crown cottages in 1980 and 1986 will be 842 and 917 square feet. The average annual rate of increase is 12.5 square feet per year.</p>	<p>The Relevant Expert group has concluded that:</p> <ul style="list-style-type: none"> - the impact of 3 factors will cause an increase in the average size of new cottages. - the impact of 1 factor will cause a decrease in the average size of new cottages. <p>Overall, an increase in the average size of new cottages is indicated.</p>	<p>The data regarding size for cottages built in earlier years may contain an upward bias. This would cause projections to be conservative.</p>

Conclusion: The projections may be regarded as minimum estimates of average cottage size in 1980 and 1986.

Figure 6.3 Aspect 3, The Average Size of New Cottage Lots

Municipal Assessment Branch
Survey Results

The average size of private cottage lots less than 1 acre in extent in 1980 and 1986 will be 16,193 ft.² and 17,500 ft.². The average annual rate of increase is 229 ft.².

Multi-stage Questionnaire
Results

The Relevant Expert group has concluded that:

- the impact of 1 factor will cause a decrease in the average size of new cottage lots.
- no factors would definitely cause an increase in the average size of new cottage lots.

Overall, neither an increase nor a decrease is anticipated in the average size of new cottage lots.

Other Input

Average cottage lot size varies among traditional and frontier regions of the Study Area.

Conclusion: This projection must be interpreted with caution as the use of average figures has obscured variation among units of the Study Area.

Figure 6.4 Aspect 4, The Level of Quality of New Cottages

Municipal Assessment Branch Survey Results	Multi-stage Questionnaire Results	Other Input
<p>No projections due to limitations in data availability.</p>	<p>The Relevant Expert group has concluded that:</p> <ul style="list-style-type: none"> - the impact of four factors will cause an increase in the level of quality of new cottages. <p>Overall, an increase in the level of quality of new cottages is indicated.</p>	<p>Increased use of cottages during the winter season may contribute to an increase in the quality of new cottages.</p>

Conclusion: The level of quality of new cottages may be increasing but no firm conclusions are possible. Additional research is necessary to establish a trend.

6.3 Conclusions

Quantity Demand

The Study Area, as of July 31, 1976, contained 8,206 cottages; 7,226 (88%) are located on privately owned land and the remaining 980 (12%) are located on Crown land. The number of private cottages grew steadily from 1961 to 1971, the average number built each year was about 111 cottages. Since 1972, however, this rate of growth has more than doubled.

A number of factors were identified as contributing to the significant increase in recent years. These are:

1. Rising family incomes and increased affluence.
2. High inflation and poor performance of securities markets made cottages an increasingly attractive form of investment.
3. Higher relative costs of cottages and lots in Northwestern Ontario induced more potential cottage owners to locate in Manitoba.

This increased rate of growth is expected to continue. Projecting the trend from 1972 to 1975 results in a total of 9,698 private cottages in 1986.

Contributing to this increased rate of growth are 6 of the 10 most significant factors affecting cottage development as identified by the Relevant Expert Group in the multi-stage questionnaire. The factors that are clearly indicated as having a positive impact on the demand for cottaging to 1986 are:

1. The level of net disposable income per household.
2. The accessibility in terms of distance and travel time of new cottage developments.
3. The degree to which cottages are viewed as investment opportunities.
4. The age structure of the population.
5. The degree of leisure time.
6. The level of personal savings.

The turnover rate among private cottages in the Study Area averaged 4.22% for the years 1971 to 1976. Assuming there will be no marked departure from this average and that the number of private cottages built annually will, on average, correspond to the trend projected for the years 1972 to 1975 quantity demand for cottaging to 1986 will be:

<u>Year</u>	<u>Number Built</u>	<u>From Turnover</u>	<u>Quantity Demand</u>
1975	268	251	519
1976	243	279	522
1977	243	283	526
1978	243	293	536
1979	243	303	546
1980	243	314	557
1981	243	324	567
1982	243	334	577
1983	243	344	587
1984	243	355	598
1985	243	365	608
1986	243	375	618

Distribution

Assessment of the distributional aspects of growth in the number of private cottages to 1986 was conducted by dividing the Study Area into 3 regions: Region A consists of Units 1-6 located on the western shore of Lake Winnipeg. Region B consists of Units 7 and 8 located along the southeastern shore of Lake Winnipeg. Region C consists of Units 9-12 east of Lake Winnipeg and bordering Whiteshell Provincial Park.

The current (1976) distribution of private cottages by region is:

Region A	3,892	53.9%
Region B	2,294	31.7%
Region C	1,040	14.4%

Based upon an analysis of the proportions of private cottages built annually in each region it is anticipated that the share of Region C will increase at the expense of the other two regions. Specifically, if the number of private cottages built annually to 1986 is assumed to follow the trend projected for the years 1972 to 1975 the number of cottages built in each region between 1977 and 1986 will be:

Region A	665
Region B	365
Region C	1,400

The resulting distribution in 1986 among the regions will then be:

Region A	4,565	47.0%
Region B	2,665	27.5%
Region C	2,476	25.5%

The projected distribution of private cottages is very much subject to supply considerations. This factor is of particular importance to the projection for Region C as it is not known if there is sufficient privately owned land available to meet the expected increase. A shortage of quality cottage land in this Region would cause an increase in public pressure for Crown cottage lots in Whiteshell Provincial Park and adjacent areas.

Ownership

The apportionment of private and Crown cottages in the Study Area among Owner's Residence Location categories was found to be:

<u>Owner's Residence Location</u>	<u>Private Cottages</u>	<u>Crown Cottages</u>
Winnipeg	82.2%	90.5%
Other Manitoba	10.6	6.6
Other Canadian	2.1	1.5
Foreign	.4	.1
No data	4.7	1.3
Total	100.0%	100.0%

This research found no indication of any substantial change in ownership patterns and it is expected that this distribution will continue to characterize the cottage market to the year 1986.

Cottage Building Size

The average size of private cottages in the Study Area is 755 ft.², only slightly larger than the 604 ft.² average for Crown cottages. Cottages less than 1000 ft.² account for 82% of all private cottages and 96% of all Crown cottages.

Since 1961 the average size of private and Crown cottages has steadily increased. Projections based on these trends indicate that the average size of private cottages will

be 948 ft.² in 1986 and that the comparable figure for Crown cottages will be 917 ft.². Due to the possibility of an upward bias in the average size of cottages built in earlier years these figures must be regarded as conservative.

Cottage Lot Size

The size of cottage lots on Crown land is a matter of government policy and therefore was not considered by this research.

The majority, 93.4%, of private cottage lots in the Study Area are less than 1 acre in extent and have an average size of 11,409 ft.². Less than 2% of private lots are 1-2 acres in extent and the remainder, 4.6%, are larger than 2 acres.

The average size of private lots less than 1 acre in extent has increased steadily since 1961. This trend is not evident among the larger lot size classes but in recent years the frequency of lots larger than 2 acres has increased.

Projecting the trend in the average size of private lots less than 1 acre in extent results in a figure of 17,568 ft.² for 1986. This must be interpreted with caution as the use of average figures has obscured variation among units of the Study Area.

Cottage Quality

Private and Crown cottages built in the Study Area between 1965 and 1968 have the highest average quality values. Those built since 1970 have the lowest values. This pattern is consistent between units with the exception of private cottages in the R.M. of Victoria Beach. In this unit cottages built since 1970 tend to have average quality values higher than those in preceding years.

The pattern of average quality values suggest that cottages are improved to their maximum level 8-10 years after they are built. An analysis of 1976 cottage sales supports this view.

Responses by the Relevant Expert group indicate that they expect the average quality level of new cottages to increase. This may be due to an increasing use of cottages during the winter season but no concrete data was available on which to base any firm conclusions.

6.4 Considerations for Government Policy on Cottage Development

The cottage market in the Eastern Region has grown steadily since 1971. Table 6.1 indicates the contribution of the various components of supply.

Table 6.1: Quantity Demand for Cottages in the Eastern Region,
1971-1976

Component	1971	1972	1973	1974	1975	1976
Increase or Decrease in Crown Cottage Lot Leases, Eastern Region	13	(-2)	4	25	98	126
No. of Cottages Built on Private Land in the Study Area	116	171	236	230	268	191 ^a
Turnover of Private Cottages in the Study Area	176	273	287	279	251	279
Turnover of Crown Cottages ^b in the Eastern Region	211	212	212	234	236	241
Total	516	654	739	768	853	837

^a To July 31, 1976.

^b Based upon a turnover rate of 5.4%.

The total figures must be regarded as minimum estimates. This is due to the fact that private cottages outside of the Study Area, but within the Eastern Region, were not considered. Excluding those Manitobans buying in N.W. Ontario, the current market may be close to 1,000 cottages per annum.

The scope for government involvement in this area is considerable. The Crown owns choice cottage land in Whiteshell Provincial Park and in the area along and northeast of the Winnipeg River. There is also the Grindstone Provincial Recreation Park which is just beginning to be developed. An additional, favorable factor is that cottage lots in Crown subdivisions are perceived as superior to those in private subdivisions. This was determined qualitatively by Romanowski¹ in a 1975 comparative survey of Crown and private lots and is also evidenced by the difference in the average price paid for cottages on Crown land as compared to that for private cottages.

Table 6.2: Comparison of Average Prices Paid for Crown^a and Private Cottages, 1972-1974

	1972	1973	1974
Private Cottages	\$5,324.00	\$6,366.00	\$7,736.00
Crown Cottages	\$7,898.00	\$9,706.00	\$9,434.00

^a Source: Research and Data Services Branch, Manitoba Department of Tourism, Recreation and Cultural Affairs, 1977.

This study has shown that the average quality level of private and Crown cottages is approximately equal and therefore it can be assumed that the difference in price reflects a premium for Crown cottage lots.

Crown cottage lots are currently being offered to Manitobans via a lottery system. The essential cost to a successful applicant is a development fee of \$1,200.00 and an annual lease fee of \$50.00 or \$75.00 depending upon the location of the lot (back-tier or lake-front). This is substantially less than what the value would be in the private sector and is one of the principal reasons behind the large number of applications being received for the draws.

The current system allows the successful applicant to make a windfall profit on his investment by erecting a cottage on the lot and selling it shortly thereafter. Although there is no evidence that this is a current problem, the potential does exist.

The lower cost, in effect a subsidy, will attract buyers who would not otherwise participate because they could not afford cottages in the private market. The ultimate effect of continuing this practice will be to increase the overall rate of growth in cottaging. The impact upon demand in the private market will be negligible.

Footnote

1. E. Romanowski, "A Report on the Imputed Land Value of Cottage Lots on Crown Land", Internal Report No. 70, Research and Data Services Branch, Manitoba Department of Tourism, Recreation and Cultural Affairs, 1975.

APPENDIX A

S.P.S.S. Program Used to
Process Municipal Assessment
Branch Survey Data

STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES

10/14/77

SPSS FOR OS/360, VERSION 4, RELEASE 7.0, MARCH, 1977

DEFAULT SPACE ALLOCATION..	ALLOWS FOR..	989 TRANSFORMATIONS
WORKSPACE 692608 BYTES		3957 RECODE VALUES + LAG VARIABLES
TRANSPACE 99944 BYTES		15834 IF/COMPUTE OPERATIONS
EDIT NUMBERED	YES	00000230
RUN NAME	COTTAGE STUDY 1977	00000240
VARIABLE LIST	FORM,UNIT,CROWN,AGE,PLAN,LASMT,SASMT,BSIZE,LSIZE,HOME,SALESS,SALEY,SALEMM	00000250
INPUT MEDIUM	OTHER	00000270
N OF CASES	UNKNDWN	00000280
INPUT FORMAT	FIXED (F1.0,F2.0-F1.0,F2.0,3F5.0,F4.0,F7.0,F1.0,F6.0,2F2.0)	00000290
		00000300
		00000310

ACCORDING TO YOUR INPUT FORMAT, VARIABLES ARE TO BE READ AS FOLLOWS

VARIABLE	FORMAT	RECORD	COLUMNS
FORM	F 1.0	1	1- 1
UNIT	F 2.0	1	2- 3
CROWN	F 1.0	1	4- 4
AGE	F 2.0	1	5- 6
PLAN	F 5.0	1	7- 11
LASMT	F 5.0	1	12- 16
SASMT	F 5.0	1	17- 21
BSIZE	F 4.0	1	22- 25
LSIZE	F 7.0	1	26- 32
HOME	F 1.0	1	33- 33
SALESS	F 6.0	1	34- 39
SALEY	F 2.0	1	40- 41
SALEMM	F 2.0	1	42- 43

THE INPUT FORMAT PROVIDES FOR 13 VARIABLES. 13 WILL BE READ
IT PROVIDES FOR 1 RECORDS ('CARDS') PER CASE. A MAXIMUM OF 43 'COLUMNS' ARE USED ON A RECORD.

ALLOCATE TRANSPACE=6000 00000320

SPECIFIED SPACE ALLOCATION..	ALLOWS FOR..	30 TRANSFORMATIONS
WORKSPACE 78552 BYTES		240 RECODE VALUES + LAG VARIABLES
TRANSPACE 6000 BYTES		960 IF/COMPUTE OPERATIONS
SELECT IF	(FORM EQ 1 OR 2)	
IF	(FORM EQ 1) SALESS = -2	00000330
IF	(FORM EQ 1) SALEY = -2	00000340
IF	(FORM EQ 1) SALEMM = -2	00000350
IF	(FORM EQ 2) CROWN = -2	00000360
IF	(FORM EQ 2) AGE = -2	00000370
IF	(FORM EQ 2) LSIZE = -2	00000380
IF	(FORM EQ 2) BSIZE = -2	00000390
IF	(FORM EQ 2) HOME = -2	00000400
COMPUTE	FORM2 = FORM	00000410
		00000420

COMPUTE	TASMT = 0	00000430
IF	(0 LT LASMT AND BASMT) TASMT = LASMT + BASMT	00000440
COMPUTE	ASRATIO = SALES\$	00000450
COMPUTE	TOTAS = BSIZE	00000460
COMPUTE	BLDAS = BSIZE	00000470
COMPUTE	BCLASS = BSIZE	00000480
COMPUTE	LCLASS = LSIZE	00000490
IF	(LSIZE GT 0) LSIZE = LSIZE / 100	00000500
IF	(BSIZE GT 0) TOTAS = TASMT / BSIZE	00000510
IF	(BSIZE GT 0) BLDAS = BASMT / BSIZE	00000520
IF	(BSIZE GT 0) BSIZE = BSIZE / 100	00000530
IF	(SALES\$ GT 0) ASRATIO = TASMT * 100 / SALES\$	00000540
COMPUTE	LSS = LASMT	00000550
COMPUTE	BSS = BASMT	00000560
COMPUTE	TSS = TASMT	00000570
COMPUTE	LSZ = LSIZE	00000580
COMPUTE	BSZ = BSIZE	00000590
COMPUTE	S\$ = SALES\$	00000600
COMPUTE	ASR = ASRATIO	00000610
COMPUTE	TAS = TOTAS	00000620
COMPUTE	BAS = BLDAS	00000630
RECODE	UNIT,SALEMM (0,14 THRU HIGHEST=13)/	00000640
	CRWN(2 THRU HIGHEST=-1) (0=2)/	00000650
	AGE (50 THRU 59=60) (0 THRU 49,78 THRU HIGHEST=77)/	00000660
	HOME (1=3) (0,7 THRU HIGHEST=6)/	00000670
	SALEY(0 THRU 70,78 THRU HIGHEST=77)/	00000680
	BCLASS(1 THRU 500=1) (500 THRU 1000=2) (1000 THRU 1500=3) (1500 THRU 2000=4) (2000 THRU HIGHEST=5) (0=6)/	00000690
	LCLASS(1 THRU 43560=1) (43560 THRU 87120=2) (87120 THRU HIGHEST=3) (0=4)/	00000700
	LSS,BSS,TSS,LSZ,BSZ,S\$,ASR,TAS,BAS(0=0)	00000710
	(0 THRU HIGHEST=1)/	00000720
IF	(AGE GT -2) AGE = AGE - 59	00000730
IF	(SALEY GT -2) SALEY = SALEY - 70	00000740
VAR LABELS	FORM,FORM CODE - POPULATION/	00000750
	FORM2,FORM CODE - SALES/	00000760
	UNIT,RM LGD OR TOWN/	00000770
	CRWN,CROWN LAND?/	00000780
	AGE,YEAR WHEN BUILT 1959 + VALUE/	00000790
	PLAN,SUBDIVISION/	00000800
	LASMT,LAND ASSESSMENT/	00000810
	LSS,LAND ASSESS VALID/	00000820
	BASMT,BUILDING ASSESSMENT/	00000830
	BSS,BLD ASSESS VALID/	00000840
	LSIZE,LOT SIZE IN 100 SQ FT/	00000850
	LSZ,LAND SIZE VALID/	00000860
	BSIZE,BUILDING SIZE IN 100 SQ FT/	00000870
	BSZ,BLD SIZE VALID/	00000880
	HOME,OWNER'S RESIDENCE/	00000890
	SALES\$,SALE PRICE/	00000900
	S\$,SALE PRICE VALID/	00000910
	SALEY\$,SALE YEAR/	00000920
	SALEYM,SALE MONTH/	00000930
	TASMT,TOTAL ASSESSMENT \$ B+L/	00000940
		00000950
		00000960

	TSS, TOTAL ASSESS VALID/	00000970
	ASRATIO, ASSESS-SALE RATIO %/	00000980
	ASRATIO, ASSESS-SALE RATIO VALID/	00000990
	TOTAS, TOTAL ASSES-B SIZE \$ PER SQ FT/	00001000
	BLDAS, BUILDING ASSES-SIZE \$ PER SQ FT/	00001010
	TAS, T ASSESS-SIZE VALID/	00001020
	PAS, B ASSESS-SIZE VALID/	00001030
	BCLASS, BUILDING CLASS/	00001040
	LCLASS, LBT CLASS ACRES APPROX/	00001050
VALUE LABELS	FORM, FORM2(1) POPULATION(2) SALES DATA/	00001060
	UNIT(13) MISSED(1) BIFRST R M(2) GIMLI RM	00001070
	(3) GIMLI TN(4) RM D ST ANDREWS	00001080
	(5) WINNIPEG BEACH T(6) DUNNOTTAK TOWN	00001090
	(7) RM D ST CLEMENTS(8) VICTORIA BCH RM	00001100
	(9) RM LAC DU BONNET(10) ALEXANDER I G D	00001110
	(11) BROKENHEAD R M(12) WHITEMOUTH R M/	00001120
	LSS, BSS, TSS, LSZ, BSZ, S\$, ASR, BAS, TAS,	00001130
	CROWN(-1) MISS CODED(2) NO(1) YES/	00001140
	AGE(10) MISSED(0) UP TO 1950/	00001150
	LASMT, BASMT, BSIZE, LSIZE, BLDAS,	00001160
	SALES\$, TASMT, ASRATIO(0) MISSED/	00001170
	SALEY(7) MISSED/	00001180
	HOME(6) MISSED(2) WINNIPEG(3) OTHER MANITOBA	00001190
	(4) OTHER CANADA(5) FOREIGN/	00001200
	BCLASS(6) MISSED(1) 1 - 500 SQ FT(2) > - 1000 SQ FT	00001210
	(3) > - 1500 SQ FT(4) > - 2000 SQ FT(5) > 2000 SQ FT/	00001220
	LCLASS(4) MISSED(1) UP TO 1 ACRE(2) > - 2 AC(3) > 2 ACRES/	00001230
	SALEMM(13) MISSED(1) JAN(2) FEB(3) MAR(4) APR(5) MAY(6) JUNE	00001240
	(7) JULY(8) AUG(9) SEPT(10) OCT(11) NOV(12) DEC/	00001250
MISSING VALUES	FORM, FORM2, LASMT, BASMT, TASMT, LSIZE, BSIZE, BLDAS, SALES\$,	00001260
	ASRATIO, LSS, BSS, TSS, LSZ, BSZ, S\$, ASR, TAS, BAS (-2, 0)/	00001270
	UNIT, SALEMM(-2, 13)/ HOME, BCLASS(-2, 6)/ LCLASS(-2, 4)/	00001280
	AGE(-2, 10)/ SALEY(-2, 7)/ CROWN(-2, -1)/	00001290
CROSSTABS	VARIABLES=UNIT, SALEMM(1, 13)/ LCLASS(1, 4)/ SALEY(1, 7)/	00001300
	AGE(1, 10)/ HOME, BCLASS(1, 6)/ CROWN(1, 2)/ FORM2(2, 2)/	00001310
	FORM, LSZ, BSZ, BAS, TAS, LSS, BSS, TSS, S\$, ASR(1, 1)/	00001320
TABLES=	AGE BY UNIT/	00001330
	AGE BY UNIT BY CROWN BY FORM TO BSZ, LSS TO TSS/	00001340
	HOME BY AGE BY FORM, UNIT BY CROWN	00001350
	BY FORM, BAS TO TSS/	00001360
	HOME BY UNIT BY FORM, AGE BY CROWN BY BSZ, LSZ/	00001370
	LCLASS, BCLASS BY HOME BY FORM, UNIT BY CROWN	00001380
	BY LSZ TO BAS/	00001390
	LCLASS, BCLASS BY AGE BY CROWN BY FORM, UNIT	00001400
	BY FORM TO BAS, BSS/	00001410
	SALEMM BY SALEY BY FORM2, UNIT	00001420
	BY FORM2, LSS TO ASR/	00001430
OPTIONS	7, 9	00001440
STATISTICS	1, 2, 10, 11	00001450
		00001460

TRANSPACE REQUIRED.. 5400 BYTES
 0 TRANSFORMATIONS
 32 RECORD VALUES + LAG VARIABLES
 132 IF/COMPUTE OPERATIONS
 READ INPUT DATA
 ALLCCATE TRANSPACE=0 00001470
 00001480

SPECIFIED SPACE ALLOCATION.. ALL DNS FOR.. 0 TRANSFORMATIONS
 WORKSPACE 791552 BYTES 0 RECORD VALUES + LAG VARIABLES
 TRANSPACE 0 BYTES 0 IF/COMPUTE OPERATIONS

BREAKDOWN	VARIABLES=	00001490
	LSIZE,BSIZE,BLDAS,TOTAS,LASMT,BASMT,TASMT,	00001500
	SALES,ASRATIO(0,HI)/UNIT,SALEMM(1,12)/	00001510
	SALEY(1,6)/HOME,BCLASS(1,5)/CROWN(1,2)/	00001520
	LCLASS(1,3)/AGE(1,17)/FORM2(2,2)/FORM(1,1)/	00001530
CROSSBREAK=		00001540
	LASMT TO TASMT,LSIZE,BSIZE BY AGE BY UNIT	00001550
	BY CROWN/	00001560
	BLDAS TO TASMT BY HOME BY AGE BY CROWN	00001570
	BY FORM,UNIT/	00001580
	LSIZE,BSIZE BY HOME BY UNIT BY CROWN	00001590
	BY FORM,AGE/	00001600
	LSIZE TO BLDAS,BASMT BY LCLASS,BCLASS BY AGE	00001610
	BY CROWN BY FORM,UNIT/	00001620
	LSIZE TO BLDAS BY LCLASS,BCLASS BY HOME	00001630
	BY CROWN BY FORM,UNIT/	00001640
	LASMT TO ASRATIO BY SALEMM BY SALEY	00001650
	BY FORM2,UNIT/	00001660
OPTIONS	2	00001670
STATISTICS	3,4,12	

**** BREAKDOWN PROBLEM REQUIRES 787080 BYTES WORKSPACE, NOT INCLUDING VALUE LABELS ****

FINISH 00001680

NORMAL END OF JOB
 146 CONTROL CARDS WERE PROCESSED.
 0 ERRORS WERE DETECTED.

APPENDIX B

Multi-stage Questionnaire

Mailings 1 - 4

October 28, 1977.

Dear

First, let me thank you for agreeing to participate in this research on the future of cottage development in Manitoba. I am sure this will be a valuable learning experience for all of us.

This research is being conducted among a cross-section of public and private sector representatives — people like yourself who are most qualified to understand and to anticipate both the present and the future.

The procedure is simple and will require only a few minutes of your time per week. Enclosed is the first question and a return envelope. Subsequent questions will be based upon the results of those preceding them so please return your answers as soon as possible. All responses will be treated as confidential information.

When the series is complete a summary of the results and an explanation of the goals and objectives of the research process will be sent to every participant.

If you have any further questions please do not hesitate to call. I can be reached at either
again for your support. Thank you

Very sincerely yours,

Kerry W. O'Shaughnessy.

KWO/na

Figure 1

THE FUTURE OF COTTAGE DEVELOPMENT IN MANITOBA

Question One:

Please list and briefly describe the major factors or trends that, in your considered opinion, are presently affecting or will, in the next 10 years, affect cottage development in Manitoba.

Figure 2

Factor or Trend	Brief Description

Figure 3

December 14, 1977.

Dear Participant:

Thank you very much for your responses to Stage one of this research on cottage development in Manitoba.

Stage two is enclosed. It consists of a master list of all factors that were identified in Stage one, an instruction sheet and 2 tables for your responses.

In this stage I would like you to select the 10 most significant factors and the 10 least significant factors. It does not matter whether the effect of the factors is positive or negative. Simply choose those that are most and least significant according to the instructions.

I will be phoning to collect your responses during the coming week.

Thank you again for your participation and have a very happy holiday.

Sincerely yours,

K. O'Shaughnessy.

Figure 4

MASTER LIST OF FACTORS AFFECTING COTTAGE DEVELOPMENT

- _____ 1. The level of net disposable income per household.
- _____ 2. The rate of inflation.
- _____ 3. The rate of unemployment.
- _____ 4. The increasing cost of energy.
- _____ 5. The costs of other consumer goods and services.
- _____ 6. The costs of cottages and cottage lots.
- _____ 7. The level of taxation and maintenance costs of cottages.
- _____ 8. The degree to which cottages are viewed as investment opportunities.
- _____ 9. Tax incentives to cottage ownership.
- _____ 10. The level of personal savings.
- _____ 11. The degree of environmental protection regulation by the provincial government.
- _____ 12. Provincial government land use policy with respect to Crown, agricultural and Park lands.
- _____ 13. Municipal government attitudes towards cottage development.
- _____ 14. The degree of leisure time.
- _____ 15. General population increase.
- _____ 16. The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing).
- _____ 17. The structure of employment, (i.e. percentages of white collar and professional workers relative to blue collar workers).
- _____ 18. The degree of urbanization.
- _____ 19. Changing residential modes, (i.e. single-detached home ownership vs. apartment or condominium).
- _____ 20. Improved planning and design of cottages and subdivisions.
- _____ 21. The popularity of year round recreation activities.
- _____ 22. The general desire for the "wilderness experience".
- _____ 23. The popularity of winter vacations.
- _____ 24. The level of winter foreign vacations.
- _____ 25. The availability and cost of alternative recreation opportunities.
- _____ 26. The accessibility in terms of distance and travel time of new cottage developments.
- _____ 27. The level of services (hydro, telephone, etc.) available in new cottage developments.
- _____ 28. The quality of new cottage lands in terms of water quality, local environment and site construction ease.
- _____ 29. The national political climate, (i.e. Quebec separation).

Figure 5

INSTRUCTIONS:

- Step 1: Please read over the master list of factors affecting cottage development.
- Step 2: From this list select the 10 factors that you consider to be most significant to cottage development in Manitoba. Indicate these by placing an X beside the number of the factor in the space provided.
- Step 3: Now, considering only the 10 factors you have marked with an X, please rank these factors in order of importance. Use Table 1; in box 1, write the number of the factor that you consider is absolutely the most significant, in box 2, the number of the next most significant and so on.
- Step 4: Return to the master list and select, from those remaining, the 10 factors that you consider to be the least significant to cottage development in Manitoba. Indicate these by placing a 0 beside the number of the factors in the space provided.
- Step 5: Now, considering only the 10 factors you have marked with a 0, please rank these factors in order of increasing significance. Use Table 2; in box 1 write the number of the factor that you consider is absolutely the least significant; in box 2, the next least significant and so on.
- Step 6: Save Tables 1 and 2. I will be collecting the responses by telephone after December , 1977.

Figure 6

TABLE 1

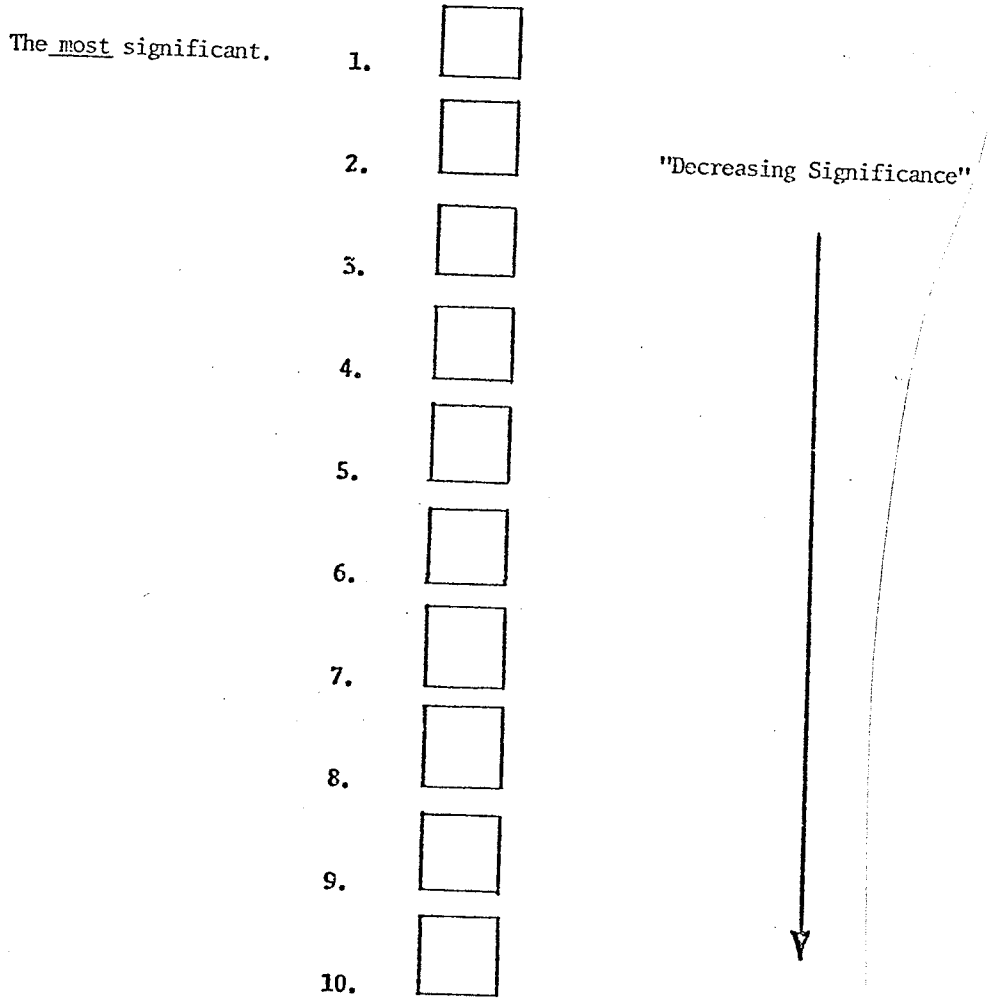


Figure 7

TABLE 2

The least significant.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

"Increasing Significance"



Figure 8

January 30, 1978.

Dear Participant:

Thank you very much for your responses to Stage Two of this research on cottage development in Manitoba.

Stage Three is enclosed. It consists of a ranked list of the 10 most significant factors affecting cottage development that were derived from Stage Two, an instruction sheet, and a scoring sheet for your responses.

In this stage I would like you to indicate what you consider to be the most probable impact of each of the factors on four aspects of cottage development. Use your own judgement and indicate the impacts according to the instructions. I will be phoning to collect your responses beginning February 6, 1978.

Thank you very much for your participation.

Sincerely yours,

K. O'Shaughnessy.

Figure 9

RANKED LIST OF FACTORS

- 1) The level of net disposable income per household.
- 2) The accessibility in terms of distance and travel time of new cottage developments.
- 3) The costs of cottages and cottage lots.
- 4) The degree to which cottages are viewed as investment opportunities.
- 5) The rate of inflation.
- 6) The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing).
- 7) The degree of leisure time.
- 8) The level of personal savings.
- 9) The quality of new cottage lands in terms of water quality, local environment and site construction ease.
- 10) The availability and cost of alternative recreation opportunities.

Figure 10

INSTRUCTIONS:

In Stage Two we identified the 10 most significant factors affecting cottage development to 1986. These are listed on the page entitled Ranked List of Factors.

Now, I would like you to indicate the impact that these factors will have on 4 aspects of cottage development between now and 1986.

The 4 aspects of cottage development are:

- 1) The demand for cottaging.
- 2) The average size of new cottages. (square foot area)
- 3) The average size of new cottage lots.
- 4) The level of quality of new cottages. (in terms of the quality of construction, plumbing and heating facilities insulation, and internal and external finishing).

The impact of any factor on these aspects is to be indicated with the following scale:

- ++ Strong Increase
- + Increase
- ° No effect or indeterminable
- Decrease
- Strong decrease

Use your own judgement as to what the impact of each factor will be between now and 1986.

Start with Aspect 1, the demand for cottaging. Indicate the impact of FACTOR ONE on this aspect by placing one of the symbols (++,+,°,--,--) in the space provided. Do the same for factors 2 to 10 and then proceed to Aspect 2 and so on.

Save the scoring sheets, I will be collecting the responses by phone starting February 6, 1978.

Figure 11

SCORING SHEET

Aspect 1: The demand for cottaging.

1. _____

6. _____

2. _____

7. _____

3. _____

8. _____

4. _____

9. _____

5. _____

10. _____

Aspect 2: The average size of new cottages.

1. _____

6. _____

2. _____

7. _____

3. _____

8. _____

4. _____

9. _____

5. _____

10. _____

Figure 12

Aspect 3: The average size of new cottage lots.

1. _____

6. _____

2. _____

7. _____

3. _____

8. _____

4. _____

9. _____

5. _____

10. _____

Aspect 4: The level of quality of new cottages.

1. _____

6. _____

2. _____

7. _____

3. _____

8. _____

4. _____

9. _____

5. _____

10. _____

Figure 12 (cont'd)

February 20, 1978.

Dear Participant:

Thank you very much for your responses to Stage Three of this research on cottage development in Manitoba.

This will be the last round of questions you will receive. It is similar to the one previous but in this stage we are trying to move towards consensus on the evaluation of the impacts.

As soon as the data from this research has been analyzed I will be sending a summary of the results and an explanation of the goals and objectives of the process to every participant.

Your responses to this stage will be collected by telephone beginning February 27, 1978. Thank you again for your support.

Sincerely yours,

K. O'Shaughnessy.

Figure 13

RANKED LIST OF FACTORS

- 1) The level of net disposable income per household.
- 2) The accessibility in terms of distance and travel time of new cottage developments.
- 3) The costs of cottages and cottage lots.
- 4) The degree to which cottages are viewed as investment opportunities.
- 5) The rate of inflation.
- 6) The age structure of the population, (i.e. baby boom generation is now 25-30 years old and the percentage of older and retired persons is increasing).
- 7) The degree of leisure time.
- 8) The level of personal savings.
- 9) The quality of new cottage lands in terms of water quality, local environment and site construction ease.
- 10) The availability and cost of alternative recreation opportunities.

Figure 14

INSTRUCTIONS:

In Stage 3 we evaluated the impact of the 10 most significant factors affecting cottage development to 1986 on 4 separate aspects of cottage development.

The 10 most significant factors are listed on the page entitled Ranked List of Factors.

The 4 aspects of cottage development are:

1. The demand for cottaging.
2. The average size of new cottages. (square foot area)
3. The average size of new cottage lots.
4. The level of quality of new cottages. (in terms of the quality of construction, plumbing and heating facilities, insulation, and internal and external finishing).

The impact of any factor on these aspects is to be indicated with the following scale:

- ++ Strong Increase
- + Increase
- o No effect or indeterminable
- Decrease
- Strong Decrease

The scoring sheets for Stage 4 display the proportion of responses received from all participants in Stage 3. Impact choices which received a low proportion of responses previously are blacked out and are not available in this round.

Now, I would like you to again evaluate the impact of each factor on each aspect within the choice available. Please use your own judgement and the information on the group's rating from Stage 3 to make your choice in this round.

Start with Aspect 1, the demand for cottaging. Indicate the impact of Factor One by placing a check mark in the appropriate space. Do the same for factors 2 to 10 and then proceed to Aspect 2 and so on.

Save the scoring sheets, I will be collecting the responses by phone starting February 27, 1978.

Aspect 1: The demand for cottaging

Factor	Group Score From Stage 3 (percent)					Stage 4 Choice				
	--	-	0	+	++	--	-	0	+	++
1	6	6	0	31	57	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
2	6	25	19	44	6	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
3	6	38	25	19	12	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
4	6	12	19	51	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
5	6	12	25	38	19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
6	0	6	25	38	31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
7	0	0	25	63	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
8	0	12	31	45	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
9	0	6	75	19	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
10	6	38	18	38	0	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

Figure 16

Aspect 2: The average size of new cottages.

Factor	Group Score From Stage 3 (percent)					Stage 4 Choice				
	--	-	0	+	++	--	-	0	+	++
1	0	19	12	25	44					
2	0	12	76	6	6	Consensus achieved				
3	6	64	12	6	12	Consensus achieved				
4	0	6	44	44	6					
5	0	38	50	0	12					
6	0	38	50	12	0					
7	6	0	56	38	0					
8	0	12	45	31	12					
9	0	12	63	25	0					
10	12	12	64	12	0	Consensus achieved				

Figure 17

Aspect 3: The average size of new cottages lots.

Factor	Group Score From Stage 3 (percent)					Stage 4 Choice				
	--	-	0	+	++	--	-	0	+	++
1	12	19	32	25	12					
2	12	6	70	12	0	Consensus achieved				
3	6	70	12	12	0	Consensus achieved				
4	0	6	31	63	0					
5	0	31	50	19	0					
6	0	12	82	6	0	Consensus achieved				
7	0	0	56	38	6					
8	0	12	44	44	0					
9	0	12	45	31	12					
10	0	25	69	6	0					

Figure 18

Aspect 4: The level of quality of new cottages

Factor	Group Score From Stage 3 (percent)					Stage 4 Choice				
	--	-	0	+	++	--	-	0	+	++
1	0	6	12	44	38					
2	0	12	63	19	6					
3	0	44	25	19	12					
4	0	6	19	63	12					
5	0	37	37	20	6					
6	0	6	57	31	6					
7	0	6	25	63	6					
8	0	12	19	63	6					
9	0	6	50	38	6					
10	6	19	69	6	0					

Figure 19

APPENDIX C

Data Required to Calculate Regression Equations

Table 1: Data Required to Calculate the Regression Line for Period 1960 to 1975 (Projection One)

Year	X	Y	x	y
1960	1	4,331	-7.5	- 894
1961	2	4,446	-6.5	- 779
1962	3	4,552	-5.5	- 673
1963	4	4,665	-4.5	- 560
1964	5	4,807	-3.5	- 418
1965	6	4,909	-2.5	- 316
1966	7	4,994	-1.5	- 231
1967	8	5,074	- .5	- 151
1968	9	5,174	.5	- 51
1969	10	5,319	1.5	94
1970	11	5,438	2.5	213
1971	12	5,554	3.5	329
1972	13	5,725	4.5	500
1973	14	5,961	5.5	736
1974	15	6,191	6.5	966
1975	16	6,459	7.5	1234
Total	136	83,599		

$$\begin{aligned} \bar{X} &= 8.5 & \sum xy &= 44296.5 \\ \bar{Y} &= 5225 & \sum y^2 &= 5,936,003 \\ \sum x^2 &= 340 & n &= 16 \end{aligned}$$

$$b = \frac{\sum xy}{\sum x^2} = 130.28$$

$$a = \bar{Y} - b\bar{X} = 4117.56$$

$$r^2 = \frac{b \sum xy}{\sum y^2} = .972$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum xy)} = 108.58$$

Table 2: Data Required to Calculate the Regression Line for Period 1960 to 1971 (Projection Two)

Year	X	Y	x	y
1960	1	4,331	-5.5	-608
1961	2	4,446	-4.5	-493
1962	3	4,552	-3.5	-387
1963	4	4,665	-2.5	-274
1964	5	4,807	-1.5	-132
1965	6	4,909	-.5	-30
1966	7	4,994	.5	55
1967	8	5,074	1.5	135
1968	9	5,174	2.5	235
1969	10	5,319	3.5	380
1970	11	5,438	4.5	499
1971	12	5,554	5.5	615
Total	78	59,263		

$$\bar{X} = 6.5$$

$$\sum xy = 15,590.5$$

$$\bar{Y} = 4939$$

$$\sum y^2 = 1,703,983$$

$$\sum x^2 = 143$$

$$n = 12$$

$$b = \frac{\sum xy}{\sum x^2} = 109.02$$

$$a = \bar{Y} - b\bar{X} = 4230.37$$

$$r^2 = \frac{b \sum xy}{\sum y^2} = .997$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum xy)} = 20.75$$

Table 3: Data Required to Calculate the Regression Line for Period 1972 to 1975 (Projection 3)

Year	X	Y	x	y
1972	1	5,725	-1.5	-359
1973	2	5,961	- .5	-123
1974	3	6,191	.5	107
1975	4	6,459	1.5	375
Total	10	24,336		

$$\bar{X} = 2.5$$

$$\sum xy = 1216$$

$$\bar{Y} = 6084$$

$$\sum y^2 = 296,084$$

$$\sum x^2 = 5$$

$$n = 4$$

$$b = \frac{\sum xy}{\sum x^2} = 243.2$$

$$a = \bar{Y} - b\bar{X} = 5476$$

$$r^2 = \frac{b \sum xy}{\sum y^2} = .999$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum xy)} = 13.28$$

Table 4: Data Required to Calculate the Regression Line for Region A

Year	X	Y	x	y
1961	1	50	-7	10.5
1962	2	42	-6	2.5
1963	3	37	-5	-2.5
1964	4	40	-4	.5
1965	5	45	-3	5.5
1966	6	46	-2	6.5
1967	7	39	-1	-.5
1968	8	50	0	10.5
1969	9	38	1	-1.5
1970	10	27	2	-12.5
1971	11	46	3	6.5
1972	12	32	4	-7.5
1973	13	34	5	-5.5
1974	14	29	6	-10.5
1975	15	37	7	-2.5
Total	120	592		

$$\begin{aligned}\bar{X} &= 8 & \sum y^2 &= 709.75 \\ \bar{Y} &= 39.5 & \sum xy &= -252 \\ \sum x^2 &= 280 & n &= 15\end{aligned}$$

$$b = \frac{\sum xy}{\sum x^2} = -.9$$

$$a = \bar{Y} - b\bar{X} = 46.7$$

$$r^2 = \frac{b \sum xy}{\sum y^2} = .319$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum xy)} = 6.1$$

Table 5: Data Required to Calculate the Regression Line for Region B

Year	X	Y	x	y
1961	1	40	-7	6.3
1962	2	46	-6	12.3
1963	3	49	-5	15.3
1964	4	31	-4	-2.7
1965	5	29	-3	-4.7
1966	6	34	-2	.3
1967	7	40	-1	6.3
1968	8	34	0	.3
1969	9	36	1	2.3
1970	10	41	2	6.3
1971	11	29	3	-4.7
1972	12	21	4	-12.7
1973	13	27	5	-6.7
1974	14	24	6	-9.7
1975	15	24	7	-9.7
Total	120	505		

$$\begin{aligned} \bar{X} &= 8 & \sum y^2 &= 955.75 \\ \bar{Y} &= 33.7 & \sum xy &= -386 \\ \sum x^2 &= 280 & n &= 15 \\ a &= \frac{\sum xy}{\sum x^2} = -1.38 \\ b &= \bar{Y} - b\bar{X} = 44.7 \\ r^2 &= \frac{b \sum xy}{\sum y^2} = .557 \\ SEE &= \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum xy)} = 5.7 \end{aligned}$$

Table 6: Data Required to Calculate the Regression Line for Region C

Year	X	Y	x	y
1961	1	10	-7	-16.9
1962	2	12	-6	-14.9
1963	3	14	-5	-12.9
1964	4	29	-4	-2.1
1965	5	26	-3	-.9
1966	6	20	-2	-6.9
1967	7	21	-1	-5.9
1968	8	16	0	-10.9
1969	9	26	1	-.9
1970	10	32	2	5.1
1971	11	25	3	-1.9
1972	12	47	4	20.1
1973	13	39	5	12.1
1974	14	47	6	20.1
1975	15	39	7	12.1
Total	120	403		

$$\bar{X} = 8 \qquad \sum y^2 = 2044.55$$

$$\bar{Y} = 26.9 \qquad \sum xy = 636$$

$$\sum x^2 = 280 \qquad n = 15$$

$$b = \frac{\sum xy}{\sum x^2} = 2.27$$

$$a = \bar{Y} - b\bar{X} = 8.74$$

$$r^2 = \frac{b \sum xy}{\sum y^2} = .706$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum xy)} = 6.8$$

Table 7: Data Required to Calculate the Regression Line for Private Cottage Size

Year	X	Y	x	y
1961	1	732	-7	- 81
1962	2	796	-6	- 17
1963	3	799	-5	- 14
1964	4	776	-4	- 37
1965	5	861	-3	48
1966	6	760	-2	- 53
1967	7	739	-1	- 74
1968	8	871	0	58
1969	9	783	1	- 30
1970	10	812	2	- 1
1971	11	834	3	21
1972	12	821	4	8
1973	13	842	5	29
1974	14	830	6	17
1975	15	937	7	124
Total	120	12,193		

$$\bar{X} = 8 \qquad \sum y^2 = 40280$$

$$\bar{Y} = 813 \qquad \sum x y = 2101$$

$$\sum x^2 = 280 \qquad n = 15$$

$$b = \frac{\sum x y}{\sum x^2} = 7.5$$

$$a = \bar{Y} - b\bar{X} = 753$$

$$r^2 = \frac{b \sum x y}{\sum y^2} = .391$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum x y)} = 43.4$$

Table 8: Data Required to Calculate the Regression Line for Crown Cottage Size

Year	X	Y	x	y
1961	1	626	-7	-66
1962	2	650	-6	-42
1963	3	666	-5	-26
1964	4	625	-4	-67
1965	5	632	-3	-60
1966	6	721	-2	29
1967	7	632	-1	-60
1968	8	638	0	-54
1969	9	656	1	-36
1970	10	685	2	-7
1971	11	703	3	11
1972	12	687	4	-5
1973	13	820	5	128
1974	14	913	6	221
1975	15	730	7	38
Total	120	10,384		

$$\bar{X} = 8 \qquad \sum y^2 = 88$$

$$\bar{Y} = 692 \qquad \sum xy = 3489$$

$$\sum x^2 = 280 \qquad n = 15$$

$$b = \frac{\sum xy}{\sum x^2} = 12.5$$

$$a = \bar{Y} - b\bar{X} = 592$$

$$r^2 = \frac{b \sum xy}{\sum y^2} = .49$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum xy)} = 59.0$$

Table 9: Data Required to Calculate the Regression Line for Private Cottage Lots Less Than 1 Acre in Extent

Year	X	Y	x	y
1961	1	11,742	-7	-1701
1962	2	12,737	-6	- 706
1963	3	12,658	-5	- 785
1964	4	12,813	-4	- 630
1965	5	13,028	-3	- 415
1966	6	12,542	-2	- 901
1967	7	14,514	-1	1071
1968	8	10,749	0	-2694
1969	9	13,074	1	- 369
1970	10	12,698	2	- 745
1971	11	14,249	3	806
1972	12	15,093	4	1650
1973	13	15,012	5	1569
1974	14	15,805	6	2362
1975	15	14,934	7	1491
Total	120	201,648		

$$\bar{X} = 8 \qquad \sum y^2 = 28,120,873$$

$$\bar{Y} = 13443 \qquad \sum x y = 64,177$$

$$\sum x^2 = 280 \qquad n = 15$$

$$b = \frac{\sum x y}{\sum x^2} = 229.2$$

$$a = \bar{Y} - b\bar{X} = 11609$$

$$r^2 = \frac{b \sum x y}{\sum y^2} = .523$$

$$SEE = \sqrt{\left(\frac{1}{n-2}\right) (\sum y^2 - b \sum x y)} = 1016$$

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