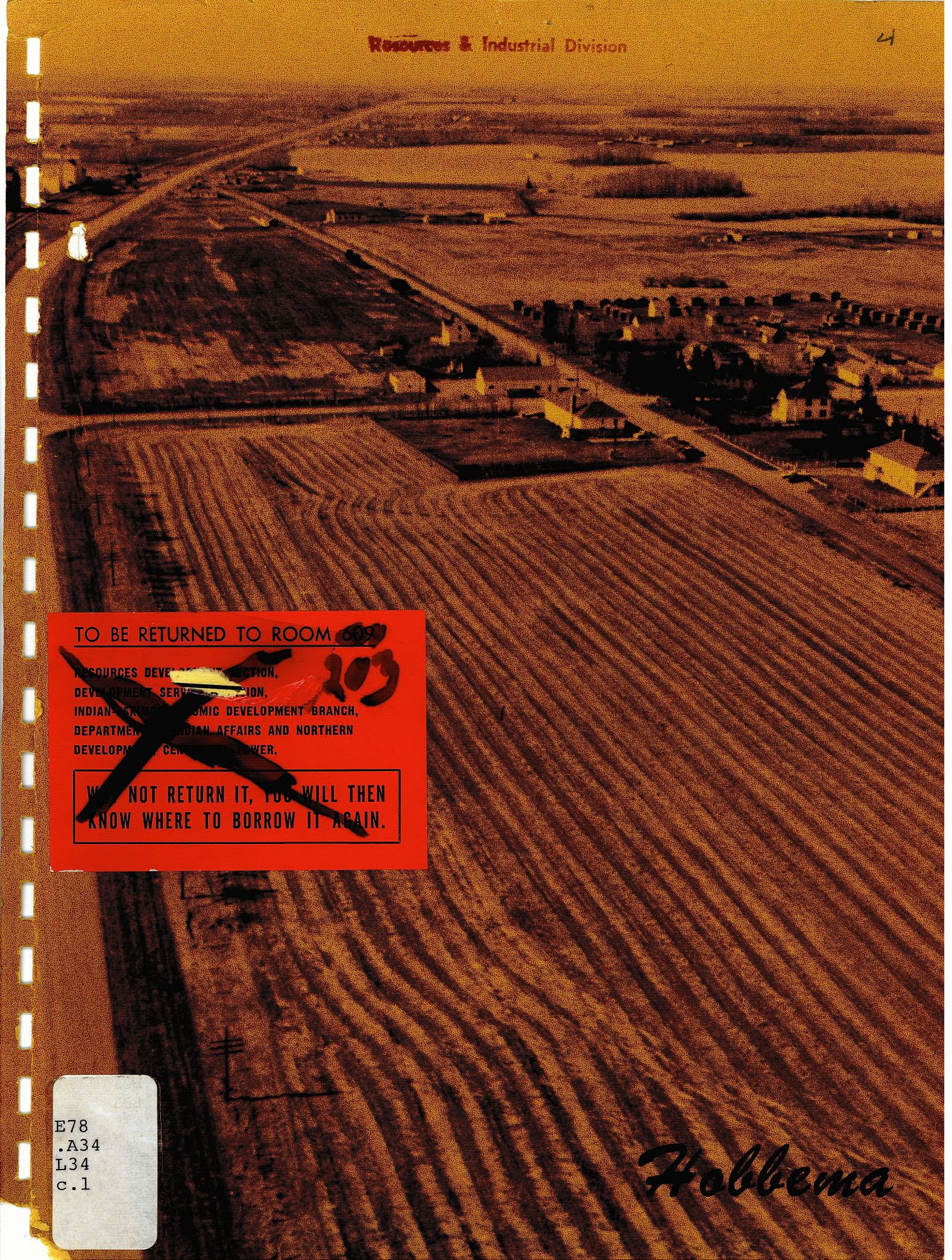

Hobbema

A
LAND USE AND
SOCIO-ECONOMIC STUDY

OF THE

PIGEON LAKE
INDIAN RESERVE NO. 138A

AND

SUMMARY REPORT
OF THE HOBBEMA RESERVE GROUP

PREPARED FOR
THE DEPARTMENT OF
INDIAN AFFAIRS AND
NORTHERN DEVELOPMENT

BY
STANLEY ASSOCIATES ENGINEERING LTD

1969

Stanley Associates Engineering Ltd.
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May 23, 1969

File: 791-4-a

Mr. T. Turner,
District Supervisor,
Edmonton-Hobbema District,
Dept. of Indian Affairs & Northern
Development

and

Band Members & Council,
Hobbema Indian Reserves.

Gentlemen:

Re: Socio-Economic and Land-Use Study

We are pleased to present herewith the findings of our recent studies relative to the Hobbema Indian Reserves. We trust that the high level of cooperation which we have received throughout the duration of our studies is reflected in the pertinance and usefulness of our Report.

We would be pleased to provide any continuing assistance that you might deem necessary in order to arrive at a comprehensive and viable development program.

Respectfully submitted,

Stanley Associates Engineering Ltd.

J. M. Lainsbury, P. Eng., MTPIC,
Study Director.

F. J. Dusel, P. Eng.,
Vice-President.

SOCIO-ECONOMIC & LAND USE STUDY

HOBBEMA INDIAN RESERVES

STUDY PARTICIPANTS

FOUR-BAND COUNCIL

Representing the Montana, Samson, Ermineskin and Louis Bull Reserves.

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INTRODUCTION

This report has been produced in accordance with a contract dated November 5, 1968 between Stanley Associates Engineering Ltd. and the Edmonton-Hobbema District, Indian Affairs Branch.

The socio-economic and land use studies authorized by the above contract were designed to evaluate the resource potential, both physical and human, of the Hobbema Reserves, and to recommend programs of resource development for the benefit of the Indian people concerned, having regard to the desires and abilities of these Indian people.

This report is presented in two parts. Part I deals with the Pigeon Lake Reserve No. 138A which is controlled by the Four Bands comprising the Hobbema Group of Reserves. Part II deals with the overall social and physical development of the Hobbema Reserves, with emphasis upon those areas of development which are common to all of the Reserves, mainly industrial and commercial development and the concept of a Four Band Urban Development at Hobbema.

Throughout the duration of this study, the researchers have received an extremely high level of cooperation from the Band Councils, Council's Steering Committee, the Indian Affairs Branch and the Band members as a whole. It is to be hoped that this excellent relationship is reflected in the validity and usefulness of the comments that follow.

PART I

PIGEON LAKE
INDIAN RESERVE

NO. 138A

SECTION 1 - PHYSICAL DESCRIPTION OF RESERVE

LOCATION

The Pigeon Lake Indian Reserve No. 138 A is located on Highway No. 19, approximately 49 road miles south of Edmonton. The Reserve is on the east end of Pigeon Lake, occupies approximately 8 square miles of land and has a lakeshore frontage of 4-1/2 miles. The location of the Reserve relative to the surrounding region is illustrated by Map No. 1.

HISTORICAL BACKGROUND

The Pigeon Lake Indian Reserve No. 138 A was established by an Order in Council on July 8, 1896 as a "fishing station for the Indians of the Hobbema Agency". The original area of the Reserve as indicated by Map No. 2 was 4,979 acres. In 1923 approximately 100 acres was surrendered to the Crown with proceeds being distributed among the four Hobbema Bands. This area is now occupied by the townsite of Ma-Me-O Beach. Subsequent surrenders for road and highway purposes have left a present net area of the Reserve of approximately, 4,800 acres.

PHYSICAL ENVIRONMENT

The topography of the Pigeon Lake Reserve may be described as flat to undulating, with elevations ranging between 2,750 and 3,000. The western boundary of the Reserve is marked by the shoreline of Pigeon Lake, a spring-fed body of water approximately 35 square miles in area.

Bedrock in the Pigeon Lake Reserve is covered by a surficial layer of lake deposits of Pliestocene Age and Recent wind deposits. Deposits of fine sand may be found east of the lake shore in old shorelines and dunes. Map No. 3 outlines the geology of the Reserve area.

The growing season in this area extends from approximately April 25 to October 6 (Refer to Map No. 4). Average annual precipitation in the area is 18 inches, 12 inches of which falls between May and September. (Refer to Map No. 5) . Mean "frost-free" period in this area is 90 days.

LOCAL AND REGIONAL SERVICES

Day to day low order services for the residents of the Pigeon Lake Reserve are provided by the community of Ma-Me-O Beach which contains two stores, two service stations, four cafes, two churches and a museum. Higher order services are obtained at Wetaskiwin, Ponoka, or other large urban centres.

The Reserve is serviced directly by Highway No. 19 which is an all-weather facility connecting directly to Highway No. 2 running between Calgary and Edmonton.

Edmonton television channels 3 and 5 are received on the Reserve, as are radio stations from Edmonton, Camrose, and Red Deer. The Edmonton Journal, Wetaskiwin Times, Albertan, and Bear Hills Native Voice are the newspapers available on the Reserve.

HOUSING

A survey of housing conditions on the Pigeon Lake Reserve was made in January, 1969. There appears to be much moving of families between houses on the Reserves and therefore it must be realized that the occupancy rates mentioned below are valid only at the time of survey and have possibly changed to some degree during the subsequent period of time.

Fourteen of the 24 houses on the Reserve were occupied at the time of the survey, thus giving a vacancy rate of 42 per cent. Eight of the homes were found to be in good condition, 14 in fair condition, and 2 in poor condition. Fourteen of the homes had a floor area greater than 800 square feet, 6 had a floor area of between 400 and 800 square feet and 4 houses had a floor area of less than 400 square feet.

There was an average of 7 people per occupied house on the Pigeon Lake Reserve, in homes ranging from 1 to 5 rooms. There were 14 homes with 5 rooms, 2 with 4 rooms, 4 with 3 rooms, 2 with 2 rooms, and 2 with one room. The crowding index, defined as the number of people per habitable room, ranged from 0.6 to 12.0 with the average being 2.0. Four

homes (29 per cent of the occupied houses) had a crowding index of 2.0 or more. A crowding index of 1 is considered a desirable maximum.

Appendix A contains the criteria used for the housing condition survey. The location of houses on the Reserves and the condition of occupancy is shown on Map No. 7.

ROADS

An adequate system of roads is available on the Reserves. All of the main roads are gravelled. Map No. 8 shows the location and classification of roads on the Pigeon Lake Reserve.

GOVERNMENT

The Pigeon Lake Indian Reserve No. 138 A is controlled by the Samson, Ermineskin, Montana and Louis Bull Band Councils as represented on the Four Band Council. The comments made in the individual Band Reports regarding government on each of these Reserves apply equally to their relationship to the Pigeon Lake Reserve.

It might be noted at this point that the Four Band Council, which is composed of all of the Councils of the four Hobbema Bands is not a formal governing body, but merely an ad hoc group brought together for purposes of administration of the Pigeon Lake Reserve. Further comments and recommendations regarding the future of this body are contained in Part II of this report.

SECTION 2 - SOCIAL DESCRIPTION OF THE RESERVE

GENERAL

At the time of this study there were 102 Indians living on the Pigeon Lake Reserve. Since all of these people have been enumerated as members of their respective bands, no social statistics are available solely for the residents of the Pigeon Lake Reserve. Although the residents are all members of the other Hobbema Bands, they do in fact appear to have somewhat different social characteristics and requirements from their fellow Band members.

GOVERNMENT

The main concern of the residents of the Pigeon Lake Reserve at the present time is the fact that they are being controlled by Band Councils at Hobbema who appear to have little interest in the Pigeon Lake Reserve and even less interest in those Band members who have elected to reside on that Reserve. The residents feel that they are a colony of the Hobbema Reserves, and that their Reserve is being used as a resource facility with no attention being paid to the residents.

There was a great deal of resentment over the fact that members from Hobbema had come out and run the two parks which were established on the Pigeon Lake Reserve, while residents of that Reserve were not given a chance to obtain these jobs.

The over-riding desire of the Indians resident on the Pigeon Lake Reserve is to form their own band and take over the Reserve, thus obtaining independence from the Hobbema people. They are quite willing to give the Hobbema Reserves a fair share of the oil and other revenues from the Pigeon Lake Reserve; they simply want to be able to govern their own Reserve with a separate Band Council.

EDUCATION

In terms of education, the residents of the Pigeon Lake Reserve are divided into two groups. The first are those who send their children to the

Ermineskin Catholic School. All these children utilize the residences available at the Ermineskin School, because of the distance involved in commuting to the school each day. The other group is comprised of those who have sent their children to the small school at Westerose where they take the same program as the white children from the surrounding area.

In terms of educational achievement it appears that the pattern is very similar to the ones noted in the other schools at Hobbema and Ponoka. The children do well until they reach Grade 3 or 4 and then start to drop behind in their work until finally at about Grade 8 or 9 they drop out. At the present time there are only two children from the Pigeon Lake Reserve attending high school. Both of these are going to a Catholic High School in Edmonton.

One interesting aspect of Indian attendance at the rural school at Westerose is that the Indian children have become quite friendly with the younger whites in the area, and they have formed work groups and done bush work together. Because the Westerose School is a rural school and not nearly as sophisticated as the one at Ponoka, the Indian children appear to have been able to make the adjustment to a different value system somewhat more easily, and have therefore found it easier to associate with white society.

RECREATION

The recreation available at the Pigeon Lake Reserve appears to be more adequate than at any of the Hobbema Reserves, although there is very little for the girls to do in the winter and there is no hall available on a regular basis. Winter sports available include hockey and tobogganning. In the summer, the residents organize a ball team and can take part in all the activities associated with lakeside living. The many white families who reside at Ma-Me-O Beach during the summer generate a lot of recreational activities in which the Indian children are able to take part. It must be noted that the recreation available at the present time is not on an organized basis, and several of the young people are very interested in the establishment of an organized year-round recreational program.

DISCRIMINATION

The amount of discrimination found in Ma-Me-O Beach is quite high in some instances. One storekeeper suggested that "as long as the Indians keep on their side of the boundary there is no problem, but we don't want them messing up the town particularly when we get the tourists in the summer". It does appear however that the young people do have some association with the young white people coming to Ma-Me-O Beach for summer vacations.

SUMMARY AND CONCLUSIONS

The general social situation on the Pigeon Lake Reserve is very similar to that found on the other four Reserves at Hobbema with the obvious exception that the residents of Pigeon Lake feel that they are dominated by a Council at Hobbema which has very little interest in them. Considering the attitude of the Indians living on the Pigeon Lake Reserve, it is doubtful if any constructive development can take place on the Reserve involving these people unless they either achieve some degree of self-determination or until the Four Band Council at Hobbema is able to establish better relations with these people. The latter alternative appears more practical.

SECTION 3 - AGRICULTURAL DEVELOPMENT ON THE PIGEON LAKE RESERVE

LAND AREA

The total land area of the Pigeon Lake Reserve is 4,782 acres based on reference plan data for the Reserve. This excludes the area of the townsite of Ma-Me-O Beach. None of the agricultural area has been developed for agricultural use at the present time.

SOIL RESOURCES

Approximately 80% of the Reserve land is Class 3 Soil in the Canada Land Inventory Land Capability Classification and as such falls in the arable land group as defined in this report. The remainder of the area is covered with organic soil. Almost all of the organic soils are located south of the provincial highway number 19.

The Soil Survey Map of the Peace Hills Sheet[1] shows that all the soils on the Reserve are classed as Grey Wooded soils. Most of the Reserve lands contain a loam soil but the soil structure limits the productivity of these soils. Thus the standard unit farms developed for the other Reserves on Black soils do not realy apply. Farming will require a substantial amount of forage in the rotation and 700 acres may not provide the operator with an annual return to labor and management of $4,000. The ability of the farm operator will have a very significant influence on the farm returns[2].

Another limitation to farming in this area is the number of oil well service roads. This makes fields of odd shapes and tends to inhibit the operation of large units of field machinery. With this in mind the information in the following tables should be interpreted as a very rough guideline to the potential of the Reserve. Pasture capabilities were those estimated by Love and MacMillan[3] for Grey Wooded soils.

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1 Soil Survey of Peace Hills Sheet, Experimental Farms Service, Ottawa 1948.

2 Refer to Part 2 of this report for a general discussion of agricultural development.

3 Love, H. C. and M. L. MacMillan, Alberta's Pasture Resources and Estimated Potential from Improvement of Privately Owned Land, Agricultural Economics Research Bulletin 6, University of Alberta, 1968.

Table 1 gives the estimates of agricultural area for the Reserve. The adjustment was increased from 15% to 20% due to the number of service roads on the Reserve.

TABLE 1 - PRESENT RESOURCE CAPABILITIES

Group	Estimated Acreage	20% Adjustment	Revised Estimates
Arable	3,800	- 760	3,040
Native	982	+ 760	1,742
Total	4,782		4,782

POTENTIAL FARM UNITS

The capability of this land with no further development is approximately 2,200 AUM of pasture for a cow-calf operation. One cow-calf enterprise could be supported which would provide the operator with an estimated income of $3,682 and the Bands an estimated income of $4,095. The operation would require an investment of $54 thousand.

Table 2 gives the estimated capability of the Reserve if the arable land were developed and if the farm operators could achieve the income given for the standard units for Black soils. If the production on this land could not maintain the levels specified in the standard units, the major change would be a reduced income to the operator and the Band. The capital investment for the Pigeon Lake Reserve would remain approximately the same as those developed in the standard units used for the other Reserves. The development cost of $150 thousand is the investment required to break 3,040 acres of land for farming. However, much of this could be considered as income to Band members if the Bands were to undertake the development of the Reserve. A total investment of $183 thousand would be required on the part of the farm operators before they could utilize the land. However, if the land were rented to outside farmers for $6.00 per cultivated acre and $1.80 per AUM of pasture, no investment capital other than for breaking would be required and annual income would be approximately $19.7 thousand.

TABLE 2 - RESOURCE CAPABILITY AFTER INVESTING $150 THOUSAND TO DEVELOP RESERVE LANDS

Resource	Farm Units	Farm Capital	Income		Alternative Band Income from Leasing	
			Operator	Band	$6.00/ac.	$7.00/ac.
		$000's	$000's	$000's	$000's	$000's
Crops (3040 acres)	4.3	161.7	16.8	19.4	18.2	21.3
Livestock (818 AUM)	.4	21.6	1.4	1.5	1.5	1.5
Total	4.7	183.3	18.2	20.9	19.7	22.8

SUMMARY

The Pigeon Lake Reserve is a communal resource of the four Hobbema Bands and as such it's development potential, along with other development topics of common interest, are discussed in Part II of this report.

It is important to understand that the residents of the Pigeon Lake Reserve, although all members of the various Hobbema Bands, do not think of themselves as members of the Hobbema group but rather as members of a hypothetical Pigeon Lake Band. It is essential that the members of the various Councils attempt to improve communications with the residents of the Pigeon Lake Reserve, in order that these people may be considered as part of the overall development policy to be established for the Hobbema people.

PART II

FOUR BAND DEVELOPMENT

INTRODUCTION

This report is intended to summarize the findings of the socio-economic and land use studies carried out for each of the Montana, Samson, Ermineskin, Louis Bull and Pigeon Lake Reserves. Section 1 deals with the general social and educational situation on the Reserves. Section 2 presents a summarized natural resource evaluation of the subject Reserves with specific reference to agricultural, mineral and recreational resources, and respective development alternatives. Section 3 summarizes development recommendations in the area of townsite development, industrial and commercial development, agricultural development, and education and training recommendations.

SECTION 1 - SOCIAL DEVELOPMENT

GENERAL SOCIAL THEORY ON THE TWO MAJOR PROBLEMS AT HOBBEMA

Band members on the four Reserves at Hobbema are facing two major problems at the same time. The first and perhaps the biggest problem is that they are a minority group which society has set apart through legislation and by means of discrimination. The second main problem is that the Reserves' only labor demand at the present time is in the field of agriculture, which requires more capital and less labor each year.

Minority Group Problems

The Canadian Indian is a member of a minority group, and as such he is often the target for prejudice. For the Indian there are two closely related but distinguishable consequences of prejudice. These are:

(1) the effect of prejudice on the personality traits individual;

(2) the effects of prejudice on the structures and processes of the minority group[1].

Since the personality of an individual is nearly developed by the time he is fifteen years old, to explain or judge the behaviour of the adult without a full understanding of his childhood experiences is to miss basic causes. If the dominant elements of North American society or any other society isolate a segment of the population from contact with prevailing norms and prevent that segment from sharing in the rewards which accrue to the adherence to these norms, the appearance of a subculture with different motivations and standards of conduct should not come as a surprise[2].

> There is a sense of pessimism among the people. The young feel that they must or will fall into the same patterns as their elders. Sociologists tell

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[1] Simpson, G. E. and Milton Yinger Racial and Cultural Minorities, (New York: Harper & Row, 1965) Page 130

[2] Tremblay, Marc-Adelard; and Walton J. Anderson Editors Rural Canada in Transition (Agricultural Economics Research Council of Canada, June 1966) Page 137.

> us that the aimless living, laziness and uncleanliness found on many Reserves is not the fault of the Indians but comes from the normal frustration of minority groups faced with low income living[1].

Certain Canadian policies established for all Indians have contributed to the frustration of Indians as minority groups faced with low income living[2]. Reserve living, for example, tends to isolate the Indian, keeping him constantly aware of his minority group status and forcing him to miss any socio-economic opportunities open to the dominant group. He often feels insecure, an insecurity caused by prejudice which an Indian encounters from childhood.

> In every region of Canada I found a deep-rooted prejudice against them, a prejudice that was stronger in some places than others but one which was noticeable everywhere from Atlantic to Pacific. It was the strongest in the West.[3]

> You understand the Indian people better when you realize that they live in constant fear of prejudice and that they have no united front against this terror because they live (or were bought up) on socially isolated Reserves[4].

Moreover, the Indian Act segregated the Indian population, giving them separate laws with a separate government branch to administer them. Indian leaders have been left with little responsibility and no authority. There is little local tribal government left, and therefore no leadership or leadership training on the Reserves. Adequate education is a prerequisite of any leader, and an Indian dealing with educated government employees should have enough formal education to communicate with them on an equal basis. But the men who should be taking over the tribal leadership haven't received

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1 Mulvilhill, James, The Dilemma of Our Indian People (Le Droil, Ottawa Page 21

2 ibid., Page 137

3 Jenness, Diamond, Canadian Journal of Economics XX (1954) Page 95

4 Mulvilhill, James, opcit,, Page 5

an adequate education. One possible explanation for this lack of education may be found in the following excerpt from a letter written in 1940 by a member of the Department of Indian Affairs.

> The Department doubts the advisability of encouraging the older pupils along academic lines. Under the circumstances, the books required are not being supplied. It is felt that when pupils reach the age of 12 or 14 years the school management should emphasize vocational rather than academic training for the Indian students.

A closer look at the so-called "Indian problem" is called for.

> If their diet was deficient, their health poor, their housing unsatisfactory, it was the fault of the white man, they said, and the white man's government should set things right. So it came about that an atmosphere of mingled apathy and discontent settled on the Reserves, and it was apathy that dominated[1]

Thus a "segregation camp" mentality is slowly built up. The feeling of apathy, mentioned by Jenness, is one of the most serious aspects of what is most commonly referred to as the "Indian problem". Laskin breaks the problem down into three categories: Cultural-ethical; biological; and motivational[2]. The cultural-ethical aspect concerns the decision by Indians to retain as much of their culture as they wish, or to transform themselves into average Canadians. The biological part of the problem is very simple. The Reserves are becoming, or are, overpopulated.

A solution for the motivation part of the Indian problem is the most difficult to foresee. A great deal of research has been dovoted to the source of achievement motive, the readiness to work and postpone immediate satisfactions in order to get ahead. Three generalizations can be made on the basis of the data gathered:

(1) class is more important than race or ethnic group in determining the strength of the achievement motive;

(2) an important line of demarkation can be drawn between lower-lower and upper-lower class (a line of special significance among non-whites);

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[1] Jenness, Diamond, opcit, Page 98.

[2] Laskin, Richard opcit, Pages 87-88

(3) the desire for achievement is not always accompanied by the expectation of achievement[1].

In the attitudes of shame and apathy that prevail on many Reserves, one can see that the achievement motive no longer exists for many Indians. Their attitude can easily be traced to its origins:

(1) the collapse of their traditional tribal culture with its unique values, symbols of achievement, socialization stages, structuring of motivation and meaning of life that is involved;

(2) the introduction of white man's religion, education, generally his norms, which often condemns as diabolical and pagan the Indians' culture, or simply ignores it as unworthy of official acknowledgement;

(3) the encounter with jobs and wages involving new skills and work disciplines which, because they were initially difficult to master, earn for the Indians the stigma of lazy, stupid and good-for-nothing.

Thus, for many the Reserves have become havens from loneliness, contempt, and the failures associated with outside life. The Reserves have become sanctuaries that offer subsistence and relief rations, perhaps shamefully but stoically received[2].

The Rural - Agricultural Problem

Agriculture throughout Canada is undergoing major changes. Technology is the main force causing the changes. The main effect of the changes is that a smaller proportion of farmers are producing a larger portion of the total agricultural product. In 1961, 10 percent of Canadian farmers produced 45 per cent of the value of all farm products sold and 46 per cent of the farmers produced 10 per cent of the value of all farm products sold. These figures can be divided another way, 55 per cent of Canadian farmers produced 90 per cent of the value of all farm products sold and 45 per cent of the farmers produced 10 per cent of the value of all products sold[3]. The fact that many farmers cannot or will not keep up with technol-

1. Simpson, G. E., and Milton Yinger, opcit, Page 145.
2. Laskin, Richard, opcit, Pages 87-88
3. Tremblay, Marc-Adelard, and Walton J. Anderson, Editors, opcit Page 180.

ogy means that they are being forced out of agriculture. In 1901, over 66 per cent of Canadian population were farmers. By 1961 only 10 per cent of Canada's population were farmers [1]. The situation on the prairies where the Hobbema Reserves are located is not quite as dramatic. In 1931, 50 per cent of the population on the prairie s were farmers. By 1961 this figure had dropped to 24 per cent[2]. The above figures give a comparative picture of agriculture with the rest of society. In absolute numbers there were approximately 23,700 fewer people on farms each year in Canada[3]. In the period 1961 to 1966 an annual average of 960 farmers quit farming in Alberta. This means there is a percentage drop of 5. 2 per cent each year for the number of farmers in Alberta, or 1 in every 20 farmers quits farming each year in Alberta[4].

All of the above means that some farmers and nearly all of their children are moving to the towns and cities. This action involves far more than the physical movement of resources. It involves the process of urbanization. Urbanization means more than the establishment and growth of towns and cities.

> " Urbanization means a structure of common life in which diversity and the disintegration of tradition are paramount. It means a type of impersonality in which functional relationships multiply. It means a degree of tolerance and anonymity replaces traditional moral sanctions and long terms acquaintanceships[5].

In an urbanized society the challenge is not primarily one imposed by nature nor are natural controls significant in influencing behaviour. The challenge and controls which influence the actions of the urbanite are social, that is, they are man's own creations. The urban dweller must orient himself to social objects, and the cultural, institutional, and psychological

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1 ibid, Page 9

2 Ibid, Page 12

3 Dominion Bureau of Statistics

4 Tremblay, Marc-Adelard, and Walton J. Anderson Editors, opcit, Page 10

5 Cox, Harvey, The Secular City , (New York MacMillan Company 1965) Page 4

of this orientation serve to distinguish urbanized from ruralized society[1]. In a completely rural society, the non-social environment is the major independent variable, the social environment being primarily an effect rather than a cause. In a completely urban society on the other hand, the non-social environment is only incidental, the social objects which man confronts significantly influence the social interactions in which he engages. Thus Durkheim's dictum that we should seek the cause of social facts in preceding social facts becomes more cogent as technology reduces the relative significance of nature and rationalization increases that of social organization[2].

Urbanization is the dominant social force in our society today. It is important then that we remember the statement previously made that "Urbanization is based on the process of technology". Scientific knowledge or progress, which has brought about technical progress or technology, has, because it was forceful and broad, given rise to a civilization based on knowledge. Thus, urbanization is based on knowledge. Knowledge, because it is all inclusive or tries to be by nature, has far-reaching effects on any society which adapts the majority of its functions to knowledge. Thus a civilization that is characterised by knowledge seeks to be all embracing, that is, to encompass the entire society in which it is developing and to leave its mark on every group which helps to make up this society. Any group which does not keep up with technology or knowledge soon finds itself at an extreme disadvantage in an urbanized society. Thus a farmer who does not keep up with the technology soon finds himself at an economic disadvantage. But this is not the only disadvantage he finds himself at. Socially and culturally he becomes more and more distant from what is happening in the rest of urbanized society. The farmer who does not keep up with technology will be forced

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1 Wirth, Louis, Urbanism As a Way of Life, American Journal of Sociology, Vol. 44 (July 1938)

2 Durkheim, Emile, The Rules of Sociological Method (New York: The Free Press of Glencoe, 1950) Page 110

off the farm due to economics, but it may be anticipated that rural inhabitants moving to urban areas with their original inadequacies will not find their situation improved merely because they have migrated. On the contrary, they may encounter additional difficulties in an environment with which they are not familiar[1].

Inherent in the urbanization concept is the idea that modern man is convinced he can control nature. He will be inclined to trust power or authority to that person he believes is best qualified to govern. Power and authority will not be based on someone's good will, but on his ability to judge the situation rationally and subsequently take or indicate the most effective means of solving the problem. However, because of the importance of science, in our modern society, education is perhaps the only means of becoming competent to eventually assume power, and where need be to contest someone's right to it. To quote Fortin "To become a fullfledged member of this society the individual must have ever increasing access to scientific knowledge"[2].

The Hobbema Indians are subject to the same pressures as the white, vis-a-vis agricultural technology.

THE ROLE OF COMMUNITY DEVELOPMENT

> Community development in this section will be defined as:
>
> The process by which the efforts of the people themselves are united with those of the government authorities to improve the economic, social and cultural conditions of the communities, to integrate these communities into the full life of the nation and to enable them to contribute fully to national progress.[3]

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1 Tremblay, Marc-Adelard, and Walton J. Anderson Editors, opcit, Page 401

2 ibid, Page 386

3 Mehta, B., Thoughts on Community Development Khrukshetra X11, 1964 Page 2.

It is important to keep in mind that one is working with the community as a unit; it is the community that is to be integrated into the life of the nation, not the individual that is to be extracted from the community by some aspect of community development process. The word "process" refers to the progression of events that are planned by the participants to serve goals they progressively choose. The events point to changes in a group and individuals that can be termed growth in social sensitivity and competence.[1] This process usually follows a fairly definite pattern if it is successful. There are six major stages in the process: exploration, organization, discussion, action, new projects, and finally continuation[2].

During the exploratory stage as much information as possible is gathered about the community. This information should include social and cultural attributes of the community, history about past projects, activities presently occuring, some data on the physical resources of the community, and those problems that people feel are most pressing.

During the organizational stage the few really interested people hold many formal and informal discussions until they reach the point of committing themselves to work on a problem. This is usually a very small group referred to as the necleus. After this nucleus has committed itself, the discussional stage is initiated. As many people as possible are involved in the discussions of the problem. This is perhaps the most important single stage, for if the general community does not feel that they have had a part in the decisions, they may not involve themsleves actively in the project. Usually outside help is brought in to give technical advice, but final decisisons must be left to the community.

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1 Biddle, William W., and Lauriede J. Biddle, The Community Development Process (New York: Holt Rinehart and Winston), Page 79.

2 ibid, Page 79

Action follows decision. In this stage people work on their own ideas to successfully change and develop the community. With success come self-confidence and pride. If this stage is successful, the people are ready to go on to the next stage that is developing new projects. Hopefully the community will develop a pattern for future problem solving which will build a strong community and in turn strong people.[1]

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[1] Nelson, Lowery, Charles Verner, Coolie Verner, Community Structure and Change, (New York: MacMillan and Company 1962) Page 441

SUMMARY OF SOCIOLOGICAL OBSERVATIONS ON THE HOBBEMA RESERVES

General Attitudes

Lack of regular employment is one of the major problems recognized by most of the Band members. A typical initial reaction was that if employment was made available on the Reserves, most of the Bands' problems would be solved. After further thought and discussion regarding the general situation on the Reserves however, most members concluded that perhaps some problems would still exist even if employment was made available. One of the facets of the employment problem which was brought out by many members is the general attitude of the Indian people towards steady work. Many members felt that if a development project was started, it would have to be organized such that a man could be late a few times or even absent for a few days without being penalized, simply because this is the way the Indian people function. However, several men who have managed various Band projects stated that this type of loose employment arrangement could not go on and that changes are going to have to be made. These men have been in a position to observe the effects of such lax policies on work schedules and project efficiency, and realize that punctuality is essential.

Another facet of the employment situation which relates directly to the Indians' attitude towards work is the absence of an incentive wage scale. Many members were incensed by the fact that whether they worked hard and showed an interest in their work, or showed up at a project only once a week, everyone got the same pay; thus there is no incentive to work efficiently. To counteract this attitude, it was suggested that an incentive wage scale be introduced which would start at perhaps $1.50 per hour and increase rapidly over a period of time to the level of $2.00 per hour as a reward for punctuality and interest, and increase at a somewhat slower rate thereafter based on productivity.

The transportation situation on the Reserves also has a bearing on attitudes towards employment. Only about 50 per cent of the people on the Reserves have access to automobiles, and in the winter months this percentage is much lower. Thus many members are unable, or at least reluctant, to

accept employment either on or off the Reserve, since they have no assurance that they will be able to get to their place of employment.

Economic attitudes and aspirations are governed to a large degree by what is referred to herein as the "welfare game". The purpose of the game is very simple; namely to obtain as much revenue as possible in the form of welfare money or other forms of assistance with the least amount of work or commitment. Sources of funds applicable to the game are Indian Affairs, various other government agencies and the Band Councils. The rules of the game allow you to take as much as you can, with the understanding that you will share with your relatives and neighbors if you are successful in winning more than the amount normally considered as being required to live on. This game is very functional. It is one of the easiest ways in which the Band members can live under the Indian Act as it is today. Those Band members who realize this and play the game with skill are able to make a fairly good living from the various sources of funds and aid. Those who have not recognized the game or who are not in an advantageous position to play the game cannot achieve the same degree of success and hence are suffering. Initial development schemes on the Reserves must account for the fact that some members will probably continue to use the new projects under the old game rules. Thus they will try to get as much money out of it as they can and will try to use whatever physical resources are made available for the project for their own use. Until such time as they understand that it is to their long range benefit to cooperate with initial development programs rather than bleeding such projects on a short term basis, initial programs will have serious problems.

Another serious consequence of the welfare game is that any Band member who tries to do things for himself is looked upon by his peers as being slightly foolish, and should a member become successful in any enterprise, he is looked upon with resentment. The welfare game is played in deadly seriousness, and will inevitably hinder effective development on a Reserve. This means that until the people analyze their own situation and come to realize the long term effects of the welfare game, any development on the Reserves is not likely to succeed. Band members must understand and accept

the fact that well-planned development projects can provide a viable alternative to the welfare game.

As an indication of the magnitude of welfare on the Reserves it is noted that only about 5 per cent of the total budget is available for development, with the balance being allocated to services of various types for the Band members. Any community which invests only 5 per cent of its available capital in its future is in a very serious situation, since this is hardly enough to cover depreciation on existing capital investments.

Housing

Overcrowded and empty houses appear incompatible, but both are found on all of the Hobbema Reserves. Some of the reasons for this situation are as follows:

(1) A family whose house is distant from service facilities and which has no transportation has little alternative but to move to where transportation is available.

(2) A family which relies on propane for heating and cannot afford to purchase propane moves in with someone who is burning wood.

(3) A family with a dry or frozen well moves in with someone who has a good water supply.

(4) A family in a poorly constructed and insulated home has no alternative but to move out during cold weather.

(5) All roads are not kept clear during the winter and some families move in order to make school bus transportation available.

(6) Some younger people move in with older members who are receiving pensions in order to increase their standard of living.

(7) Some members move in with other families as a result of sheer loneliness.

(8) Some houses have become so degenerated that the residents feel they would have a better level of accommodation by living with someone else.

There are two pertinent points which should be considered with respect to the housing situation on the Hobbema Reserves. Empty houses reflect

a poor investment on the part of Bands who do not have sufficient financial resources to waste in this manner. It has been noted that the majority of empty houses are located in the areas most remote from Hobbema and from the housing clusters at Louis Bull and Montana, and it would seem therefore that the majority of the people are gravitating towards these centres. If this is the case, then the reorganization of residence location should be carried out in a carefully planned manner so that more money is not wasted in the future.

The overcrowding of homes is having many serious social consequences throughout the Reserves, which may be listed as follows:

(1) Breakdown of marriages.

(2) Poor school marks.

(3) Students leaving school prematurely because they cannot do their homework under crowded conditions.

(4) Poor sanitary conditions.

(5) Undue physical hardship on the women trying to maintain an overcrowded house.

(6) Rapid physical deterioration of the house, with resulting lack of pride in homes.

The Band members are extremely dissatisfied with the present housing situation, and future housing should be provided on the basis of a well organized and planned program.

Goals

Perhaps as a result of the current lack of understanding of the present situation on the Reserves, there does not appear to be any commonly conceived goal for the future of the Reserves. Some members see the Reserves as a sanctuary for all future generations, while fellow Band members see the Reserves as a prison for all future generations. When asked to describe their Reserve as it might be within 10 years, between 85 and 90 per cent of all Reserve residents indicated that the Reserve would be a worse place to live by that time. The attitude towards the future seems to be generally one of hopelessness with the Indian assuming that he has no power to guide his own destiny.

Each community or institution has a system by which it arrives at a commonly conceived goal framework, and a system by which these goals may be achieved. Since treaty No. 6 was signed 93 years ago, the Indian Affairs Branch has taken over this goal formulation function from the Indian community, and thus the Indian community's ability to formulate it's own goals has been weakened due to dis-use. As one of the first steps toward independence, the Indian community must start to build a whole new system of communications and decision making processes.

Communications

At the present time there are only two internal communication systems working on the Hobbema Reserves. These are the Bear Hills Native Voice and the "moccasin telegraph". The Bear Hills Native Voice appears to be well read by a majority of the people and is serving a very useful function in the community. However, the majority of information regarding the Reserves, is still transmitted by the "moccasin telegraph", which, although amazingly fast, tends to distort information very quickly. The Band members realize this and so put very little trust in what they hear. This would appear to be one of the major factors which have caused the lack of reciprocal trust between individuals on the Reserves. Added to this is the fact that Band members have very little idea of what the Indian Affairs Branch or their Band Councils are doing. When something is not understood or known, it is feared, and thus much of what the Band Council or Indian Affairs Branch does is feared by Band members since they fear they may be losing some of their rights or some of the advantages that they have gained over the years.

Another important result of the communications problem is that, under the present system, it is impossible for Band members to engage in the kind of dialogue necessary for the formulation of an acceptable framework of goals for the Reserves' development.

When considering the design of an overall communications system for the Reserve, it will be essential to keep in mind the relative low level of formal education achieved by the average Band member. Thus written communication has to be in a relatively simple form and emphasis placed on oral and visual communication systems.

Education

One of the functions of the education system in our society is to assist parents in teaching their children the cultures and values of our society. The children from the Hobbema Reserves are going to schools where this same function is performed. The difference, however, is that the children are being taught a curriculum which is designed to adapt them to the values of the white society and not the values of their own society. The net result is that the children learn one value system at home and another at school, and many parts of these two value systems are incompatible. The results are evidenced throughout the Reserve. As they grow older, the children become more and more frustrated and ususally drop out of school at the Grade 8 or Grade 9 level because they cannot keep up with the work due to distractions and pressures caused by the conflict of systems. Those children who continue going to school find themselves having to make a choice which no child should have to make. They either have to reject the culture of their parents and their friends and accept a white value system, or else they must try to lead a double life, assuming one value system at home and another at school. Those who give up their native culture and try to become white soon find that the white society still treats them as Indians and so they find themselves in limbo, being neither white nor Indian. Those who try to live with a foot in both cultures find that the pressures caused by cultural incompatibility increase with the passage of time, and they are usually forced in the end to choose either one culture or the other. This choice is usually made only after a great deal of harm has been done to the personality while trying to live in two worlds.

A close examination of the Reserve system will show that there is very little reward for a person to continue his schooling. It is very apparent at the present time that those young people who are getting a high school education are leaving the Reserves. The long term consequences of such a situation are obvious. Those with ability will leave and those who do not have as much ability will remain on the Reserves with the result that the Reserves will have less and less chance of becoming a functional and viable part of the Canadian society.

It would appear that there are two basic alternatives available to the Band members with respect to education. First is that they accept the integrated school system; that their children be taught by the white value system, and that they change the Reserve as much as possible in order to make it easier for their children to accept the white value system and become integrated into the Canadian society. The second alternative is that the Band members take an active part in their own school system. This implies that the Band members, working in conjunction with educationalists, would design a school system and curriculum which would allow the children of the Reserve to obtain an education which would not only enable them to take their place in a Canadian society, but would also allow them to be proud of their cultural heritage. The second alternative implies that the school system would serve the ends of the Indian people. In view of the foregoing discussions, it is apparent that this alternative will not be viable until such time as the Indian people are able to make some basic decisions regarding the future direction of Reserve development.

Recreation

At the present time, none of the Hobbema Reserves has adequate recreational facilities for any age groups. The present uncoordinated recreational activities of each Band is resulting in a great waste of time, energy and money. Those recreational activities which do exist are hampered by the lack of transportation availability on the Reserves. This applies particularly to the younger age groups who are in greatest need of organized recreational activities. Young people of 14, 15 and 16 should have a greater choice in recreational pursuits than watching television, playing cards and drinking beer.

Until such time as a greater level of employment can be achieved on the Reserves, recreational activities may be viewed as one of the more viable means of replacing negative social activities with somewhat more constructive pursuits. The drinking habits and patterns which have already developed on the Reserves are going to take a long time to break down unless they are replaced by stimulating work or recreational activities.

Population

Figure 1 shows the historic and projected population growth of the Hobbema Bands. Figure 2 shows the age-sex distribution of the aggregate four Band population as compared with the age-sex distribution for the Province of Alberta. The important points to be noted from these illustrations are as follows:

(1) By 1984, assuming a continuing growth rate of 5 per cent per annum the aggregate four Band population will reach approximately 7,400. As a basis for comparison, the 1966 census of Canada shows populations for Wetaskiwin and Ponoka of 6,008 and 4,421 respectively.

The 1984 population projection implies a density at that time of 1 person per every 10 acres on the Hobbema Reserves, or approximately one family per 60 acres. When this is compared to the agricultural density of the surrounding area of approximately one family per section, it becomes apparent that the Reserves' agricultural resource will not be sufficient to supply income and employment for more than 10 per cent of the Reserve population by 1984.

(2) Figure 2 indicates that an unusually high proportion of the population is in the lower age groups. It has been stated at many points throughout this study that the most valuable resource on the Reserves is the human resource, and Figure 2 emphasizes the fact that today's youth is the most important segment of this resource. It is this portion of the population which will reap the benefits and responsibilities of progressive long range development policies, and it is incumbent upon the present adult members to be sure that their children are capable of accepting such responsibilities. Thus it is essential that all members become concerned and involved with the problems of education and training.

Figure 2 also indicates that a large increase in the Reserves' labor force may be expected in the immediate future. This pro-

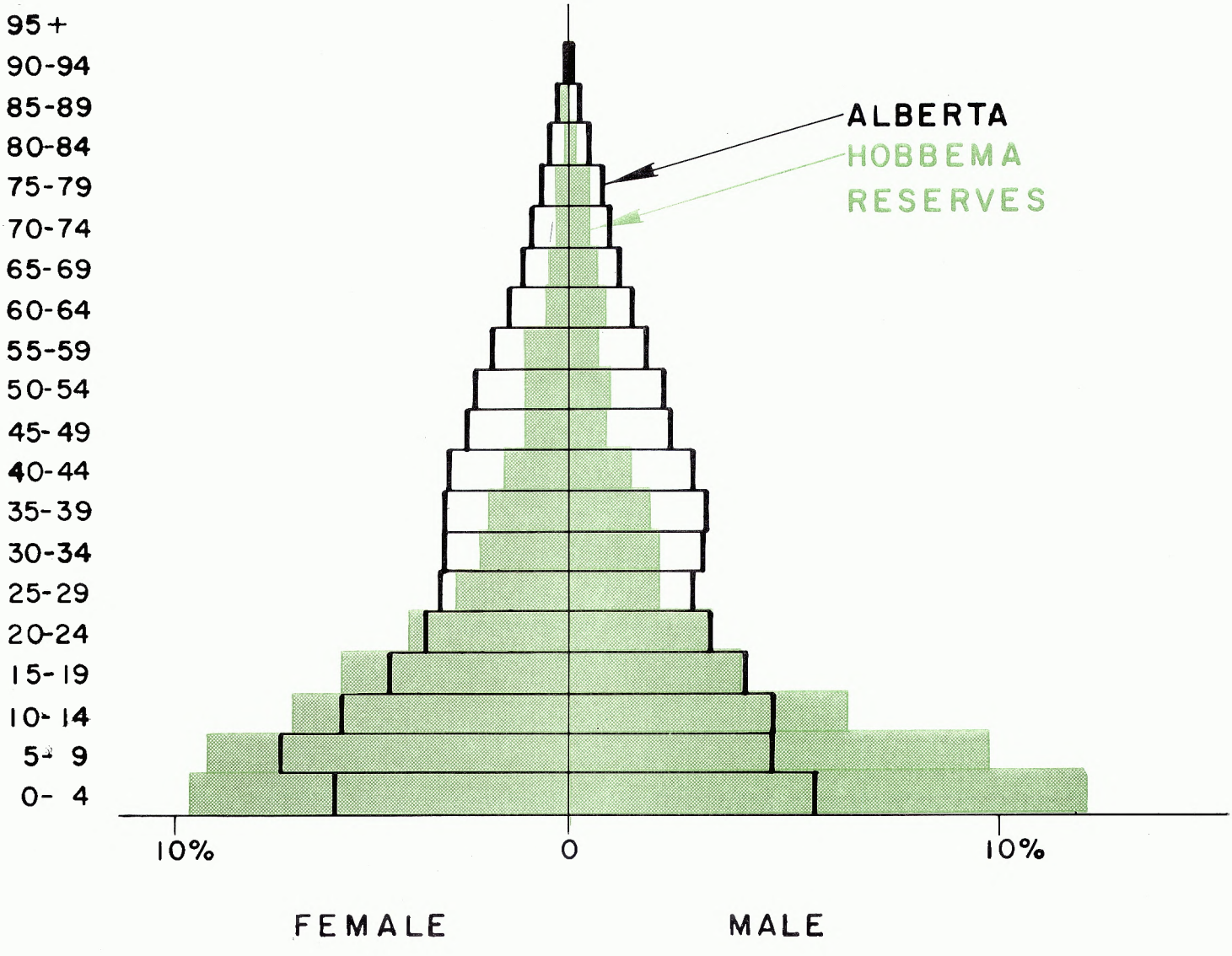

FIGURE 1

AGE-SEX DISTRIBUTION

AGGREGATE FOR PIGEON LAKE, LOUIS BULL, ERMINESKIN, SAMSON AND MONTANA INDIAN RESERVES

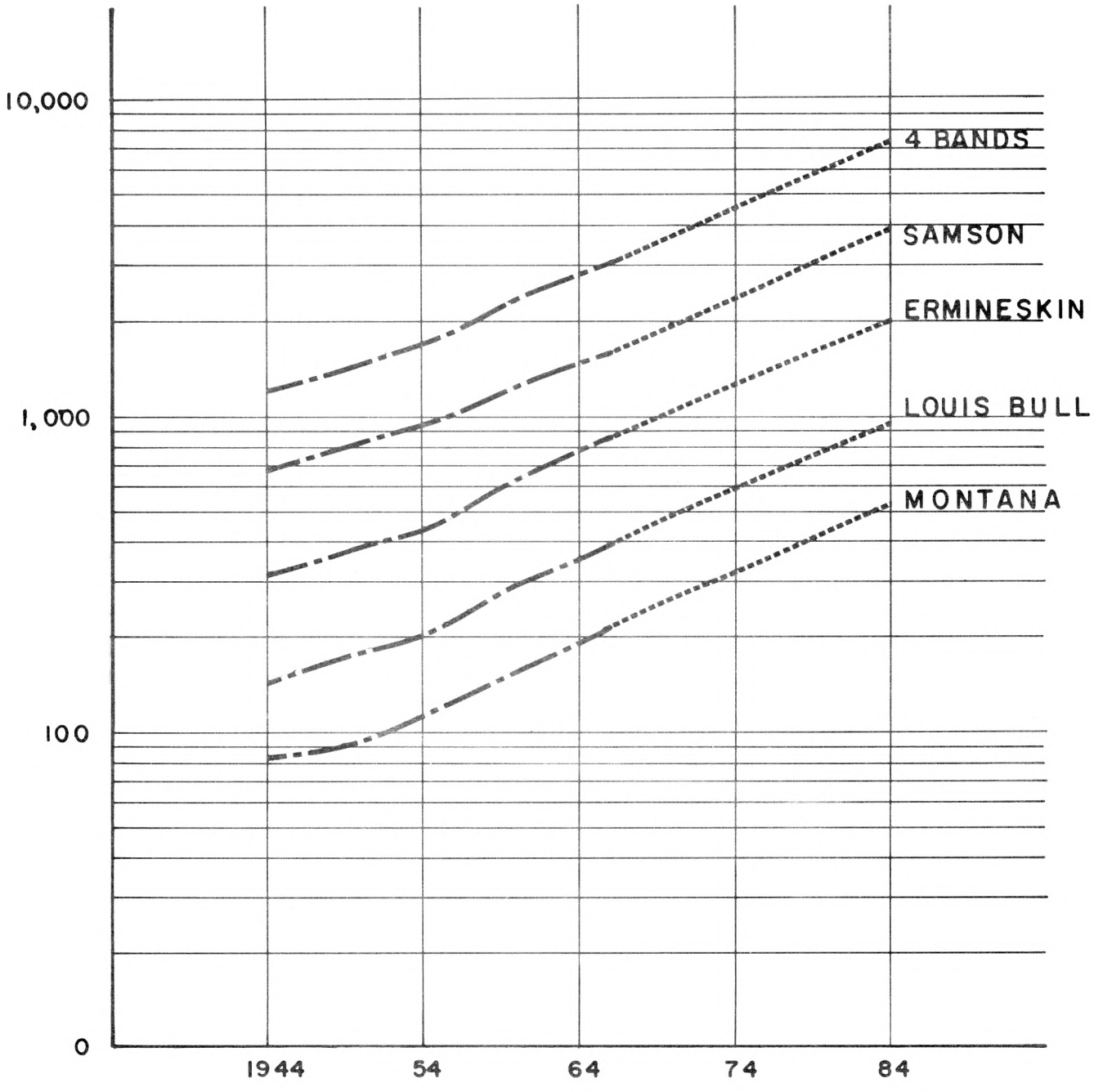

FIGURE 2

POPULATION PROJECTIONS FOR HOBBEMA RESERVES
BASED ON 5 % ANNUAL INCREASES

SOURCE OF HISTORICAL DATA - D.B.S.

jection has obvious implications in terms of the provision of adequate employment opportunities for a rapidly expanding labor force.

One of the demographic features noted on each of the Hobbema Reserves is the large percentage of families having a female as the household head. This phenomena has resulted from two basic causes: broken families and women bearing children out of wedlock. It is to be hoped that the alternatives for Reserve development outlined herein will lead to a more stable family situation on the Reserves. The latter facet of this problem, that of unwed mothers, will continue to exist and will probably become more predominant until such time as the Band Councils see fit to make the father responsible for his children. Under the present system, an Indian male can father as many children as he wishes, and accept no responsibility whatsoever.

Implications for the Future

If the Bands continue in their present pattern of playing the "welfare game" and taking little or no responsibility for their own lives, they will soon be in a position which will force the young people with any initiative to leave the Reserve as early as possible. The fact that between 80 to 90 per cent of the Band members expect the Reserves to be a worse place to live within the next 10 years confirms this statement and makes the prospects for the future appear rather gloomy.

Any plans for future development on the Reserves should:

(1) start by making the people aware of their present situation;

(2) outline the goals as enunciated by the people themselves;

(3) take into account the effect of any development on the social, economic, and physical facets of Reserve life;

(4) be concerned with developing the self-confidence and pride of the people;

(5) allow the Band members to contribute to the Canadian society in any way which seems appropriate to them;

(6) keep in mind that people are the most valuable resource on the Reserve;

(7) be worked out by the people themselves with outside assistance as required; not by outsiders;

(8) be economically feasible. The people on the Hobbema Reserves have had more than enough failures. Initial plans must hold a high degree of expectation of success.

Before any development of major consequence can be achieved on the Reserves, the members must be willing to undergo an educational and social change. This will involve a great deal of hardship on the Band members, but they have been caught in a technological society and there is no development alternative that does not require a great deal of effort on their part which holds any promise of making the Reserves a better place to live and a better place to bring up their children.

EDUCATION

This report is essentially a summary of various specific observations and comments made in each of the separate Band reports about educational services available to the Reserves. It is also an attempt to focus on major problems observed and to make major recommendations which might apply generally to the total system of education available to the Reserves of the Hobbema group. This discussion will consider current educational policies at the pre-school, in-school and post-school levels of education on the Reserves.

Pre-School

It is generally recognized that the policy of the Indian Affairs Branch at the present time is to provide pre-school education for all children on the Reserve whose parents wish them to take advantage of it. To this end, transportation is provided for any pre-schooler from the age of five who is not within walking distance of an established pre-school. All materials, books and qualified teachers are also provided to the extent possible.

The intended purpose of the pre-schools is to provide contact with the English language and to prepare children generally for the routines of school. Much play activity and opportunity to learn from actual contact with other children, together with the input provided by generally good teachers, has given this program considerable strength. The response seems to be very good. Attendance is usually good and teachers report that the program has made some considerable difference to the children who have gone through it during the last number of years.

Major problems and recommendations applicable to the pre-school program are as follows.

1. One of the major administrative problems is that the pre-schools are de-centralized, but it is difficult to determine at this time whether the administrative benefits to be accrued from centralization would militate against the second problem of parent involvement in the program. At this point in time it would seem that a planned program of parental involvement is extremely important to lay the foundation for the support of further education, and that it should not

be sacrificed for greater centralization. However, if both could be obtained then centralization of the pre-school program would be desirable.

2. There is no integration of white children in the pre-school program. It would appear that the effectiveness of this system could be increased if white children were included in the program. While this is perhaps not possible at this time it would appear to warrant further investigation.

3. Perhaps the most important problem at the pre-school level is the almost total lack of involvement of parents in the program. Band members could and should play an active role in the planning and implementation of pre-school programs. This involvement should include parental influence through an active pre-school committee, and parental presence in the class rooms by way of teacher aids who could give assistance with program preparation and materials. Parental acceptance of the pre-school program may be enhanced by the use of some Cree in the pre-school which may provide a link with the family and give children confidence in their own language as a language worthy of preservation.

It would seem that cultural adaptation and transition could best begin at the pre-school level. It is therefore worthy of more intense attention and planning in terms of its effect on the total educational program on the Reserves.

In-School Program

The most outstanding feature of the in-school program on the Reserves is the application of the policy of integration. This policy has had a marked effect on the total system since 1961. By integration is meant the policy of sending all children whose parents so desire to schools outside the Reserves at any level of education except pre-school. In terms of numbers it may be noted that the number of children attending Ponoka schools alone has risen from 21 in 1961-62 to 200 in 1968-69. This appears to be a remarkable achievement, and at the same time it should be noted that the number of students in the junior

and senior high schools has steadily increased in proportion to the total number of students.

The policy of integration has been variously accepted by different Reserves and has therefore been applied in somewhat different manners. The notable exception is the Ermineskin Reserve where children are still taught under the auspices of the Roman Catholic Church up to Grade 9. The presence of this school on the Reserve and its recent expansion provides the only available alternative to integrated education and thus presents an opportunity for the study and comparison of alternative systems.

Major problems and recommendations with respect to the in-school program may be described as follows.

1. Probably the most important decision to be made with respect to Indian education is the degree to which integrated education policies should be utilized. This problem cannot be adequately treated in any study such as this. The observed effects of an integrated system on students and on the Band members generally appears to be beneficial when measured by some standards and negative when measured by other standards. An integrated system is necessarily painful for a large number of students; yet it is quite painless and rather positive for other students.

   In order to become more fully aware of what integration is doing to and for their children, Band members should become much better informed about the present school system. It appears that children in the elementary grades have adapted much better than older students, who are still dropping out in large numbers and seem to find little satisfaction in more advanced education. This year for instance, there are no academic students in the high school. All 27 are pre-vocational. Even this is a considerable achievement when it is noted that less than 50 per cent of students from the Ermineskin school even get into high school.

   The major recommendation in this area must be to carry out a detailed study and analysis of the effect of integrated education on the Indian people.

2. Lack of communication between the schools and the home is a continuing problem in the educational system on the Hobbema Reserves. Many parents never go into the schools to find out how their children work in school, and many parents do not in fact know what grades their children are in and whether they should be doing better than they are. The obvious recommendation in this area is to involve more parents in the school program and to make more informal and/or formal opportunities available for them to become familiar with the school program.

3. Another problem of a general and continuing nature is the seeming lack of an educational program structured to meet the specific needs of the Indian people. For example, emphasis on language development seems to have been less than desirable. Weaknesses are showing up in critical areas when students are tested. Many Indian students are a grade or more behind in language development over the first six years of education. It is very possible that this problem derives from the home environment, but efforts should be made to overcome such influences during the elementary school years.

   Emphasis on vocational and pre-vocational education has been very weak in the past but should improve with the new school facilities in Ponoka. At Ermineskin the industrial arts program has not been very successful in the past.

   Adapted programs in the schools are not defined as to purpose. They are randomly directed and often sporadically employed to rectify some shortcomings in the program. The Ponoka schools report no major remedial programs or special assistance for Indian students, and it is correspondingly alarming to note that by far the majority of students never make more than C's or D's in their junior and senior high school examinations. It is recommended that continuing serious study be made of the remedial and corrective programs required by Indian children.

In summary it appears that much further research is necessary in the educational field in order to determine the most optimal direction of development. On the basis of current investigations and as a basis for further detailed study, the following is suggested as a hypothesis for further educational development on the Hobbema Reserves.

> " All Indian children should receive pre-school and elementary programs on the Reserve under non-integrated conditions whereby programs and curriculum can be adjusted as required so as to allow cultural as well as academic development of the child to the extent that, upon graduating from Grade 6, the Indian student will be academically proficient and culturally stable. Junior and senior high school will be taken either on or off the Reserve under integrated conditions, on the basis that the Indian student by this time has achieved sufficient stability with respect to his own culture to allow him to begin formal assimilation of a second and foreign culture. "

The above is a hypothesis only, which on the basis of current research appears to be viable. Further research is required before implementation of such a policy could be considered.

Post-School Education and Training

What is post-school education and training? How important is it on the Hobbema Reserves? What problems face people on the Reserves in connection with post-school education and training? How may the people overcome some of these problems? These are some of the important questions which are treated briefly in this section of the report.

First, what is post-school education? It means many different things to different people but is assumed here to include any education or training which a person receives after finishing or quitting school at any level whether that means after Grade 4 or Grade 12.

Secondly, how important is post-school education on the Reserves? It would appear that post-school education is far more important on the Reserves than most people realize, but it is still largely undefined and untried. Only in the last few years have some of the people realized that they may obtain a better education and receive more training which in turn will help them to lead better lives. It is only recently that the Department of Indian Affairs has offered a

very wide program for anyone who would like to continue his education. It is now possible for anyone on the Reserves to receive some kind of further education if he or she is willing to go through the necessary steps to get it. It appears that most people on the Reserves could and would take advantage of some kind of further education if the right arrangements could be made.

Some of the problems which have been recognized in the area of post-school education and training are as follows:

1. A very high percentage of people on the Reserves have little or no high school education. It must be recognized that this is a major handicap in the consideration of advanced education or training. Most of the programs sponsored or paid for by the Department of Manpower for example, assume that a person has some high school education. This means that in fact many of the people cannot qualify for the usual assistance provided.

2. Most of the programs for post-school education are provided off the Reserve. This means that special family arrangements must be made for those who want to take advantage of such programs.

3. Many members on the Reserves do not understand the conditions under which they may receive further education and training and do not know the steps to follow in order to take advantage of available programs.

4. To this time, it appears that very little long range planning has been done by the Band members themselves in terms of further education. It also appears that the Band members have only recently been encouraged to do any long range planning.

5. The location of programs and related transportation services are very important, yet this problem has been largely ignored in the past.

6. Courses have often been planned <u>for</u> the people but not always <u>by</u> the people. Involvement of the Band members is not only necessary but absolutely essential if school programs are to be successful.

7. Costs of post-school programs have usually been borne by the government through the Department of Indian Affairs. If some of the cost were shared by the Band Councils there would be more scope for independence regarding the planning of programs and this should result in less frustration for the people involved.

8. Most adult educators live off the Reserves. If the Bands were to invite educators to live on the Reserve, at leastfor some periods of time, a great deal of misunderstanding might be avoided.

9. Specific goals are not always understood by the people taking various programs of post-school training. This situation is quite understandable since in many cases programs seem to evolve without reference to any specific goal or purpose.

What might be done about some of these problems?

1. Since most members do not have a high school education it might be advisable to consider whether a common project of general upgrading would be a useful way for the people to obtain further training. The required nature of upgrading classes should be thoroughly investigated by the Band Councils with outside assistance as required. Such an investigation could be carried out in connection with overall planning for a general program of adult education. Field trips, formal lessons and personal home-study courses could be used to help persons who want to improve their education. Facilities should be made available throughout the Reserves so that all members would have an equal opportunity to upgrade their education. The use of incentives should also be tried.

2. The operation of the Manpower programs should be clearly understood. Special sessions of explanation should be provided for those persons who might qualify for assistance. This could also be done through the schools.

3. There seems to be a great need for on-Reserve programs. Few other groups of people are expected to make the family sacrifices that the Indian people have to make in order to obtain an education. The locational problem is accentuated by the transportation and communications problems which exist on the Reserves. The ideal locational solution is of course to locate programs where they may best accomplish their purpose. To this end, consideration should be given to the institution of a bus system for adult education programs similar to that used for the regular school programs. This would allow much greater locational flexibility, and thus enable usage of a wider range of facilities, such as those in the Composite High School at Ponoka. This school is willing to provide facilities if transportation can be arranged for off-Reserve evening programs. Transportation is also required to a somewhat lesser degree for programs on the Reserve. Such programs might be located in various homes throughout the Reserves and could operate as very effective small group education projects.

4. Far more factual information about education possibilities should be made available to interested persons. A systematic information service should be created on the Reserves.

5. Long range post-school planning should be carried out by the Band Councils with participation from the Department of Indian Affairs and interested Band members. Such planning should consider questions of location, program content, and staff requirements. The basic input to this process will be the wishes of the Band members themselves, which must be further studied and analyzed. Long range planning must also include a review of the financial resources available. Consideration must be given to the desirability of requesting financial participation on the part of those taking the various programs. Cost sharing of programs has already been a feature of some post-school education programs on the Reserve and this feature should be extended to include some personal cost sharing and individual contribution, even if that contribution is

relatively small. The level of local control should increase in proportion to the level of local financial input.

6. Goals which are established for educational programs should be separate and distinct for each level of education. Involvement of the Band members in formulating specific goals would do much to aquaint them with the purpose of the various programs but more important it would help them to understand why and how they can best achieve their personal education goals. In turn this involvement may assist in the development of the self-respect and sense of identity which is so necessary on the Reserves.

It has been stated at various points throughout this study that the Reserve youth represent the most valuable segment of the human resource and it follows that educational emphasis must lie in the area of successful development of today's youth. It is essential to note however, that a high degree of adult co-operation and encouragement is required in order to achieve this objective. It is felt that not only parental involvement in the school programs but also parental participation in a post-school education and training program will greatly enhance adult understanding of educational objectives and thus lead to a more successful educational program.

AGRICULTURAL DEVELOPMENT

Resource Evaluation

Soil

The evaluation of the agricultural resources on the Reserves was based primarily on a study of the soil resources. This information was obtained from the maps prepared as part of the Canada Land Inventory[1]. The Canada Land Inventory is a comprehensive survey of land capability and is an interpretive grouping which groups mineral soils into seven classes according to their potential for agricultural development. Within each class, sub-classes further group soils which have a similar limitation and provide information on the conservation practices necessary for that class of soils. A detailed description of the soil capability classification and a summary of the assumptions used is given in the Canadian Land Inventory Report No. 2[2].

A summary of the land capability with respect to cropping potential given on page 3 of the above report states:

> The first three classes are considered capable of sustained production of common clutivated crops, the fourth is marginal for sustained arable culture, the fifth is capable of use only for permanent pasture and hay, the sixth is capable of use only for wild pasture, while the seventh class is for soils and land types (including rock outcrop and small unmappable bodies of water) considered incapable of use for arable culture or permanent pasture. While the soil areas in classes one to four are capable of use for perennial forage they are also capable of use for perennial forage crops. Soil areas in all classes may be suited for forestry, wildlife and recreation.

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1 Assistance in data interpretation was provided by Mr. T. W. Peters and Mr. A A. Kjearsgaard of the Alberta Institute of Pedology, University of Alberta.

2 The Canada Land Inventory, Report No. 2 - 1965, Soil Capability Classification for Agriculture, Department of Forestry, Ottawa.

For the purposes of evaluating the land available for agriculture on the Reserves the grouping of soils in Table 3 was used.

TABLE 3 - SOIL GROUPINGS

Capability Class	Group	Crops
1, 2, 3	Arable	Grain, oilseed, hay
4, 5	Forage	Tame hay or pasture
6	Native	Wild pasture (native state)

Estimates of the land area in each of these classes were prepared from the soil capability maps. Arable land was considered as the acreage that can be developed or was already developed for sustained production of wheat, oats, barley, rapeseed, flax, tame hay, or tame pasture. The forage land was considered to be land that could be improved for tame pasture or tame hay to support some form of beef operation. The native land acreage was land that was classified as land unlikely to be improved but could still provide some pasture.

Since the estimated acreages included land occupied by the resident, and land with localized restrictions such as sloughs which would make cropping very difficult, the estimated areage available for sustained cropping (Class 1, 2, 3) was reduced by 15% in most cases. This acreage was added to the acreage of native land available.

Climate

Examination of the Canada Land Inventory Report[1] shows that the Reserves are located in Climatic regions 6G and 6H, the boundary in the center of the four Reserves at Hobbema, and on the border of Climatic region 5G. The eastern half of the Reserves are in zone 6G which is characterized by 1800 to 2200 degree days[2]. The area experiences 75 to 90 frost free days,

[1] The Canada Land Inventory, the Climates of Canada for Agriculture, Report No. 3, Department of Forestry and Rural Development, Ottawa, figure 24.

[2] ibid., figure 9, for a definition of degree days. It is a measure of the days above 42°F. during the growing season, as plant growth ceases below 42°F.

and 10 to 13 inches of precipitation from May to September. The western half of the Reserves are in zone 6H which is characterized by 1800 to 2200 degree days, 75 to 90 frost free days, and 12 to 15 inches of precipitation from May to September. Thus all Reserves have the same temperature characteristic but the precipitation during the growing season increases slightly from east to west. The average May to September precipitation[1] is 12 inches. The growing season[2] as measured by the date of the mean temperature above 42°F. extends from April 25 to October 6. These dates reflect the start and end of grass growth for the season. (Refer to Maps 4, 5 and 6.)

Resources Required by Farm Units

This section deals with the data used to determine the resources required to provide a reasonable return on each farm enterprise if the operator was involved exclusively in that enterprise. Obviously any combination of these enterprises can be obtained and in some cases they would be beneficial. The only enterprises considered were grain and forage crops on arable land, cow-calf enterprise for pasture utilization, a beef feedlot, and a farrow to finish swine operation for utilizing grain grown on the Reserve. Poultry and sheep operations could have been added but they require specialized interests, and similar operations in the form of the swine enterprise and cow-calf enterprise are already included.

The data used in this analysis was based on the performance of farmers in the Black Soil Zone of Alberta. Allowances were not made for the additional benefits of farming on the Reserve, such as:

(1) absence of income tax on income from Reserve enterprises,

(2) various grants from the Indian Affairs Branch (i.e. rotating herd program)

Interest on the investment required for the farm enterprises was charged at 5% per annum which is close to the rates charged by the Indian

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[1] ibid, figure 16,

[2] ibid, figure 7 and figure 8.

Affairs Branch. The added benefits mentioned above would serve to moderately improve the income potential of farming enterprises on the Reserve.

It may be noted that the assistance provided by the Indian Affairs Branch until very recently has tended to perpetuate small uneconomic farm units. Current programs appear to be moving toward supporting a more economic farm unit. (i.e. larger loans are being provided).

Cropping Enterprise

The data used here are a composite which resulted from detailed examination of the Alberta Farm Business Reports[1], 1966 Crop Enterprise Analysis[2], Economics of Grain-Fallow Rotations and Fertilizer Use in the Prairie Provinces[3], and the yearly estimated yields for the subject area published by the Alberta Department of Agriculture[4].

Tables 4 to 11 summarize the data used to determine the resources required by a "Basic Family Farm Unit" under two different plans by which rent is paid to the Band. The assumptions used to develop these units were:-

(1) The operator's earnings should be approximately $4,000 annually.

(2) The operator and his family could provide the necessary labor.

Barley and wheat were the only crops used in calculating the arable acreage required for these units as they are the principal crops grown in the area. Oats, flax, and rapeseed were included in Table 4 and Table 5 for comparison.

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1 Alberta Farm Business Reports 1962-66, Alberta Department of Agriculture, Economics Division, Edmonton, Alberta.

2 1966 Alberta Crop Enterprise Analysis, Alberta Department of Agriculture, Economics Division, Edmonton, Alberta.

3 MacKenzie, J. S., Economics of Grain-Fallow Rotations and Fertilizer Use in the Prairie Provinces, Economics Branch, Canada Dept. of Agriculture, Ottawa.

4 November Estimates of Production of Principal Crops, Alberta. Alta. Dept. of Agriculture, Statistics Branch, Economics Division, Edmonton, 1966-67-68

TABLE 4 - SUMMARY OF CROP PRODUCTION COSTS AND RETURNS PER CROP ACRE

ITEM	CROP				
	Wheat	Barley	Oats	Rapeseed	Flax
	$	$	$	$	$
Seed	2.00	1.50	1.00	.75	1.40
Chemicals	.40	.40	.40		
Fertilizer	3.90	3.90	3.90	3.90	3.90
Other Cash Costs	1.50	1.50	1.50	1.80	1.80
Total Direct Cash Costs	7.80	7.30	6.80	6.45	7.10
Equipment Operating Costs	3.80	3.80	3.80	3.80	3.80
Building Maintenance	.45	.50	.60	.10	.10
Total Variable Costs	12.05	11.60	11.20	10.35	11.00
Equipment Depreciation and Interest at 5%	5.80	5.80	5.80	5.80	5.80
Building Depreciation and Interest at 5%	.95	1.05	1.15	.10	.10
Total Fixed Costs	6.75	6.85	6.95	5.90	5.90
Total Production Costs Excluding Land Rental and Labor	18.80	18.45	18.15	16.25	16.90
Yield per Acre	26 bu.	35 bu.	45 bu.	800 lbs.	13 bu.
Price	1.45	.95	.60	.045	2.75
Gros Returns	37.70	33.10	27.00	36.00	35.75

It should be noted in Table 5 that if the Band receives one quarter of the crop, over 1,900 acres of oats must be seeded to give an average income of $4,000 to the operator. If the Band receives one-third of the crop over 1,100 acres of barley have to be seeded. At the present time, it is difficult for one man to farm this much land. It becomes apparent that a crop rotation of wheat and barley with the Band receiving one quarter of the crop is the only feasible plan from the data in this table. Flax and rapeseed are two other alternatives but they are high risk crops.

TABLE 5 - ACREAGE REQUIRED TO PROVIDE OPERATOR $4,000 ANNUAL INCOME USING DIFFERENT CROPS

Rental Plan	Acreage Per Farm Unit			Band Income	
	Cropped	Fallow	Total	Total	Per Acre
No Rent Paid to Band					
Wheat	212	71	283	$ -	$ -
Barley	273	91	364		
Oats	452	151	603		
Rapeseed	202	67	269		
Flax	212	71	283		
Band Receives 1/4 of Crop					
Wheat	421	140	561	3,957	7.05
Barley	628	209	837	5,200	6.21
Oats	1,905	635	2,600	12,858	4.95
Rapeseed	372	94	456	3,348	7.35
Flax	404	135	539	3,612	6.70
Band Receives 1/3 of Crop					
Wheat	633	211	844	7,957	9.43
Barley	1,104	368	1,472	12,177	8.27
Oats	----------Operator loses money----------				
Rapeseed	516	172	688	6,192	9.00
Flax	578	193	771	7,020	9.10

Note: The rotation was assumed to be 3 years crop and 1 year fallow.

Other forms of payment to the Band may be considered rather than the one quarter crop share arrangement mentioned above. Such methods might include cash leases, payment of a fixed percentage of return on investment, or an assessment system based on services supplied by the Band. Each of these systems would tend to change the distribution of income between farmer and Band, but would not change the total income.

Use of any system which would result in the Band receiving less revenue than would be realized through leasing the land to white farmers must be recognized as a subsidy to Band farmers. The Band must decide if it wishes to subsidize Indian farmers, and act accordingly.

Using a crop rotation of one-half barley, one quarter wheat and one quarter summer fallow on 700 acres, a farmer on the Reserve can expect an average gross return of $18,183. To achieve this gross return how-

ever, he must use good management and put about 100 lbs. of 23-23-0 fertilizer or equivalent per acre on the stubble land, and spray for weeds.

TABLE 6 - PHYSICAL PRODUCTION AND RETURN FOR BASIC FAMILY FARM ON RESERVE UNDER 1/4 CROP SHARE RENTAL

Item	Acres	Average Yield		Total Value
Wheat	175	26 bu.	$	6,598
Barley	350	35 bu.		11,585
Fallow	175			
Total Crop Acres	700		$	18,183

TABLE 7 - COST OF PRODUCTION AND PROFIT FOR FAMILY FARM ON RESERVE UNDER 1/4 CROP SHARE RENTAL

Item		Value	
Value of Production			$ 18,183
Direct Cash Costs			
Wheat	$ 1,365		
Barley	2,555		
Equipment and Buildings - Variable Cost			
Wheat	$ 744		
Barley	1,505		
Total Variable Costs			6,169
Net Above Variable Costs			$ 12,014
Fixed Costs			
Wheat	$ 1,181		
Barley	2,398		
Total Fixed Costs			3,579
Net Above Fixed and Variable Costs			$ 8,435
Crop Rental to Band (1/4 Crop Share)			
Wheat	$ 1,649		
Barley	2,896		
Total Rental to Band			4,545
Net Return to Labor and Management			$ 3,890

TABLE 8 - CAPITAL REQUIREMENTS OF FAMILY FARM ON RESERVE UNDER 1/4 CROP SHARE RENTAL

Item		Value
Operating Capital	$	6,200
Machinery and Equipment Capital		24,000
Building Capital		7,400
TOTAL CAPITAL	$	37,600

Table 8 shows the cost of starting a 700 acre farm. The $31,400 would be required the first year to buy machinery and graineries, and the $6,200 required for fertilizer, oil, gas, spray, repairs and seed. It is assumed that good used equipment would be bought.

Tables 9, 10 and 11 show the economic and physical requirements for a family farm which is paying the Band 1/3 of the crop. The farm would require 1,200 acres of crop land assuming a rotation of one-half barley, one quarter wheat and one quarter summer fallow. The gross return on this size grain farm would be $31,170 and the Band would receive $10,390. To start a farm of this size $64,600 would be required the first year. This assumes that good used machinery is purchased and kept in good repair. After the first year, operating costs would be the only direct cash cost, but it would increase as the repair bill went up.

TABLE 9 - PHYSICAL PRODUCTION AND RETURN FOR BASIC FAMILY FARM ON RESERVE UNDER 1/3 CROP SHARE RENTAL

Item	Acres	Average Yield		Total Value
Wheat	300	26 bu.	$	11,310
Barley	600	35 bu.		19,860
Fallow	300			
Total Crop Acres	1,200		$	31,170

It becomes evident that a one-third crop share arrangement puts the operator at an extreme disadvantage. If the Band wants to rent land on a one-third crop share agreement to Band members, they should probably

share one-third of the cost of fertilizer and spray. This would amount to $3,870 which would lower the risk that the farmer was taking. If this procedure was followed, the Band would net $6,520 but only 1,040 acres would be required for the operator to make $4,000.

TABLE 10 - COST OF PRODUCTION AND PROFIT FOR FAMILY FARM ON RESERVE UNDER 1/3 CROP SHARE RENTAL

Item		Value
Value of Production		$ 31,170
Direct Cash Costs		
Wheat	$ 2,340	
Barley	4,380	
Equipment and Buildings - Variable Costs		
Wheat	$ 1,275	
Barley	2,580	
Total Variable Costs		10,575
Net Above Variable Costs		$ 20,595
Fixed Costs		
Wheat	$ 2,025	
Barley	4,110	
Total Fixed Costs		6,135
Net Above Fixed and Variable Costs		$ 14,460
Crop Rental to Band (1/3 Crop Share)		
Wheat	$ 3,770	
Barley	6,620	
Total Rental to Band		10,390
Net Return to Labor and Management		$ 4,070

TABLE 11 - CAPITAL REQUIREMENTS OF A FAMILY FARM ON RESERVE UNDER 1/3 CROP SHARE RENTAL

Item	Value
Operating Capital	$ 10,600
Machinery and Equipment Capital	41,800
Building Capital	12,200
Total Capital Required	$ 64,600

Cow-calf Enterprise

The data for the cow-calf enterprise were obtained from the Alberta Cow-Calf Enterprise Analysis by B. A. Hackett[1]. The data for farmers on Black Soils were used. The major difference here is that rather than putting a direct charge on hay and pasture, it was assumed that the operator would utilize land which could not be cropped, and instead would pay a pasture rental. This was then used to determine the physical and capital resources required to give the operator an annual income to labor and management of $4,000, assuming that the operator and his family provide all the necessary labor. Grazing rates for the pasture and the cost of maintaining tame pasture were obtained from Love and McMillan[2]. The grazing of crop residue was not included in this analysis. The cost of harvesting forage was calculated from equipment costs given in the Farm Management Data Manual[3] based on yields equal to 80% of the November estimates[4] for the area. The yield estimates were reduced to 80% of the November estimates because:

(1) The land for hay and pasture was in land capability Class 4 and 5.

(2) 1966 crop production was substantially above average.

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1 Hackett, B. A., Alberta Cow-Calf Enterprise Analysis, Alberta Dept. of Agriculture, Economics Division and Animal Industry Division, Edmonton, Reports for 1965, 1966 and 1967 Highlights.

2 Love, H. C. and M. L. McMillan, Alberta's Pasture Resources and Estimated Potential Production From Improvement of Privately Owned Land, Agricultural Economics Research Bulletin 6, University of Alberta, 1968.

3 Farm Management Data Manual, Farm Machine Rates - Alberta. Dept. of Agriculture, Economics Division, Edmonton.

4 November Estimate of Production of Principal Crops, Alberta Dept. of Agriculture, Economics Division, Statistics Branch, Edmonton, Reports for 1966, 1967 and 1968.

TABLE 12 - PHYSICAL RESOURCES REQUIRED BY COW-CALF ENTERPRISE

Item		Amount Per Cow
Acres of Hay to supply 2.4 tons of hay when yield = 1.2 tons/acre		2.0 acres
Pasture required per cow unit @ 85% calf crop (Animal Unit Months)[1]		
Cow	6.00	
Calf	1.70	
Bull (1 bull per 30 cows)	.20	
Replacements (20% per year)	.80	
Total	8.70	9.0 AUM

TABLE 13 - COST OF PRODUCTION AND RETURN PER COW

Item		Value
Gross Return per Cow		$ 90.00
Direct Cash Costs		
Grain and millfeed	$ 6.15	
Harvesting 2 acres hay	6.09	
Veterinary and medicine	1.40	
Reseeding hay every 5 years	2.00	
Other variables (Marketing, building and equipment maintenance and operating)	8.50	
Total Direct Cash Costs		24.14
Net Above Variable Costs		$ 65.86
Fixed Costs		
Haying Equipment (depreciation and interest)	$ 4.42	
Insurance and depreciation (Fences, buildings, feeding equipment)	5.00	
Interest on Fences, Buildings and Feeding Equipment	2.10	
Interest on livestock	9.90	
Total Fixed Costs		21.42
Net Above Fixed and Variable Costs		$ 44.44

[1] Bauer, L. E., 1966 Alberta Farm Business Report, Alberta Dept. of Agriculture, Economics Division, Edmonton, page 25.
Animal Unit Month is a measure of the amount of pasture feed required to support one cow for one month.

Table 13 - Cost of Production and Return per Cow (Cont'd.)

Item	Value
Land Rental where hay acreage equals 4 AUM Total = 13 AUM @ $1.80/AUM	23.40
Net Return to Labor and Management	$ 21.04

Table 13 gives the costs and return per cow based on an 85% calf crop weaned. Direct cash costs come to $24.14 and fixed costs are $21.42. In addition to this there is $23.40 for pasture and hayland.

TABLE 14 - COST OF PRODUCTION AND PROFIT FOR FAMILY LIVESTOCK FARM ON RESERVE

Item		Value
Gross Returns		$ 15,750
Direct Cash Costs		4,225
Net Above Variable Costs		$ 11,525
Fixed Costs		
Depreciation and Insurance on Buildings and Machinery	$ 1,494	
Interest on Livestock, Buildings and Machinery	2,254	
Total Fixed Costs		3,748
Net Above Fixed and Variable Costs		$ 7,777
Band Rental		4,095
Net Return to Labor and Management		$ 3,682

Tables 14 and 15 give a general outline of the physical requirements and financial picture of a cow-calf operation yielding the operator about $3,700. The return is below $4,000 because one man and his family cannot feed and handle more than 175 head of cows without considerable expense being incurred for mechanization. It should be noted that the Band receives more from this size of an operation than the farmer does.

TABLE 15 - RESOURCES AND CAPITAL REQUIRED BY BASIC LIVESTOCK FARM ON RESERVE

Resource		Amount
Cows	175	
Hay Acreage	350 acres	
Pasture Acreage	1,575 AUM[1]	
Labor Required	2,600 hrs	
Operating Capital		$ 4,225
Machinery and Equipment Capital		15,400
Livestock Capital		34,650
Total Capital		$ 54,275

Beef Feedlot

Data used in this analysis were obtained from Alberta Cattle Feeding Analysis Reports by B A. Hackett[2]. The data were used to provide a basis for comparison with the other farm enterprises. Extreme care should be used in evaluating this enterprise as the price of feeder cattle and slaughter cattle varies quite widely. Cost data were the average of the medium cost group in the Black Soil Zone for 1965, 1966 and 1967. It is felt that these figures are representative of the cost of feeding cattle. The data on gross returns from the average of the same groups include the value of inventory at the beginning and end of the year. Thus gross returns in the study were not simply a study of the sales value per steer less the buying cost of the steer. The gross returns also include a return on the weight gain of animals that are in the feedlot at year end.

Table 16 is based on a gross return of $25.17 per 100 pounds of live animal produced (weight added from the feeding enterprise) rather than $27.28 which is the average gross return in the analysis reports. The data from the Cattle Feeding Analysis show that the average weight of the feeders was 589 pounds and the average purchase price was $23.53 per 100 pounds.

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1 1575 AUM is equivalent to 1750 acres of native pasture or 830 acres tame pasture.

2 Hackett, B. A., Alberta Cattle Feeding Enterprise Analysis, Alta. Dept. of Agriculture, Edmonton, 1965 and 1966 Reports, 1967 Highlights.

The average price and average weight of slaughter cattle sold was $24.21 per 100 lbs. and 1,008 pounds respectively. In order to achieve a return of $27.28 per 100 lbs. of live animal, the average selling price would have to be $25.08 per 100 pounds or $0.87 above the average selling price. The higher return was due to a larger margin on inventory. The labor and management return would be $4.44 per 100 pounds of live animal produced if the gross return was $27.28.

This illustrates the importance of marketing in achieving satisfactory returns to a cattle feeding operation. Hackett[1] shows some of the variation in feeder cattle prices in recent years and indicates some of the factors which may aid an operator in his management decisions. Due to the variability of the returns to cattle feeding, the size of the basic unit should be regarded as a general guide for comparison with the other enterprises.

The data were used to estimate the resources required to provide the operator with an annual labor and management income of $4,000. These data are summarized in Tables 16 to 18. All estimates are expressed on the basis of 100 pounds of live animal produced.

From Table 16 it becomes apparent that a man will receive $2.02 per hour on a cattle feeding enterprise. However, this $2.02 is for labor, management and taking the risk (which is quite high in this enterprise). The size of operation as shown in Table 17 will allow for some spare time on the part of the feeder. It is quite possible that he could work for a farmer in spring and fall.

Table 18 shows an initial capital investment of $63,714. This total includes only one-half the total annual number of cattle fed and one-half the total annual operating expenses because there will be two groups of 218 cattle fed each year.

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[1] Hackett, B.A., 1966 Alberta Cattle Feeding Analysis, Alberta Dept. of Agriculture, Edmonton, page 53.

TABLE 16 - ESTIMATED COST OF PRODUCTION, PROFIT AND INVESTMENT PER 100 POUNDS OF LIVE ANIMAL PRODUCED IN CATTLE FEEDING ENTERPRISE

Item		Value
Gross Return		$ 25.17
Feed Costs		
Grain and Millfeed	$ 14.28	
Roughage	3.17	
Pasture	0.40	
Total Feed Cost		17.85
Net Above Feed Cost		$ 7.32
Other Variable Costs		
Veterinary and Medicine	$ .27	
Other variable costs (building and equipment maintenance, etc.)	1.43	
Total of Other Variable Costs		1.70
Net Above Variable Costs		$ 5.62
Fixed Costs		
Insurance and Depreciation	$ 1.19	
Interest (building and equipment)	.59	
Interest on livestock	1.61	
Total Fixed Costs		3.39
Return to Labor and Management		$ 2.23
Labor required per 100 lbs. live animal produced		1.1 hr.
Investment per 100 lbs. produced		
Buildings and Equipment		$ 9.64
Livestock		$ 32.26

TABLE 17 - ESTIMATED COST OF PRODUCTION AND PROFIT FOR CATTLE FEEDING OPERATION YIELDING ANNUAL OPERATOR EARNINGS OF $4,000

Item		Value
Gross Returns (1794 100 lb. units)		
Sale value 428 cattle @ $244	$	104,432
Less Purchase 436 cattle @ $136		59,296
Gross Returns on Added Weight	$	45,136
Total Variable Costs		35,073
Net Above Variable Costs	$	10,063
Total Fixed Costs		6,082
Return for Labor and Management	$	3,981

TABLE 18* - RESOURCES REQUIRED BY CATTLE FEEDING OPERATION YIELDING ANNUAL OPERATOR EARNINGS OF $4,000

Item		Amount
Cattle Required	436	
Labor Required	1,973 hrs.	
Building and equipment investment		$ 17,240
Livestock Investment (1/2 of total)		28,937
Operating (1/2 of total Variable Costs)		17,537
Total Capital Required		$ 63,714

* Table 18 is based on a livestock turnover of 2.0. Thus only 218 cattle would be fed at one time and this reduces the capital required for livestock.

Swine-Farrow-Finish Operation

Data are included on the resource requirement of a swing operation that would provide the operator with an annual labor and management income of $4,000. The data for this unit were taken from the Alberta Hog Enterprise Analysis reports by Hackett and Reddon[1]. Since the only land

[1] Hackett, B. A., and A. Reddon, Alberta Hog Enterprise Analysis, Alberta Dept. of Agriculture, Edmonton -- 1965 and 1966 Reports, 1967 Highlights.

required is for buildings, space limitations for this type of enterprise are minimal. Market and capital limitations are more significant. The number of swine operations or the size of a swine operation depends on the capital investment. For the purposes of this analysis, any economies of scale that would result from a very large operation are assumed to be an added benefit. The 1966 report[1] gives a good summary of where economies of scale are likely to occur.

Cost data are the average of the three years for the medium cost group in the reports[1] and return data were based on the 1967 returns which were slightly above the ten year average and about 4 per cent below the average for the previous five years. Tables 19 to 21 summarize the resources required for the "standard" swine unit.

The labor requirement shown in Table 21 indicates that one man will be working 184 days at 8 hours per day. Since this is not full employment he has two alternatives. He can expand the operation after he is sure he can manage this size successfully or he can work at some other enterprise. It must be stressed that very high levels of management must be maintained to achieve the return shown above.

Multiple Family Units

Detailed cost and return data were not prepared for a multiple family farm for two reasons:

(1) Some economies of scale occur mainly in the areas of reduced labor and equipment charges and increased production per unit. However, it was felt that multiples of the single family unit would give a good estimate of resource and earning potential.

(2) The difference between the linear programming analysis of the total reserve and multiple family units was not significant in the case of Montana and Louis Bull.

If an estimate is needed of the resources required for a multiple family farm, it can be obtained by multiplying the number of families working on the farm by the resources required by the single family units discussed previously.

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[1] ibid.

TABLE 19 - ESTIMATED COST OF PRODUCTION, PROFIT, AND INVESTMENT PER MARKET HOG PRODUCED IN HOG ENTERPRISE

Item		Value
Gross Return		$ 42.00
Variable Costs		
Grain	$ 16.94	
Millfeed	6.02	
Roughage	.35	
Pasture	.01	
Total Feed Cost		23.32
Net Above Feed Costs		$ 18.68
Other Variable Costs		
Veterinary and Medicine	$ .59	
Other Variable Costs (Building and Equipment Maintenance, etc.)	3.10	
Total of Other Variable Costs		3.69
Net Above Variable Costs		$ 14.99
Fixed Costs		
Building and Equipment Depreciation	$ 2.80	
Building and Equipment Interest	1.50	
Interest on Livestock	1.09	
Total Fixed Costs		5.39
Return for Labor and Management		$ 9.60
Labor Required to Produce a Market Hog	3.5 hr.	
Average Number of Pigs Weaned/Sow/Year	13	
Investment Required per Sow		
Building and Equipment		$ 397.
Livestock		$ 283.

TABLE 20 - ESTIMATED COST OF PRODUCTION AND PROFIT FOR HOG ENTERPRISE YIELDING ANNUAL OPERATOR EARNINGS OF $4,000

Item	Value
Gross Returns from 416 Market Hogs	$ 17,472
Total Variable Costs	11,236
Net Above Variable Costs	6,236
Total Fixed Costs	2,242
Return for Labor and Management	$ 3,994

TABLE 21 - RESOURCES REQUIRED BY HOG ENTERPRISE YIELDING ANNUAL OPERATOR EARNINGS OF $4,000

Item		Amount
Sows Required	32	
Labor Required	1,472 hr.	
Building and Equipment Investment		$ 12,700
Livestock Investment		9,100
Operating		11,000
Total Capital Required		$ 32,800

Trends in Farm Sizes

The data used to determine the resources for a single family unit are based on past experience. Farms have been expanding in both physical size and capital resources in the past and indications are that they will continue to do so. Thus the number of families that can be supported in the future by crops and cow-calf enterprises will be less than the estimates provided in this report. The increase in farm size from 1956 to 1966 which has occurred in the two counties which border the Reserve, agrees with the findings in a report by Purnell, Andarawewa, and Stutt[1] who have projected the resource use on Canadian farms to 1980 based on the average

[1] Purnell, G.R., A.B. Andarawewa, and R.A. Stutt, Outlook in Patterns and Practices in Agriculture, Economics Branch, Dept. of Agriculture (Canada), Ottawa, January 13, 1969, Table 8.

rate of growth from 1961 to 1966. They indicate that the capital requirements machinery investment, and acres per farm, will increase while the workers per farm will decrease. Thus, some provisions should be made for the expansion of Reserve farms if they are to remain competitive.

Linear Programming Analysis

Linear programming is a mathematical method based on a system of m+1 simultaneous equations where there are more variables than there are equations. One equation is defined to measure desirability of the system (e.g. profit to a business) and the solution is defined as the combination of m variables where the value of this equation is maximum or minimum. The problem is defined mathematically as:

Maximize

$$Z = \sum_{j=1}^{n} C_j \quad X_j$$

Subject to the restraints

$$\sum_{j=1}^{n} a_{ij} x_j = b_i \qquad i = 1, 2, \ldots\ldots\ldots, m$$

and $X_j \geq 0$ where $m \leq n$.

The method of solving the problem was developed by G.B. Dantzig[1] in 1947. However, linear programming was not widely used until digital computer programs were made available in the lates 1950's. Since then, the mathematics of solving the problem have been extended and very flexible and efficient digital computer programs have become readily available.

A linear programming analysis was performed on each Reserve to determine the enterprises which should be used on the Reserve according to varying levels of capital inputs to the Reserve. This was on the basis that the total agricultural resources on each Reserve would be under the direction of one manager who had a number of assistants. The input data for each Reserve consisted of the standard cost and returns which were developed in the previous sections. This did not change from Reserve to Reserve. The variable data for the Reserve consisted of the estimated land areas that were capable of development plus the land area that had already been developed for agricultural purposes. A basic matrix for all four Reserves was prepared as illustrated below.

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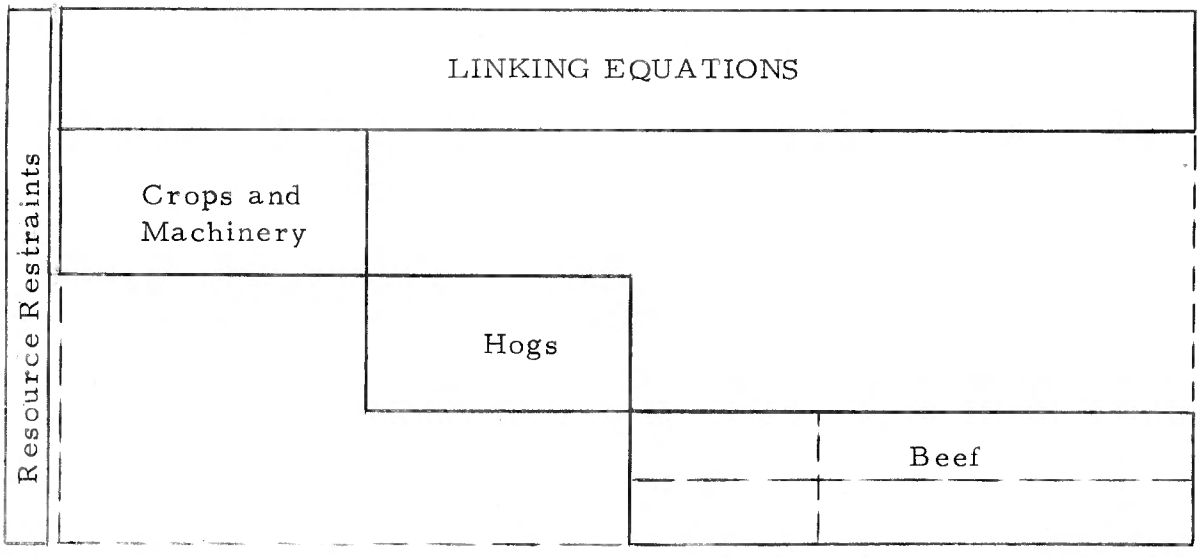
[1] Dantzig, George B. - Linear Programming and Extensions, Princeton University Press, Princeton, New Jersey, 1963.



The type of information in each block of the standard matrix illustrated above is as follows:

1. resource restraints - a summary of land and monetary resources on the Reserve
2. linking equations - equations which represent the common resources of each enterprise on the Reserve. Examples are the capital used and product balances such as barley which is produced by the cropping section and consumed by the livestock section.
3. crops and machinery - equations which can select the cropping program best suited to the unit while still remaining within the land resource and crop rotation limits
4. hogs - the equations to select the most economical combination of major feed components for the hog ration
5. beef - equations to select cow-calf or feeder enterprise and to select the most economical ration in each case.

The only changes that were made to run the linear programming analysis on each Reserve were to change the amount of arable land, amount of pasture land and the amount of capital resources for each Reserve. The summary of the analysis appears within the individual Reserve reports.

Development Capability

Table 22 shows the aggregate acreage estimates for the Hobbema Reserves, revised to make appropriate allowances for the Community Pasture and for small non-arable areas such as sloughs.

TABLE 22 - AGGREGATE ACREAGE ESTIMATES FOR HOBBEMA RESERVES

Group	Estimated Acreage	Revision	Revised Estimated Acreage
Arable	63,282	-13,032	50,250
Forage	9,244	- 1,969	7,275
Native	4,363	+ 9,091	13,454

Table 23 shows the aggregate income capability of Reserve lands, assuming an investment of $1.2 million to improve Reserve lands.

TABLE 23 - AGGREGATE CAPABILITY AFTER $1.2 MILLION INVESTMENT TO IMPROVE RESERVE LANDS

Resource	Farm Units	Farm Capital	Income Operator	Band	Alternative Rental Income @ $8/acre
		$000's	$000's	$000's	$000's
Crops (50,250 acres)	73.6	2,688	280	325	401
Livestock (25,180 AUM)	11.3	614	52	45	45
Total	84.9	3,302	332	370	446

It will be noted that the Reserves have an aggregate capability of providing a basic $4,000 annual income to 84 family farm units for a total operator income of $332,000, while providing Band income of $370,000 under a 1/4 crop share rental basis. Thus the total income potential is $702,000 per annum, as compared to a potential lease income of $446,000. This assumes investments of $1.2 million in land improvement and $3.3 million in farm capital.

The viable alternative to the crop enterprise described above involves the development of a heifer feeding enterprise. Table 24 shows a possible combination of investments which comprise a total equivalent to the total investment required for the crop enterprise described above.

TABLE 24 - PROJECTED RETURNS AND EMPLOYMENT FOR A TOTAL $4.4 MILLION INVESTMENT IN HEIFER FEEDING ENTERPRISE

Reserve	Investment	Return	Employment
	000's	000's	000's
Samson	2,000	504	100
Ermineskin	1,600	403	84.5
Louis Bull	400	85	14.6
Montana	400	99	20.5
Total	4,400	1,091	219.6

Source of data: Individual Band Reports

A comparison of these two enterprises indicates that, for an equivalent total capital investment, the heifer feeding operation promises a higher rate of return ($1,091,000 vs. $702,000) while offering a slightly higher level of employment (219,600 hrs. is equivalent to approximately 110 man years).

It must be recognized however, that the more profitable enterprise involves a higher degree of risk, and a higher management requirement. These two factors are evaluated in the following discussion.

Management

Throughout this section, good management has been stressed. Unless management of a high quality is available, there is little likelihood of any project succeeding. The following quotation [1] summarizes some of the more important aspects of management.

[1] Carlson, D., Modern Management Organization for Economic Co-operation and Development, Paris, 1962, P. 20.

The job of management may be broken into three major phases:

1. the management of money;
2. The management of things;
3. The management of people.

Each of these distinct areas requires specific management skills, knowledge, and interests. The total management job requires a smooth integration of all three phases, and they must be kept in balance; otherwise, the organization as a whole gets into difficulties.

The Functions of Management

So that the whole subject of modern management can be better understood, it has been broken down into five major functions as follows:

I. Planning;
II. Organization and staffing;
III. Direction and leadership;
IV. Co-ordination;
V. Controls.

Obviously, these functions are inter-related. It is impossible to treat with any one function without overlapping with other functions. For purposes of this study we will endeavour to deal with those activities which are most apparent in each of the areas indicated above.

These functions of management have been identified by some writers as : planning, organization, integration, and measuring. Other writers call them: planning, organization, directing and controlling. A number of other concepts closely related to these terms have been published from time to time in various text books and articles.

The Major Functions of Management

Detailed activities within each of the five major functions of management include many factors, such as:

I. Planning

1. Trends;
2. Objectives;
3. Policies;
4. Programs;
5. Budgets;
6. Works assignments;
7. Schedules;
8. Growth and expansion;
9. Controls and reports;
10. Improvements.

II. Organization and Staffing

1. Organization charts ;
2. Functional charts;
3. Position descriptions;
4. Performance standards;
5. Job evaluations;
6. Qualification requirements ;
7. Compensation program;
8. Staffing and recruitment;
9. Relationships;
10. Personnel utilization.

III. Direction and leadership

1. Delegation;
2. Interpretation;
3. Understanding;
4. Acceptance of accountability;
5. Training and motivation;
6. Discipline;
7. Group dynamics;
8. Morale;
9. Productivity;
10. Job satisfaction.

IV. Co-ordination

1. Communication up, down, across;
2. Integration of all activities;
3. Within the organization;
4. Within departments ;
5. Between departments;
6. Between H.Q. and Field;
7. With regulatory agencies;
8. With the industry;
9. With the community;
10. All other relationships.

V. Controls: ratios, standards

1. Criteria for measuring results;
2. Project desired results;
3. Establish check points;
4. Schedules and time tables;
5. Sequence of importance;
6. Performance appraisals;
7. Remedial action:
8. Work simplification;
9. Audits and reports;
10. Board approvals.

To carry out many of the functions mentioned above, good records are essential. Unless the manager knows what is going on in the business, he cannot make rational decisions for the future. Decisions based on guesses usually result in error.

> There are many reasons that an organization may fail to make profits. However, experts agree that incompetent management is the number one cause. Dr. A. M. Woodruff, in a study prepared for the Small Business Administration analyzed a number of unprofitable business ventures and contrasted them with the other firms that had achieved a good deal of success. He states:

> None of the failures studied occurred because the firm was small. They all occurred because of a very obvious, easily identified management error. The management error might have occurred because one man was saddled with too much, and didn't have time to devote to his various responsibilities, a situation indirectly associated with the smallness, but in the last analysis, the failure was occasioned by a management error which could have been avoided.
>
> High on the list of management blunders cited in this same study was failure to provide or require "adequate records". In some instances, the accounting papers were no more than checkstubs and a single entry notebook. Vague notions of accounts receivables and cost position were substituted for accurate records.[1]

Many farmers fall into the category mentioned above. However, as will be shown in the next section, these are the people being forced to quit farming. If any Band member wants to be a farm manager, he must be willing to provide the management resources necessary to maintain the production levels achieved by the farmers who supplied the data for:

a) The November crop yield estimates,

b) the Ablerta cow-calf Enterprise Analysis.

c) the Alberta Cattle Feeding Enterprise Analysis, and

d) the Alberta Hog Enterprise Analysis.

The management requirements can be roughly categorized into decision making abilities and supervision abilities.

Decision making abilities are the qualities necessary to provide the overall management for the farm. The manager must be able to evaluate pertinent information to choose the best alternative for his operation. He must be willing to make the effort to get as much information as possible on the technology available and the risks and uncertainties involved. Once he has the information, he then must be able to analyze it in the light of his financial

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[1] Nelson, R.H., Management Handbook for Tribal Business Leaders, Bureau of Economics and Business Research, University of Utah, 1965, p.6.

position and his overall objectives. Once he has analyzed the information he must then make a decision and be able to put his decision into effect. These decisions involve items such as: which crops should he grow according to current market restrictions and the capability of his land; when should he buy and sell cattle; when should he emphasize being more efficient in the enterprises currently on the farm; when should he try new techniques.

In summary, the steps in decision making are:

1. Clarify the problem.
2. Gather all available information.
3. Analyze problem.
4. Arrive at decision.
5. Put the decision into effect.
6. Accept the results of the decision, good or bad. This means taking calculated risks to maximize returns, and evaluating the results of every decision after it has been carried to completion.

Once he has decided to take a particular course of action, the manager's supervisory skills are used. This is the ability to organize men and equipment to get the particular job done. On smaller operations, this also involves the skills of operating equipment correctly and efficiently, being able to spot livestock that are not producing, and to correct production problems. The manager must be able to organize operations to meet dead lines as closely as possible, when adverse weather delays him. It is the organizational ability and farming skills which govern the physical production and cost of production for an enterprise. The ability to choose the correct combination of enterprises and the correct time to market is a decision making ability which greatly influences the profitability of the farm operation.

Each farm enterprise requires different skills. Thus the crop enterprise requires the ability to operate equipment and complete the operations on time while the cattle feeding enterprise requires the ability to keep feeders eating high energy rations to maintain weight gains. Lost production occurs whenever the operator does not meet the daily supervisory requirements of the enterprise.

Risk and Uncertainty

The prices used to establish basic farm units were obtained from the enterprise studies conducted in recent years by the Economics Division of the Alberta Department of Agriculture. Love [1,2] has published data on the income variability of the grain and cow-calf enterprise which is a guide to the uncertainties involved. Data has been extracted from these reports and from statistics published by the Alberta Department of Agriculture [3] to produce graphs of the price performance of certain farm enterprises for the years 1956 to 1966. The graphs also indicate the price used in the preparation of this report. It is obvious that the average prices experienced over the past few years are lower than the prices used in the studies. This is because:

1. The enterprise analysis reports have only been done in recent years and the prices are higher than average in this period.
2. The analysis reports obtained data from farm operators who have better than average performance.

Many methods are available to measure uncertainty. The method used here is the average year to year change as a percent of average price from 1956 to 1966. This is relatively simple and yet accurate enough that it will show price variability. This is not the only factor as yields and costs of production also vary. The remainder of this section will discuss the variability of each enterprise based on: (1) price variability; (2) variable cost as a per cent of total; and (3) production variability. Two sets of data are provided for the enterprise to show the difference between the 1960-66 average and 1956-66 average.

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1 Love, H.C., Crop Production Risk in Alberta, Agricultural Economics Research Bulletin 5, University of Alberta, Edmonton, July 1968

2 Love, H.C., Income Variation in Beef Production, Agricultural Economics Research Bulletin 1, University of Alberta, Edmonton, January 1966

3 A Historical Series of Agricultural Statistics for Alberta, Statistics Branch Economics Division, Alberta Department of Agriculture, Edmonton.

The common crops exhibit low price variability from year to year. However, the weather has a significant influence on the yield so the variability of gross income is probably a better measure. Love[1], in his bulletin on Crop Production Risk in Alberta estimates the gross income year to year variability for Census Division 8 over the past twenty years to be 27.4 per cent of the mean income for wheat and 22.26 per cent of mean income for barley. Figure 4 shows the estimated bushel values given by Love[2] for Census Division 8 and the Wheat Board Price[3] in Edmonton of Number 4 Northern wheat, 2 Feed barley, and Extra 1 Feed oats. The price variation from year to year is substantially less than gross income variation (6-11%). Many farmers find they can withstand the variation because they have substantial equity in land. This means that the variable costs (labor excluded) in any given year will likely be paid because they represent only about 42% of the production cost. However, the farmer paying rent is more vulnerable because variable costs and 1/4 crop share rental represent about 75 per cent of the cost of production.

Calf prices were hard to find for steers and heifers. Thus several sources are shown in Figure 5 and they were the average October prices. Price variation for steers is about 12 to 17 per cent of the mean. Again production is somewhat variable and the variation in average year to year gross income per cow is somewhat more. The rancher is in much the same position as the crop producer as far as being able to withstand adverse prices. If there were no rent to pay, operating expenses would represent the majority of his required cash flow and this is only 35 per cent of total production costs. However, land rental plus operating costs excluding labor represent about 70 per cent of the total costs.

Figure 6 is a summary of the price of slaughter cattle to indicate some price variation for slaughter cattle. Over the period considered, the prices for slaughter cattle have not varied greatly from year to year. However,

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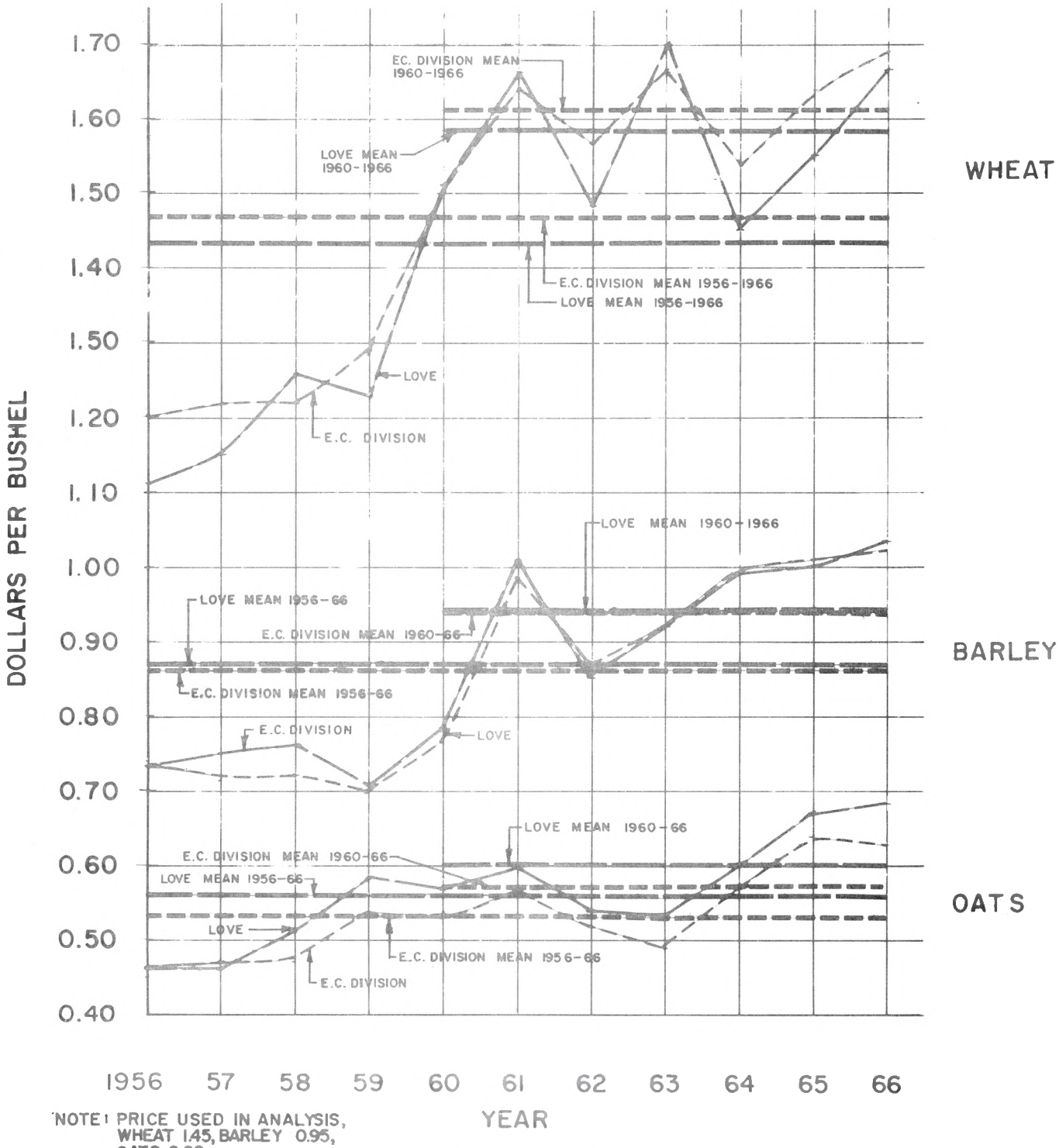
1 Love, H.C. Crop Production Risk in Alberta, Agricultural Economics, Research Bulletin 5, University of Alberta, Edmonton, July 1968.

2 Ibid.

3 A Historical Series of Agricultural Statistics for Alberta, Statistics Branch, Economics Division, Alberta Department of Agriculture, Edmonton.



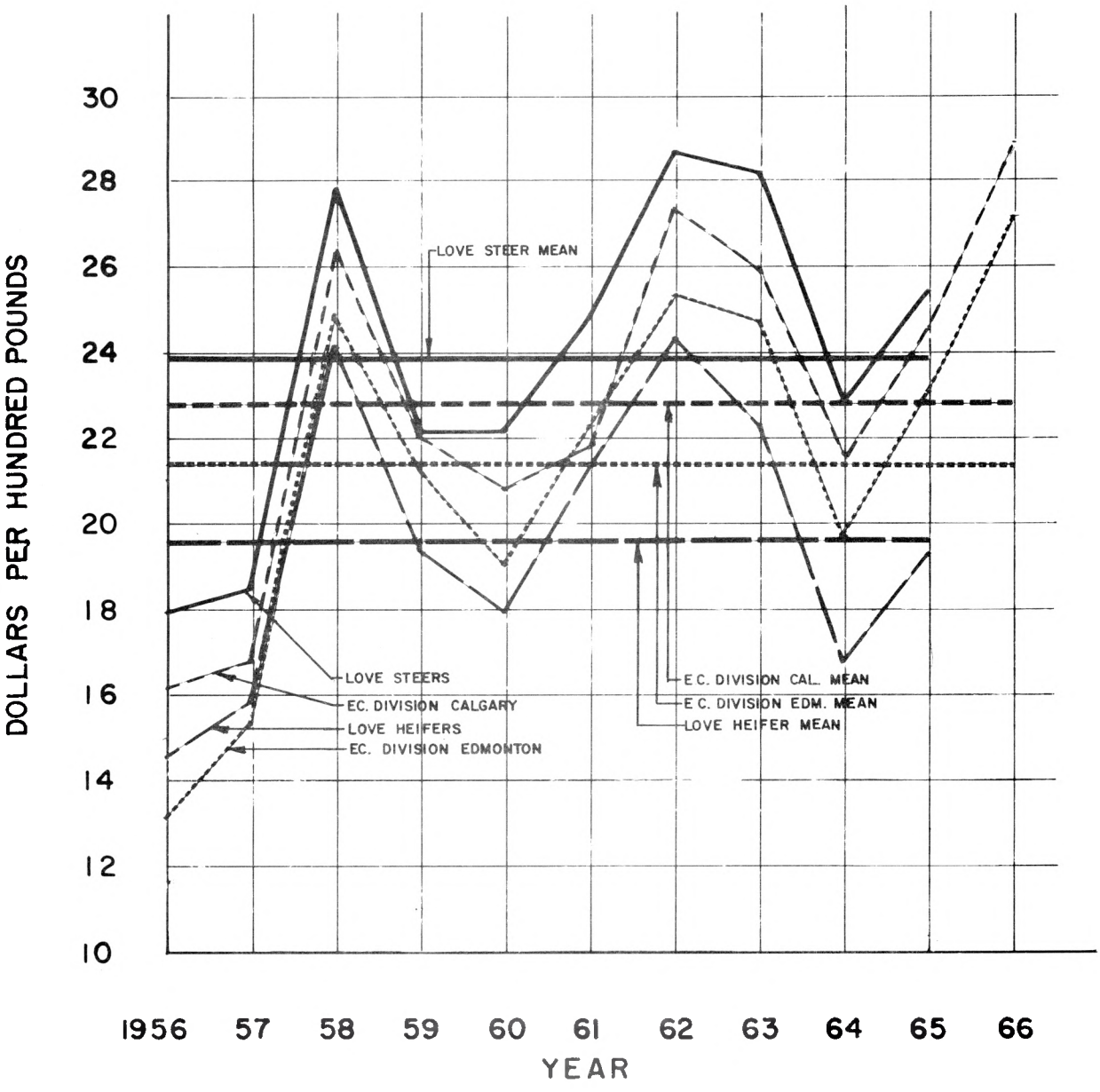
NOTE: PRICE USED IN ANALYSIS, WHEAT 1.45, BARLEY 0.95, OATS 0.60.

FIGURE 4

10 YEAR PRICE HISTORY FOR FARM GRAINS

SOURCE: LOVE, H.C. CROP PRODUCTION RISK IN ALBERTA AGRICULTURAL ECONOMICS, RESEARCH BULLETIN 5, UNIVERSITY OF ALBERTA, EDMONTON, JULY 1968.

A HISTORICAL SERIES OF AGRICULTURAL STATISTICS FOR ALBERTA, STATISTICS BRANCH, ECONOMICS DIVISION, ALBERTA DEPARTMENT OF AGRICULTURE, EDMONTON.



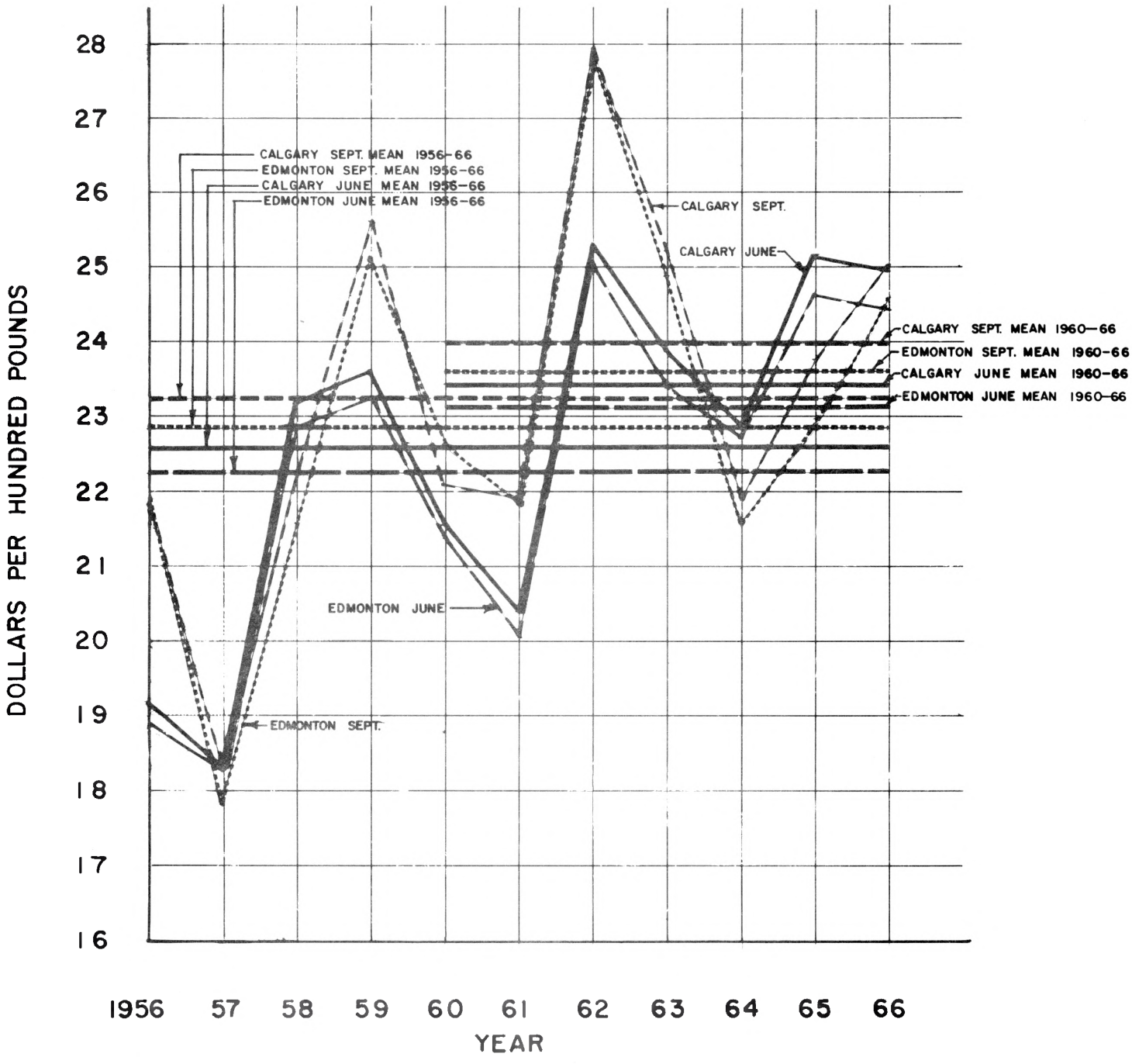
NOTE: PRICE USED IN ANALYSIS,
STEERS 25.00,
HEIFERS 20.00.

FIGURE 5

10 YEAR PRICE HISTORY FOR CALVES AT SELECTED LOCATIONS IN ALBERTA

SOURCE: LOVE, H.C. CROP PRODUCTION RISK IN ALBERTA, AGRICULTURAL ECONOMICS, RESEARCH BULLETIN 5, UNIVERSITY OF ALBERTA, EDMONTON, JULY 1968.

A HISTORICAL SERIES OF AGRICULTURAL STATISTICS FOR ALBERTA, STATISTICS BRANCH, ECONOMICS DIVISION, ALBERTA DEPARTMENT OF AGRICULTURE, EDMONTON.



NOTE: PRICE USED IN ANALYSIS,
24.50 FOR STEERS,
23.00 FOR HEIFERS.

FIGURE 6

10 YEAR PRICE HISTORY OF CHOICE BUTCHER STEERS IN JUNE AND SEPTEMBER ON EDMONTON AND CALGARY MARKETS

SOURCE: A HISTORICAL SERIES OF AGRICULTURAL STATISTICS FOR ALBERTA, STATISTICS BRANCH, ECONOMICS DIVISION, ALBERTA DEPARTMENT OF AGRICULTURE, EDMONTON.

this is often considered a very uncertain enterprise because:

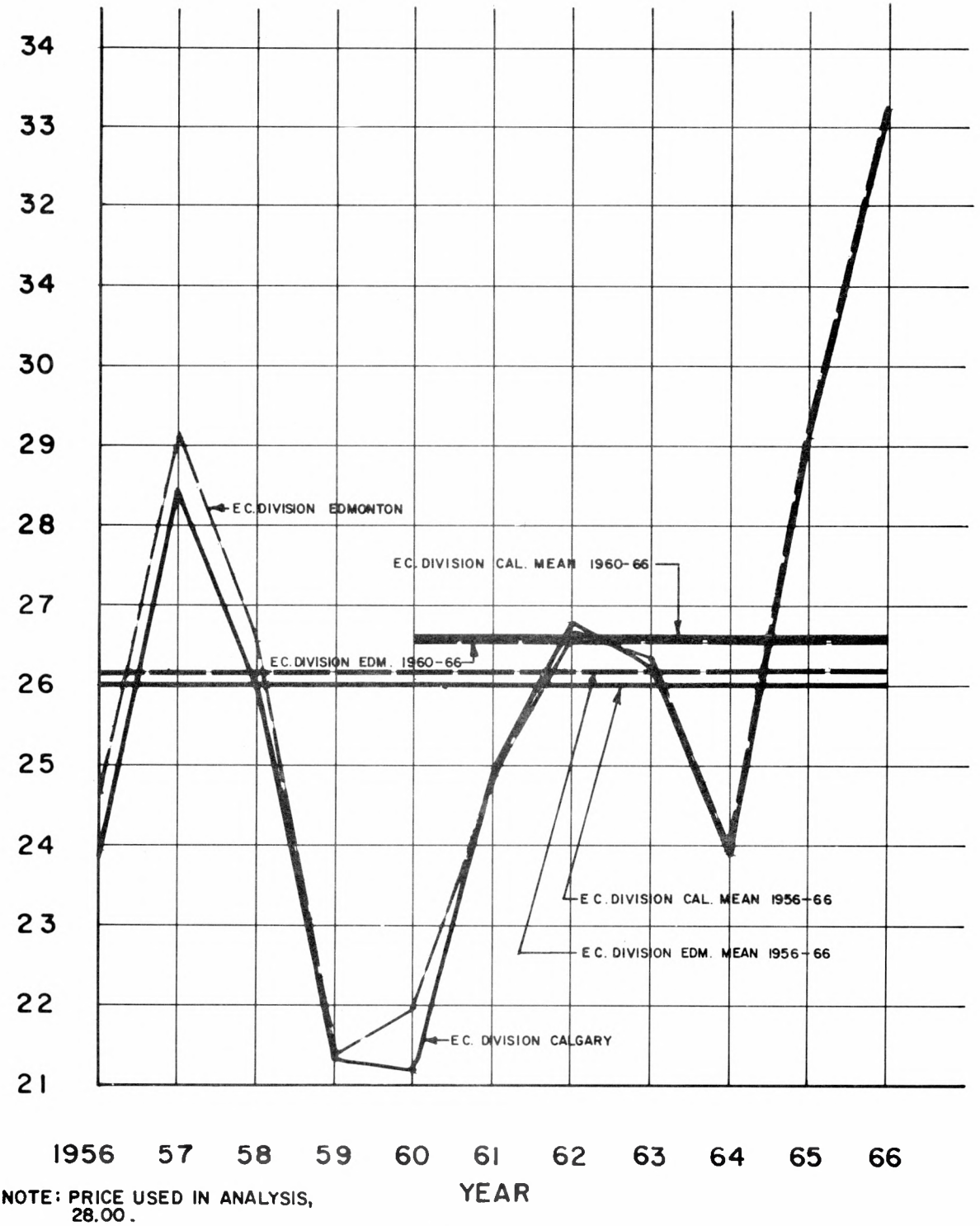
1. Feeders are purchased on a market at varying prices and sold on a later market at varying prices. Thus he must buy feeder cattle that may be worth less or more per pound than what he paid.

2. Variable costs are 85 per cent of the total feeding cost when labor is not included in costs.

3. About 55 per cent of gross returns represent money spent to obtain the livestock.

Thus even though price variation is not substantial, it can make a large difference in the final analysis.

Figure 7 shows the price performance of Grade A hogs. The average price is lower than that used in the analysis because of the influence of recent years on the data in the farm analysis reports. This enterprise is probably comparable to cow-calf as far as income variability is concerned. However variable costs are about 83 per cent of total costs (excluding labor). Thus the hog producer may be more vulnerable than the cow-calf operator. Production variability in this enterprise is largely dependent on the operator.



NOTE: PRICE USED IN ANALYSIS, 28.00.

FIGURE 7

10 YEAR PRICE HISTORY OF GRADE "A" HOGS IN ALBERTA

SOURCE: A HISTORICAL SERIES OF AGRICULTURAL STATISTICS FOR ALBERTA, STATISTICS BRANCH, ECONOMICS DIVISION, ALBERTA DEPARTMENT OF AGRICULTURE, EDMONTON.

OTHER POSSIBLE AGRICULTURAL BASED ENTERPRISES

Forestry Enterprise

The potential exists for the development of an ornamental tree and shrub operation along the banks of the Battle River in the Montana and Samson Reserves. An economic analysis of such an enterprise is contained in the appropriate Band reports. No economic use of existing tree stands on the various Reserves is visualized.

Market-Crop Enterprise

No economic analysis was made for a market-crop enterprise since soils analysis in those areas suitable for irrigation indicated a saline soil which is not amenable to the amount of irrigation required.

Bee-Keeping Enterprise

The Reserves were analyzed under current conditions to determine the viability of a bee-keeping enterprise. It was found that existing land use patterns were not amenable to a bee-keeping operation, due to the small amount of such pollen producing crops as alfalfa to be found on the Reserves. Depending upon the manner in which agricultural development of the Hobbema Reserves takes place, bee-keeping may become a viable development opportunity and should be reviewed at a later date.

MINERAL RESOURCES

The only major mineral resource on the Hobbema Reserves is the oil and gas reserves. The individual Band Reports outline the resources of the respective Reserves, and the following comments refer only to the resource potential of the Pigeon Lake Reserve.

Proven Oil and Natural Gas Reserves

The principal oil and gas reserves are situated in the Bonnie Glen D-3 field, which extends into the Pigeon Lake Reserve. Minor reserves of oil and gas also occur in the D-2 and Cardium formations on the Reserve.

The Bonnie Glen field was discovered in 1949 and had original proven oil reserves of 423 million barrels of oil plus a large gas cap. This field has approximately 170 wells completed in the D-3, of which 45 are situated on Indian lands. Reserves in which the Pigeon Lake Reserve holds interests have been assigned on a per well basis. This results in an average of 1,809,000 barrels remaining per well or a total of 81,423,000 barrels in the D-3 formation under Indian lands.

All other formations have less than 100,000 barrels remaining reserves and are close to their economic limits.

The gas reserves in the Bonnie Glen D-3 pool have not been calculated because they are not expected to be produced until after the oil zone is depleted, which is approximately 40 years from now.

Royalty Income

The vast majority of all royalty income is derived from oil production in the Bonnie Glen Field. The Indian lands are leased to two different companies, Texaco Exploration and Pan American Petroleum Corp. The Department of Indian Affairs recently re-negotiated a new schedule of royalties with Texaco that results in the Pigeon Lake Reserve receiving 18.3 per cent of the gross oil sales. Pan American is still paying royalites on a flat rate of 12.5 per cent, however, their agreement expires in 1971 and it is expected that they will then begin paying royalties at the same rate as Texaco.

Table 25 shows the forecast for oil production, net income and present worth for the two leases over the next 20 years and total income during the life of the pool.

These forecasts are based on a wellhead crude oil price of $2.83 per barrel and allowable rates of production based on the Alberta proration system.

Royalty income from other currently producing properties are insignificant when compared with the Bonnie Glen oil income.

Other Sources of Income

Each completed well that is situated on Indian lands earns approximately $250 per year in surface rentals. This rate of surface rentals is currently under re-negotiation and is expected to be increased to the $400 per year range. The resulting annual income from surface rentals would then be in the order of $20,000 per year.

The financial value of the Bonnie Glen reserves to the Indians should not be underestimated. The six per cent present worth of this property totals $19,142,200. This figure would represent the borrowing power to finance any capital works that might be contemplated. This asset would represent gilt-edged collateral in the eyes of almost any lending institution.

Prospects for the Discovery of Oil and Natural Gas

A large part of the northern half of the Pigeon Lake Reserve is within the limits of the Bonnie Glen oil field. This is a major oil field, producing mainly from the Devonian Leduc reef but with some production also being obtained from the Devonian Nisku and the Upper Cretaceous Cardium.

Two gas wells in the southern part of the field have been completed in the Leduc reef.

There appears to be a good possibility that additional production can be obtained from the Cardium and other Cretaceous sands.

TABLE 25

FORECAST OF OIL PRODUCTION, REVENUE AND PRESENT WORTH
(AS OF MARCH 1, 1969)

PIGEON LAKE INDIAN RESERVE
TOTAL ROYALTY INCOME
BONNIE GLEN FIELD

Year	Gross Production bbl/yr.	Net Production bbl./yr.	Net Revenue $	Cumulative Revenue $
1969	2,277,600	390,900	1,106,300	1,106,300
1970	2,742,900	470,800	1,332,400	2,438,700
1971	2,773,300	476,000	1,347,100	3,785,800
1972	2,801,200	513,500	1,453,100	5,238,900
1973	2,759,500	505,900	1,431,500	6,670,400
1974	2,718,000	498,200	1,410,000	8,080,400
1975	2,677,100	490,700	1,388,700	9,469,000
1976	2,636,800	483,400	1,367,900	10,836,900
1977	2,660,500	487,600	1,380,100	12,217,000
1978	2,651,100	486,000	1,375,200	13,592,200
1979	2,640,600	484,000	1,369,700	14,961,900
1980	2,629,300	482,000	1,364,000	16,325,900
1981	2,617,200	479,700	1,357,600	17,683,500
1982	2,604,400	477,400	1,351,000	19,034,500
1983	2,590,800	474,900	1,344,000	20,378,500
1984	2,576,500	472,300	1,336,500	21,715,100
1985	2,561,500	469,500	1,328,700	23,043,800
1986	2,545,700	466,600	1,320,600	24,364,400
1987	2,529,400	463,600	1,312,100	25,676,500
1988	2,512,300	460,500	1,303,200	26,979,700
SBT	52,505,900	9,533,400	26,979,700	
REM	28,917,100	5,300,500	15,000,200	
TOT	81,423,000	14,834,000	41,979,900	

Present Worth at 6.00 per cent = $19,142,200

Present Worth at 9.00 per cent = $14,506,300

Near-Surface and Surficial Deposits

With the exception of possible deposits of fine sand east of the lake frontage in old shore lines and dunes, there are no near-surface economic minerals apparent on the Pigeon Lake Reserve. This sand is probably very fine, but could be of high quality and suitable for building purposes.

RECREATIONAL DEVELOPMENT AT PIGEON LAKE

As an integral part of this study, a preliminary analysis of the recreational potential of the Pigeon Lake Reserve was carried out for Stanley Associates Engineering Ltd. by Travacon Research Limited, Calgary. The Travacon report has been reproduced in its entirety, and is included herein as Appendix B.

SECTION 3 - DEVELOPMENT RECOMMENDATIONS

PLANNING FOR IMPLEMENTATION

A development study such as this is of no value whatever unless the resulting report is completely understood by those affected and unless the appropriate action is planned and implemented.

Development of Understanding

The authors have attempted to present this report in as simple a manner as possible, but it must be recognized that several of the topics covered are fairly sophisticated and defy simple descriptions. With this in mind and realizing that the average grade level of Band members is less than grade five, it becomes obvious that a supplementary system must be found to increase the degree of understanding of this report. To accomplish this objective, it is recommended that an audio-visual presentation of the basic theme of this report be prepared, and used on a continuing basis throughout the development period. Such a presentation might use a series of slides with a synchronized taped commentary. Much of the visual material would involve the presentation of ideas and the skilled use of graphic techniques is dictated. While an audio-visual presentation adds promise of being extremely effective, it will have to be supplemented in turn by experienced personal contact.

Before the contents of this report can hold any meaning for Band members, it will be necessary for them to develop an awareness of their present situation, not only as they see it , but as their children see it. One suggestion which might bring forth the child's perspective is the promotion of an essay or picture contest, in which children of various age groups would be asked to picture the Reserve as they see it now, and as it might appear in ten years. Experience elsewhere has shown that the results of such a program can be very revealing. Another way of increasing awareness is to employ some means of comparison and contrast. To this end, it is recommended that more field trips to other Reserves be organized, particularly those Reserves which have undergone or are undergoing successful development programs.

Awareness and interest can also be generated through the use of the news media. Radio discussion groups might debate common problems, and a regular 15 minute radio program of Hobbema news and development ideas over CFCW (Camrose) would serve to inform both Band members and neighboring whites. About one half of such a program could be in the Cree language. The "Bear Hills Native Voice" appears to be a successful venture, and should be supported wholeheartedly by both Council and Band members.

Gearing up for Decision Making

The ability to make decisions with assurance and authority must stem from two basic factors; a growing desire for self-confidence and identification, and an understanding of the decision making process

Self-confidence stems from some basis of pride, both within the individual and with respect to his perceived association with his culture and environment. Individual pride may be developed to some extent through the information programs suggested above, and will be re-enforced by successful operation of initial development programs if the individual is allowed to identify with such programs.

Pride, as a result of the individual's association with his Reserve and community, may be partially developed by the simple process of improving the appearance of the Reserve. To this end, it is recommended that a 'community clean-up' program be developed which would utilize the energies and talents of young people on the Reserve. These people could be employed during the spring weekends and summer holidays in tilling gardens on the Reserve, helping older people plant and weed their gardens, general yard clean-up, landscaping of public buildings and painting of homes and outbuildings.

A pragmatic approach to decision making is sometimes taken for granted in white society, but cannot be assumed when considering the Indian culture. It is therefore recommended that the decision making process outlined below be emphasized and taught at all levels, from elementary school through adult education and Band Council.

(1) Problem identification.

(2) Collection of pertinent data.

(3) Information analysis.

(4) Decision.

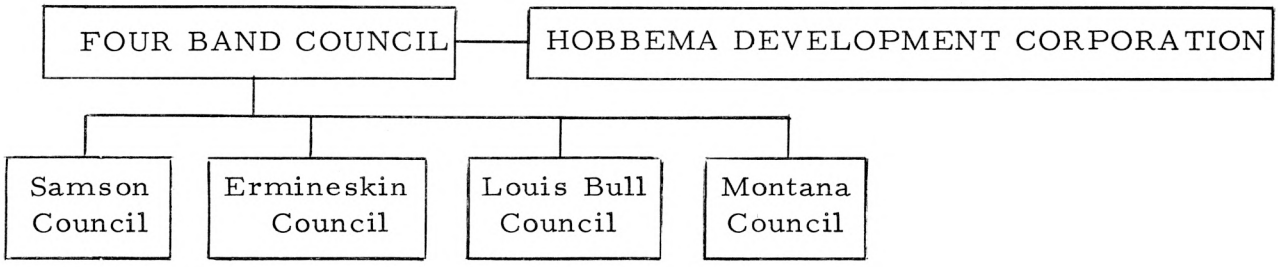
(5) Action and Feedback.

Structural for Development

Having digested the contents of this study and having decided upon those areas in which action should be initiated, Band members must next establish an organizational structure capable of bringing about the required action.

It is felt by the authors that the existing framework of Reserve government is not amenable to the type of dynamic development programs needed. Furthermore, it must be noted that the four Bands comprising the Hobbema group have much in common and should therefore consider any extension of common interest which promise economic or other savings. One obvious area in which the concept of 'common interest' applies is in connection with the development of an urban community at Hobbema, as discussed in the following section of this Report. Many other areas present themselves upon reflection. A co-operative development program will make all areas of employment and training throughout Hobbema available to all Band members. Furthermore, integrated development will increase the collective bargaining and purchasing power of the group, and will enhance the degree of savings which may be derived from bulk purchasing of equipment and supplies.

It is therefore recommended that overall planning and co-ordination of development on the Hobbema Reserves be delegated to a Development Corporation. This Corporation would be an administrative body which would act in accordance with terms of reference established by the Four Band Council, to enact and implement development policies legislated by that body. Individual Band Councils would retain their current welfare function, and play a role in formulation of development policy through their membership in the Four Band Council. The resulting structure may be shown diagramatically as follows:



Such a structure would require that the Four Band Council be properly defined and given specific responsibilities, since at present its status is strictly ad hoc.

The development corporation would require at least one experienced administrator to act as chairman, with other experienced resource personnel available as and when required.

The proposed function of the development corporation may be best explained by a brief review of the initial procedures that it would be required to carry out.

(1) Establishment of staff and budgeting requirements for initial research and administrative purposes.

(2) Basic research and analysis must then be carried out in order to determine the general nature of a development program which will coincide with the desires of the people. The Four Band Council must provide direction in this area resulting from their contact with Band members over the next period of time. Before Band members can adequately express their desires or wishes regarding the most desirable direction for development, they must obviously be fully conversant with the result of this study and aware of the nature and implications of the development alternatives presented in this report. Once again it must be pointed out that communication of the findings of this report to the Band members is absolutely essential if forthcoming development programs are to coincide with their wishes.

(3) Having decided on the general nature of an overall development program, the development corporation must then establish priorities for each component of the program and initiate detailed investigation and planning in accordance with the order of priorities established.

(4) The development corporation must establish liaison with the appropriate officials of the Indian Affairs Department and other administrative and funding agencies so that they are fully aware of the nature and extent of development proposals, and aware of the role which they will be expected to play in the detailed planning and initiation of such proposals.

(5) As detailed planning of each segment of the development program nears completion, the development corporation must establish and fill all personnel requirements, and finalize the required funding arrangements. Also at this stage, training programs must be established so that Band members will be fully able to participate to the greatest possible extent in all areas of development.

(6) It is essential that a program of communications and public relations be carried out at all stages of development so that Band members and Councils are fully aware of the nature and status of the various programs, and aware of the various possibilities for individual participation in the programs. A high degree of involvement on the part of Band members is essential to the success of any development program, and can be best encouraged by means of effective communications and public relations.

Possible Sources of Financial Aid to Development

The following is a list of departments or agencies which may be viewed as possible sources of capital for the Bands during various stages of their development. The Bands should establish initial contact with these agencies, determine for themselves the role that they might play, and then choose their course of action accordingly.

(1) Human Resources Development Authority (HURDA) - will provide loans and grants towards a total community concept. (Federal and Provincial).

(2) Indian Affairs Branch - make use of revolving fund loans and development loans (Federal).

(3) Central Mortgage & Housing Corporation (CMHC) - mortgage funds available for housing, apartments, homes for the aged. (Federal).

(4) Industrial Development Bank (IDB) - loan capital available for starting business, particularly applicable to hotel and service industries (Federal).

(5) Farm Syndicate Loans - available for farm machinery (Federal).

(6) Farm Credit Corporation (FCC) - loans of up to $100,000 per Reserve available to improvement of land for new or enlarging farms (Federal).

(7) Farm Implement Loan (FIL) - loans available to assist existing farmers to make improvements (Federal).

(8) Alberta Credit Corporation (ACC) - loans available to assist new and expanding businesses (Provincial).

(9) Chartered Banks - loans available to assist business.

(10) Treasury Branch - loans available to assist business.

(11) Alberta Farm Purchase Board (AFPB) - loans available to new or enlarging farms (Provincial).

(12) Trust & Life Insurance Companies - loans available for business purposes.

(13) Prairie Farm Rehabilitation Administration (PFRA) - financial assistance available for dug outs and community pastures (Federal).

(14) Regional Development Department - function not fully defined at this time (Federal).

(15) Alberta Housing & Urban Renewal Corporation (AHURC) - may provide assistance to a non-profit housing corporation (Provincial).

(16) Battle River Regional Planning Commission (BRRPC) - may provide long range planning assistance.

It is imperative that the organizations and agencies mentioned above be made aware of the Bands' goals and be willing to work towards these goals at such a pace that resources will become available to the Bands when necessary, and not when convenient for the agency involved. The activities of these bodies must be co-ordinated and every effort made to achieve mutual understanding of each others roles and capabilities. It is further essential

that the Federal and Provincial Governments make immediate decisions as to their joint responsibilities towards the Indian people

Apart from financial aid, many of the above agencies can offer resource personnel to the Bands on a continuing or intermittent basis. It is most important that such personnel have empathy with Band members be creative, be able to work in existing systems, be able to adapt as changes occur, be technically competent, and have previous development experience. Resource personnel should be selected accordingly.

Development in Time

Before any projects are started, a total development plan should be arrived at by Band members. It will probably take a minimum of six months before Band members are aware of what is involved in such a process, and are in a position to start working towards a long term development plan. It is important that such a plan be developed by the Band members and directed towards their own conception of desirable long term goals.

The development plan should be drawn up as a five year program, to be reviewed and updated annually. The program should be made as flexible as possible, and it should be emphasized that changes can and probably will bemade to the program, as Band members become more confident and competent in the management of their Reserve.

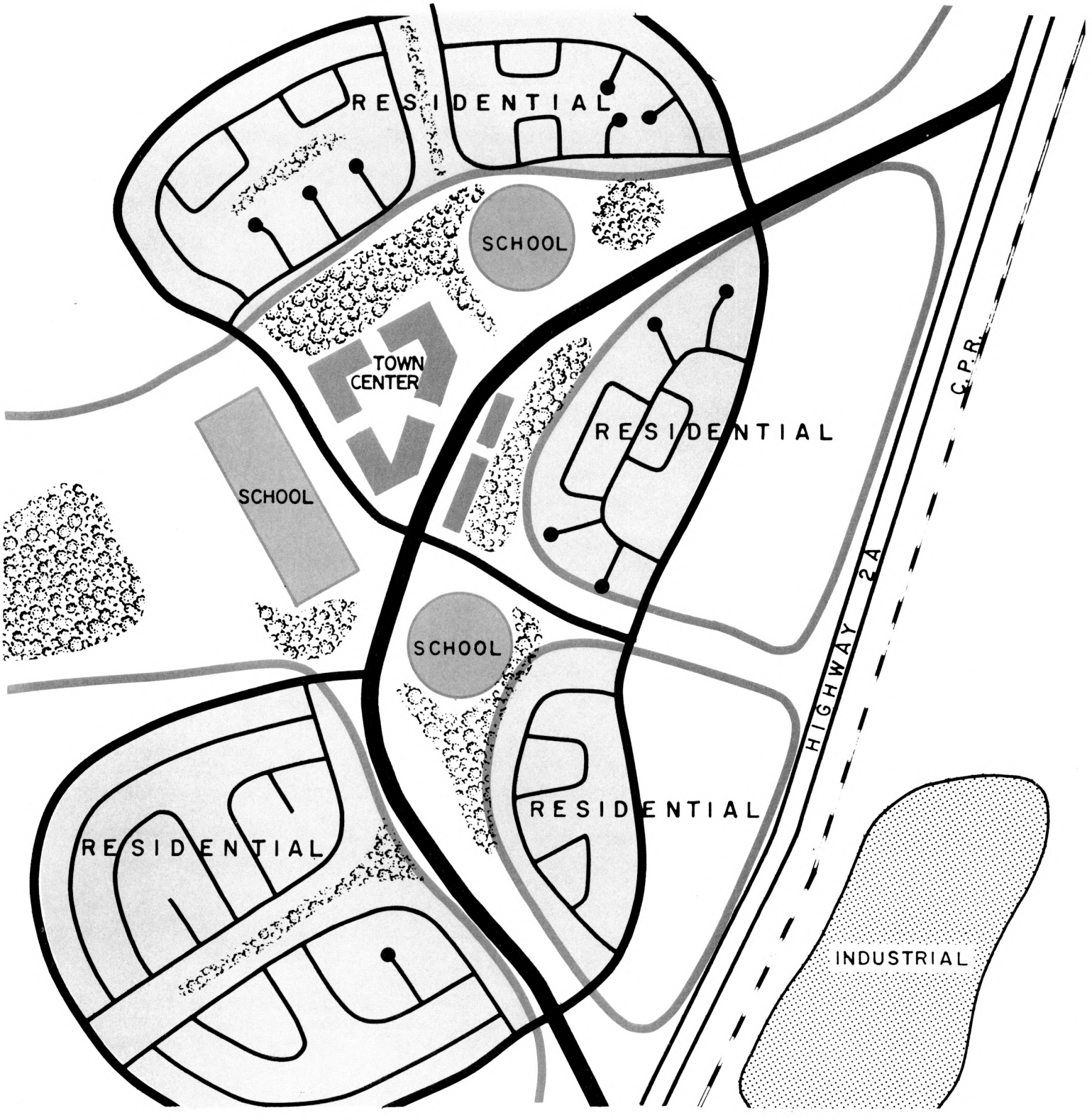
TOWNSITE DEVELOPMENT AT HOBBEMA

The aggregate population of the four Bands comprising the Hobbema group of Reserves is currently in the order of 3,400, and can be expected to increase to approximately 7,200 within the next 15 years. As systems of communications improve and as the level of educational achievement increases, a greater percentage of members may be expected to leave the Reserves. Indian Reserves were originally intended to provide for the needs of the various bands for "as long as the sun shines and the rivers flow" but the present rate of increase of Band populations makes it obvious that this will not be the case and that the Indian people must more and more look outside of the Reserves for employment opportunities. Such opportunities are invariably found in the larger urban areas.

Problems associated with urbanization and cultural adjustment are discussed throughout this report. It is felt that these problems can be substantially reduced by simply reducing the degree of adjustment necessary, and this in turn may be accomplished by advancing the Reserve environment towards that of an urban setting. Thus it is recommended that the four Bands give serious consideration to the establishment of a central community at Hobbema which will provide for the needs of all Band members and create an urban environment in familiar surroundings which will serve as a training ground for urban living.

It is understood that the Bands wish to retain their separate identities. This identity can be built into a community designed so that each Band occupies a distinct segment of the community. Figure 3 illustrates one way in which the various objectives of such a community may be reflected in a physical form.

Development of a townsite at Hobbema may be further justified through consideration of several more progmatic factors, many of which relate to economies of scale. Each of the Bands has, at one time or another, discussed the manner in which a village might be developed to meet its own individual requirements. It has been estimated that to provide basic municipal services to four separate villages large enough to house existing Band popula-



Hobbema : An Idea for a New Town

FIGURE 3

tions would cost some $2,300,000, whereas provision of the same services for a consolidated townsite is estimated at $1,900,000, a potential economy of $400,000.

Other factors related to the scale of development include consideration of not only economies of scale but also the basic population necessary to support certain institutions and activities. No one Band can justify the establishment of a department store or the provision of a comprehensive recreation complex. All four Bands acting together can provide both the capital resources and the patronage to justify such services. Thus it is essential that townsite development be considered on the basis of a joint, Four Band, undertaking.

The cash available to Band members each year is in excess of $1,400,000. At the present time much of this money is spent for foot, clothing and other services at Wetaskiwin or Ponoka for the simple reason that the basic services required are not available locally. Band members gain no secondary benefits from these expenditures. It is suggested that the development of a consolidated townsite at Hobbema, containing a complete range of services operated by Band members, would enable retention of these funds within the Reserve economy and provide much needed employment and income to many Band members.

In addition to the primary considerations discussed above, it may be noted that the concept of townsite development is complementary to each of the other facets of development suggested in this Report.

Agricultural development, for example, can not be undertaken efficiently if 5 or ten acres out of each quarter section is to be taken out of productive use and used for homesites, outbuildings and related uses.

Housing can not be efficiently supplied and utilized when located almost indiscriminately throughout the Reserves. This fact is born out by the extraordinarily high vacancy level noted on the Reserves at a time when occupied homes are seriously overcrowded. A comprehensive housing program is essential, and must consider locational requirements as well as space require-

ments. Preliminary investigation indicates that the locational requirements of a majority of Band members can be met through the development of a central community.

The current rate of population growth, and the large segment of the population which will be entering into the labor force within the next decade both point to the absolute necessity of the creation of more employment opportunities on the Reserves. Such opportunities will undoubtedly be associated with industrial or commercial developments which demand an accessible and reliable work force. Elimination of current transportation problems associated with remote residence locations will do much to avoid early difficulties in this respect.

The actual development and construction of the townsite can be undertaken by Band members with suitable guidance and supervision, and could serve as a training ground for those members who may be interested in entering the contracting business or wish to learn new skills.

In summary, the development of a consolidated, Four Band community at Hobbema would appear to be an essential ingredient of any long range development plan for the Hobbema Reserves.

INDUSTRIAL AND COMMERCIAL DEVELOPMENT

In considering the possible alternatives for industrial and commercial development, two broad classifications are used:

(1) Service type businesses - those that will provide a service required by Reserve members, such as a grocery store, clothing store, service station and bulk oil agency, barber shop and hotel;

(2) Commercial type businesses - those that will provide a saleable product which may or may not be used on the Reserves but which presumably employs a number of Reserve people and which presumably operates at a profit.

The remarks that follow are based on the following assumptions:

(1) All commercial development will be part of an overall program approved by the Hobbema Development Corporation or a similar body to ensure that it fills a need on the Reserve and provides a maximum amount of employment for native people.

(2) That the Band Council or Development Corporation in setting up the program would have the authority to in effect grant a licence to one or more of their members to operate specific types of businesses, i.e. barber shop or service station.

(3) That the major service type businesses on the Reserves such as stores selling groceries, clothing etc. would be owned and operated by the Band members or their Development Corporation.

(4) Service and commercial enterprises will develop as part of a centralized community at Hobbema.

Service Businesses

Based on the assumptions mentioned above, service businesses that should be considered are as follows:

(1) Department store - including groceries, clothing, drugs, hardware

(2) Laundromat

(3) Barber shop and beauty parlor

(4) Service station and bulk oil agency

(5) Machine and welding shop

(6) Theater

(7) Hotel with beverage room and restaurant

Before considering possible service businesses in detail it is necessary to determine if there is sufficient purchasing power on the Reserves to make these operations economically feasible. The following table reflects the cash available to Reserve members from various sources.

TABLE 26 - PURCHASING POWER OF HOBBEMA RESERVES BASED ON FIGURES COVERING THE PERIOD FROM APRIL 1, 1967 to MARCH 31, 1968

Item	
Transfer Payments (Baby bonus, old age pension)	250,365
Oil Royalty Payments	635,324
Other Cash Payments by Band Councils to members	532,346
Payment by Band Council for Housing Road Maintenance, Bus service, etc.	268,879
TOTAL	1,668,914
Cash available to Reserve members*	1,418,035

* This does not include income from war pension, employment insurance and off Reserve employment. These figures are not available.

On the basis of these figures, and assuming 60% of the cash available to Reserve members is spent on food and clothing, the department store could anticipate gross sales of $850,000 (if all purchases were made on the Reserve). This volume of sales is more than ample to justify such an operation. Other types of businesses would also appear quite feasible based on the potential purchasing power. The only critical factor which is difficult to assess at this time is the amount of Band members' funds which would continue to be spent off the Reserve. In the final analysis it is felt that this factor depends largely upon how complete, well-run and desirable their own community centre becomes, and the degree of pride which members take in it.

In considering these businesses it would seem that if they were to be part of a planned community development that a shopping centre type of building could house the department store, 1 laundromat, barber shop and possibly the hotel, beverage room and restaurant. The suggested building size for these operations and the approximate costs of erecting such a building would be as follows:

Type of Business	Building Space Required	Approximate Cost/sq. ft.	Total Cost
Department Store	10,000 sq. ft.	$12.00/sq. ft.	$120,000
Laundromat	1,200 sq. ft.	$10.00/sq. ft.	$ 12,000
Barber Shop & Beauty Parlor	200 sq. ft.	$10.00/sq. ft.	$ 2,000
Hotel	3,000 sq. ft.	$14.00/sq. ft.	$ 42,000
Beverage Room	3,000 sq. ft.	$12.00/sq. ft.	$ 36,000
Restaurant	800 sq. ft.	$12.00/sq. ft.	$ 9,600
TOTAL	18,200 sq. ft.		$221,600

The estimated cost figures shown above could vary considerably considering upon the amount of labor that could be supplied by people on the Reserve. The department store estimate includes fixtures and lighting. The hotel estimate include furnishings. Other estimates are for building only, exclusive of equipment or furnishings that may be required.

It is suggested that the department store could include in grocery and meat section, a clothing and foot wear department, hardware and drugs. A store handling the variety of merchandise contemplated would require considerable supervision and management skill. The Development Corporation would require some assistance and guidance in management of the operation. The store operation would employ approximately 6 to 10 people. The proposed laundromat would include 10 washing machines and 5 driers. This equipment plus the cost of installation (assuming water, sewer and either gas or propane was available) would amount to approximately $16,000. It is possible to obtain ticket operated machines which would be recommended to simplify the operation. With this type of machine the tickets could be sold in the department store and would thus eliminate a requirement for cash in the laundromat. It is estimated that

this operation would show a net profit of $6,000 per year and would employ only one person. The barber shop and beauty parlor estimates are based on a two chair barber shop and a small beauty parlor. This operation could either be rented out or the Development Corporation could employ a barber to run it.

The proposed hotel would include a restaurant and 6 rooms. The operation of a beverage room would of course be dependent upon obtaining the necessary licence from the Alberta Liquor Control Board. The possibility of obtaining a licence to operate a beverage room on an Indian Reserve has been discussed with the Chairman of the Board. It was indicated that if the Development Corporation could demonstrate that they were capable of operating a beverage room in line with the Board's requirements, consideration would be given to the granting of a licence.

The operation of the hotel, restaurant and beverage room would require considerable management ability. Here again the Development Corporation may feel they need some assistance in operating this business. These operations could employ from 6 to 8 Band members.

In considering the feasibility of operating a service station and bulk oil agency, it should be noted that there are approximately 210 automobiles operated on the Reserves, of which approximately 85 operate during the winter months. There are also 21 gasoline tractors and 4 diesel tractors in use on the Reserves. In view of the limited number of tractors it does not appear feasible to provide facilities for bulk oil unless all land leased out by the Band Council or by individuals included a requirement in the lease that petroleum requirements be obtained on the Reserve. This type of requirement would be most difficult to enforce.

In view of these facts it is suggested that a combination service station, machine and welding shop be established. The cost of pumps and tanks plus installation would amount to approximately $4,400; the machine shop building could be constructed at a cost of $10.00/sq.ft. and could be of a size to house a variety of machine shop and welding equipment. If so desired this building and its equipment could be used as a training centre for any Reserve personnel interested in developing skills in these areas.

On the basis of the number of automobiles operated on the Reserve it is estimated that the service station would sell approximately 50,000 gallons of gasoline per year which based on normal markup could provide a gross profit of $4,250. The sale of other products would increase this gross profit to approximately $6,000.

In conclusion, it appears that these "service type" businesses could be operated under the general guidance and supervision of the Development Corporation. Since the majority of these businesses should generate a profit if managed properly it would appear feasible to have the construction of the building complex financed by some agency such as the Alberta Commercial Corporation, or a branch of A.R.D.A. on a long term basis with provision for repayment by the Development Corporation over a period of years.

Commercial Businesses

It is desirable that the establishment of commercial or industrial activities be included in the considerations of general Reserve development, and more particularly with respect to the development of a consolidated townsite for the four Bands at Hobbema.

In considering possible alternative enterprises that could be developed on the Reserves, it is felt that several factors are of prime importance. In the first place enterprises should be judged more on the basis of providing employment possibilities than from a profit standpoint, although both are essential considerations. Secondly it is essential that any enterprise undertaken be chosen by Band members because of their interest in it. It is a recognized fact that every business enterprise in existence today is the result of some individual or group of individuals conceiving an idea about the need for a particular product or service and then having the drive and persistence to convert the idea into a going operation. This same interest and desire must be present with Band members if this program is to be successful. A third factor to be considered is the potential that various enterprises may have for involvement and participation by Reserve members at the management level. This implies that earlier stages of the development program should include industrial or commercial activities that require a level of managerial skill and

business acumen which will allow such participation. The fourth factor to be considered is that any program for development of industrial-commercial activities should be closely coordinated with vocational training programs aimed at developing skills in which Reserve members have indicated an interest.

It should be pointed out that in considering this area of the report, a number of companies were contacted who are involved in activities which it was felt might provide employment to Reserve personnel. The possibilities of these companies establishing enterprises either on or adjacent to the Reserves was explored with the companies. In discussions in this regard the reaction of a large garment manufacturer was typical. This company made a study of the feasibility of establishing a satellite plant either on or near the Reserve, but after reviewing the facts came to the conclusion that the Reserve did not provide a sufficiently large labor pool to justify the investment in a plant. It was their conclusion that the only way such a venture would be feasible would be to establish the plant off the Reserve with a dormitory and vocational training facilities for Indian employees, while remaining in a position to employ non-Indian staff as required. On the basis of the foregoing example, it would seem that Band members will have to prove their potential as a labor pool and as a managerial unit by means of their own internal development programs before any large scale private development assistance can be expected.

In order to illustrate the different phases of a program that Reserve members would have to develop to undertake any manufacturing activity, an example is presented below involving the manufacturing of school desks, a program which appears feasible at this time. These desks consist of a trapazoidal shaped top made of plywood and four steel pipe legs braced to the table top. The table top is finished with a scratch-resistant type paint. These desks are made in three sizes to accommodate different school grades. The trapazoidal shaped top enables the desk to be lined up in rows or placed in a semi-circle. The current retail price in Edmonton for these desks is $43.00 and it is estimated that they can be built by Reserve members for approximately $26.00.

Using the manufacturing of such desks as an example it is suggested that the steps that the Development Corporation would have to consider are as follows:

(1) Conduct a market survey to establish the potential demand for school desks. This would involve collecting the following information.

(a) who is presently manufacturing such desks and what is their retail price structure;

(b) who are the potential customers and what are their requirements annually and for the next five years;

(c) are there any other customers that could be developed or any new uses for the desk;

(2) Assuming that the market survey indicates that demand exists for the product, it would be necessary to establish the cost of production to ensure that the operation would be profitable. Based on the annual demand established in the market survey this would involve:

(a) determining the possible suppliers of materials and their prices so that they can be compared;

(b) estimating what facilities are required in the way of a building in which to build the product;

(c) estimating what equipment will be required, and its cost;

(d) estimating the number of employees that would be required;

(e) establishing the estimated cost of building a unit of the product taking into consideration material costs, plant and equipment overhead, labor and margin for profit including a return on the proposed investment.

(3) At this stage, knowing the market demand, competitive price structure and estimated cost of production, a decision can be made by the Development Corporation as to whether the project appears feasible.

(4) Assuming the project appears feasible, consideration must be given to the detailed plans for plant and equipment and the alternative methods of financing construction.

(5) Simultaneous consideration should be given to obtaining the necessary work force since it may be desirable or necessary to consider providing a training program for prospective employees.

(6) In the eraly stages of development, it is desirable to appoint individuals with specific areas of responsibility such as production, marketing, financial planning and administration. These individuals should be coordinated and supervised by a senior official of the Development Corporation.

(7) The marketing manager should attempt to obtain firm commitments or orders for a number of units of production at the earliest date. If this can be done before production commences it will allow the production manager to schedule material purchases and production plans. The marketing manager would be responsible for developing any advertising or sales promotion required to expand the sale of the product.

(8) The financial manager or controller would be responsible to ensure that costs of the operation were kept in line and that original cost estimates were not exceeded.

(9) The production manager would be responsible for producing the necessary number of units to meet sales requirements at the lowest possible cost.

(10) Production and marketing managers should jointly endeavor to find ways of improving the product and developing new uses for it.

The foregoing may appear to be a somewhat formidable list of activities. In practice it would be unrealistic to expect the Development Corporation to undertake these activities on their own initially, but it is suggested that if guidance were available to them and if they were able to take these steps in relation to a very unsophisticated product, they would soon develop some experience and expertise in approaching this type of problem.

With the above serving as an example of the type of analytical procedure basic to the undertaking of any industrial or commercial enterprise, a number of other possible activities may be considered. A number of Band members have a considerable amount of carpentry and general construction

experience. These members might consider the possibility of forming a construction company to undertake construction of homes on the Reserve. Such an activity may develop in future years into the construction of community facilities on the Reserves and into construction of various projects off the Reserve.

Another area of construction activity which might be considered lies in the field of installation of municipal utilities. If a townsite is developed at Hobbema, there will be a requirement for a considerable amount of sewer and watermains, storm sewers, water treatment facilities, and sewage treatment facilities. The authors' experience indicates that Indian people can become extremely proficient in this line of activity, and it is suggested that the construction of facilities for a Hobbema townsite would provide an excellent training ground for an Indian construction company, assuming a fairly high degree of outside assistance in the early stages. Having this type of experience, such a company could probably compete effectively for similar work off the Reserve, assuming assistance from the Development Corporation for initial bonding requirements.

There are doubtless many other areas of activity which could be considered in terms of industrial or commercial development on the Hobbema Reserves. As previously stated, however, it is essential that initial development projects reflect the current interests of the Band members. The major recommendation in this area must then be that Band members should review the type of analytical approach necessary for evaluation of development projects, and review their own interests and capabilities, and then review the manner in which these interests and capabilities can be profitably exploited through some form of development activity. Band members should not hesitate to seek assistance during this evaluation process.

AGRICULTURAL DEVELOPMENT AND LAND TENURE

The basic alternatives available to Band members in terms of agricultural development are as follows:

(1) Lease all land at best possible lease rate so as to maximize Band income.

(2) Establish a number of economic family farm units.

(3) Establish Band farm operations based on cattle feeding enterprises with supporting grain and forage opeartions.

On the basis of consideration of possible level of return, potential for employment and training, and assessment of member interest, it is suggested that the adoption of alternative 3 above would be the most desirable.

It is important to note that each of the above alternatives requires a somewhat different approach to land tenure than that which is presently found on the Reserves. Present tenure policies are such that optimum use of the agricultural resources is not possible. As the population of the Bands increases tenure problems have become magnified as greater demands are placed upon the Reserves resources. Some of the present and anticipated tenure problems may be outlined as follows:

(1) Band members are unsure of their status with respect to property on which they live;

(2) Lack of specific policy leads to misunderstanding and suspicion of favoritism and allocation procedures;

(3) Unless a townsite is developed, problems will arise in the future regarding new house locations since future densities will be relatively high;

(4) It appears unlikely under the present system that a member could obtain control of enough land at terms which would allow him to operate an economical farm enterprise;

(5) The present system would not allow operation of a Band feedlot operation on the basis recommended in this report.

It is essential that the Bands give consideration to alternate systems of land tenure which would be more amenable to development planning.

The alternatives available may be viewed as a continuum ranging from one extreme of total private ownership to another of total communal or Band ownership. Some possible alternatives are discussed below:

(1) Divide all Reserve lands among present members and provide certificates of possession for each parcel, so that members interested in farming could purchase land from other members and accumulate an economic farm unit. This alternative would give each member an equal share of the Reserve land, but provides little incentive toward optimum land use and makes coordinated planning almost impossible;

(2) Place all Reserve land in Band ownership. This alternative would lend itself to optimum development control but would not allow for individual entrepreneurial initiative;

(3) Use a combination of 1 and 2 above on the basis that the Band would control all land but would make allowances for members who prove their farming ability over a pre-determined period of time to receive certificates of possession to sufficient land to allow economic farming operation. This alternative would provide adequate development planning and control while encouraging individual initiative.

The above alternatives or other similar tenure systems must be reviewed by the Band and a course of action selected which will complement the goals of overall development planning on the Reserves.

failed at least one year. More than 50% fail their Grade 9 departmental examinations. An analysis of the educational facilities available to the Indian people, and a review of the shortcomings of the present system has lead to the formulation of the following hypothesis which might form the basis of further research and program development.

> All Indian children should receive pre-school and elementary programs on the Reserve under non-integrated conditions whereby programs and curriculum can be adjusted as required so as to allow cultural as well as academic development of the child to the extent that, upon graduating from Grade 6, the Indian student will be academically proficient and culturally stable. Junior and senior high school will be taken either on or off the Reserve under integrated conditions, on the basis that the Indian student by this time has achieved sufficient stability with respect to his own culture to allow him to begin formal assimilation of a second and foreign culture.

Increased adult participation in the development and implementation of school programs is essential. Parents must understand basic educational goals before they can be expected to provide encouragement for children to expand their educational horizons. Adult involvement in upgrading and training courses is seen as a step towards greater understanding and participation.

The situation whereby overcrowded houses and abnormally high vacancy rates exist at the same time is indicative of a remarkably inefficient housing program. The high vacancy rates are caused largely by poor housing location, or rather by location of housing without consideration of the locational flexibility of the occupant. When people find it impracticable to live in their own home, they move in with friends or neighbors and cause a localized overcrowding situation. The overcrowding situation is intensified by the lack of employment, and results in extremely poor working conditions for students and an almost impossible environment for family living.

In general, members regard their Band Council and the Department of Indian Affairs with a considerable degree of distrust. Welfare is an acceptable way of life and most members play the "welfare game" with a great deal of skill.

Various facets of the social situation on the Reserves must be regarded as possible impediments to physical development. Poor work habits have developed over the last few years, mostly as a result of lack of employment. Better work habits must be developed over a period of time. The low economic aspirational level of Band members makes it possible for their basic requirements to be met with relative ease, and until their aspiration level increases, they will have little motivation to remain at a job. The low educational achievement level of the average Band member places him in an unenvieable position since accurate communications are essential when learning a new operation or job. Adult education and job training are essential.

The evaluation of the physical resources of the Hobbema Reserves was relatively straight forward. All of the resources known to exist on the Reserve have been exploited at one time or another, although many have not been utilized efficiently.

POTENTIAL DEVELOPMENT

Each institution or organization has its own decision making process, which normally evolves over a period of time. Prior to the advent of the Indian Act, the Indian Bands also had their traditional procedures for arriving at decisions. The paternal influence of the Indian Act as administered by the Department of Indian Affairs has obviated the requirement for the Bands to make meaningful decisions and thus the Bands' decision making machinery has atrophied through lack of use. A pragmatic approach to decision making must form the basis of any education or retraining program carried out on the Reserves.

The agricultural resource is capable of providing employment to approximately 10 per cent of the available labor force on the Reserves. Development alternatives include the formation of economic family farming units with a minimum area of 700 acres and the development of Band farms centred around a cattle feedlot operation. Existing land tenure systems must be reviewed and adjusted in accordance with the dictates of the development alternatives selected. Forestry enterprises appear feasible in selected areas along the Battle River Valley.

Development of a consolidated, Four Band townsite at Hobbema will provide long term solutions to many immediate problems, will allow the introduction of a multiplier factor into the Reserve economy, and will act as a training ground for urban living for those who will leave the Reserves in future years. The potential for industrial and commercial development on the Reserves will be enhanced by the formation of a concentrated labor force which has demonstrated its ability to perform effectively. A high degree of member participation in the physical development of a townsite will provide scope for such a demonstration. Successful industrial and commercial development on the Reserves can be undertaken, assuming a high level of Band member involvement and initiative.

The Pigeon Lake Reserve offers moderate potential for recreational development. Emphasis in this area should be placed on the development of housing sites for summer cottages.

It is recommended that the Hobbema Bands investigate the desirability of forming a Development Corporation which would provide the research and project development services that are necessary to enable implementation of policies formulated by a re-structured Four Band Council.

Greatly improved communications throughout the Reserve are essential to Band member involvement and participation in Reserve development, which is in turn an essential ingredient of successful development.

The Department of Indian Affairs should concentrate its efforts towards coordinating the many resources available to the Indian people. The Department is not in a good position to initiate social development programs because of its position in the Reserve power structure. It is essential that Department personnel develop a more empathetic relationship with the Indian people.

APPENDIX A

APPENDIX B

PRELIMINARY ANALYSIS OF RECREATIONAL POTENTIAL OF THE PIGEON LAKE RESERVE OF THE HOBBEMA INDIAN RESERVES

Prepared for

Stanley Associates Engineering Limited

by

Travacon Research Limited

1969

INTRODUCTION

Stanley Associates Engineering, in their preparation of an overall development plan for the Hobbema Indian Reserves, requested Travacon Research Limited to examine the recreational and tourist potential of the Pigeon Lake Reserve and to put forward proposals for the development of the area.

Conclusions drawn in this study are based upon visits by the staff of Travacon Research to Pigeon Lake, Wabamun and Lac Ste. Anne. Unfortunately, these areas were visited during winter so that the quality of the beaches and the general atmosphere of the areas were difficult to assess. Various government departments have been contacted in order to obtain information concerning the characteristics of the Lake.

DESCRIPTION OF THE AREA

The Pigeon Lake Reserve is located at the south-east end of Pigeon Lake. It occupies approximately 8 square miles of land and has a lakeshore frontage of 4-1/2 miles. With the exception of Ma-Me-O Beach, and two campsites, this land is in virgin state.

The summer village of Ma-Me-O Beach extends for approximately 6,600 feet along the lakeshore and for 500 feet between the shore and Highway #19. The village was surveyed out of the Reserve in 1923 and is now fully developed. There are two avenues parallel to the lake shore. Between the first avenue and the shore are 91 cottages, and between the two avenues there are 136 cottages.

Ma-Me-O Beach has approximately 130 permanent residents, but the summer population rises to over 1,200 as the cottages which have remained empty all winter are filled with vacationers. The village has two stores, two service stations, four cafes, two churches and a museum. At each end of the townsite, is a campground operated by the Reserve, and there is a government campground within the village area.

The largest urban area close to Ma-Me-O Beach is Edmonton, which is approximately one hour's driving time away (49 miles via Highway #2 and #19). Within a radius of one hour's travelling time there is a total population of 458,000, of which 405,000 is urban.

Pigeon Lake is a spring fed body of water 35-25 square miles in area and is part of the headwater of the Battle River. Its watershed is relatively small, extending an average of three miles back from the lakeshore. Surface water drains into the northwest end of the lake and flows out of the lake through Pigeon Lake Creek into the Battle River. The water surface level of Pigeon Lake has shown a gradual decline over the last 15 years, with the exception of 1965 which was a year of considerable precipitation. Between 1954 and 1969, the level of the lake has dropped approximately 5 feet, an amount equal to the decline of Sylvan Lake over the same period, but less than Wabamun (6 feet) and Gull (10 feet).

RECREATIONAL POTENTIAL OF THE PIGEON LAKE RESERVE AREA

1. Recreational Activity Rating

The primary emphasis of this study of recreational potential is on the outdoor activities which can be enjoyed in the area. The following table summarizes the possible recreational activities. The ratings refer to the overall suitability of Pigeon Lake and the Reserve Lands in comparison with the most important competitive lakes in the Edmonton area; Wabamun and Lac Ste. Anne. The basis for the rating of these activities is given in the following section.

Recreational Activity	Rating
Summer	
Water Oriented:	
Swimming	Average
Boating	Average
Fishing	Good
Sun bathing	Good
Water skiing	Good
Land Oriented:	
Camping (tent and trailer)	Average
Horseback riding	Good
Winter	
Ice fishing	Average
Snowmobiling	Average

2. Basis for Ratings

(a) Summer Activities

Water Oriented:

The dominant characteristic of the lake, which affects its suitability for water-oriented activities, is the very gradual fall of the lake bed, so that a six inch rise or fall in the level of the lake can result in the covering or uncovering of up to 20 feet of beach. This characteristic of the lake appears

to be similar to that which exists at Alberta Beach on Lac Ste. Anne, but is in considerable contrast to most of Wabamun where the lake-bed falls away rapidly. The slow fall of the lake bed means that swimmers have to wade far out into the lake in order to arrive at a suitable depth of water. The lake can therefore be rated as only average in its suitability for accomplished swimmers. However, the gradul fall of the bed makes the lake quite satisfactory as an area in which younger children can play.

Boating can at best be given an average rating, for the same reasons as noted in the previous paragraph for swimming. The main problem is that of access to the boats, and this problem can be overcome either by constructing piers out to the boats, or by dredging away some of the sand to provide an entry channel by which the boats can be brought closer to the shore. This problem also affects the suitability of the lake for waterskiing.

Sunbathing is an activity which can quite satisfactorily be carried out due to the good beach which is available at Ma-Me-O .

Pigeon Lake can be rated as average for sport fishing. The main species in the lake are Whitefish, Pike and Perch. Pike and Perch are the most popular sport fish during the non-winter months, but in recent years the catch of these fish has shown a considerable decline. This is attributed by the regional fishery biologists to the fact that cottage owners have removed much of the aquatic vegetation from the littoral zone of the lake which was the prime habitat for Pike and Perch. Also, changes in the waterbed have reduced spawning runs of Pike. Both Wabamun and Lac Ste. Anne have relatively greater quantities of these two species.

Whitefish form the bulk of the commercial fishing catch, and are in considerably greater supply at Pigeon than at either Wabamun or Lac Ste. Anne. They are relatively easy to catch, probably because of the lack of food in the lake.

Land-Oriented:

Recreational activities on land are somewhat limited because of the relative flatness of the terrain and the lack of trees and forests. The activities which can most readily be enjoyed are camping and horseback riding.

As noted in the previous chapter, there are two campgrounds operated by the Indians, and one government campgrounds within the village of Ma-Me-O. Riding stables are located north of the village and the terrain seems well suited to this activity.

(b) Winter Activities

Ice fishing is a popular activity on the lake. Approximately 15 - 20,000 lbs. of fish were caught this way in 1967, whitefish comprising most of the catch.

Many of the more popular land oriented winter sports are not suitable for the area due to the flat terrain. One recent recreation development which should be emphasized, however, is the popularity of two-person snowmobiles. Whereas a few years ago snowmobiling was a mere oddity, it has now become a booming sport. The flat land in the area could be cleared to form the area for the enjoyment of this activity.

3. Conclusion

The main recreational attraction of the Pigeon Lake Reserve is the sand beach and the various summer recreational facilities associated with the lake. The remainder of the terrain is flat and has little recreational activity potential except for horseback riding and possibly golf. Ice fishing is an activity which is presently being carried out to a limited extent in winter.

It would appear that the best approach open to the Hobbema Indians would be to increase the intensity of use of the Reserve's major assets: the lake and its beach. The manner in which this could be carried out so as to yield a positive net income to the Hobbema Indians is outlined in the next chapter.

ANALYSIS OF LONG TERM POTENTIAL OF THE AREA

1. General Development Plan

It is considered that the best approach to the development of the Pigeon Lake Reserve is through the utilization of the available land in such a way as to yield a maximum financial return to the Hobbema Indians. At present, almost the only land which is being utilized in a commercially productive manner is that land which was surrendered out of the Reserve in 1923 and which now provides the site for the summer village of Ma-Me-O Beach. It is felt that the beach facilities and recreational potential of the area are such that further summer cottage or secondary home development could take place, and in such a way that revenue to the Indians could be increased.

The location of a further summer cottage development in the area would need to be specified. One possible area is east of the village on the east side of Highway #19, or alternatively on the lake front north or south of the village. The best location would depend in part upon engineering considerations. In any case, the presently built up area is small enough that a new summer cottage development would not need to be very far from the good beach facilities that are available.

2. Background

In the early years of this century the ownership of a second home was a luxury that could be afforded by only a small minority of the wealthy people of Canada. In the past twenty or so years, however, a tremendous increase in demand for vacation homes has occurred.

The recent increase in demand for vacation homes is the result of several trends in the North American pattern of existence. The first of these is that there is a clear desire by many persons to have "a second life" which is away from their normal work-a-day existence. The pressures of modern urban living are such that complete relaxation can often only take place in an environment which is physically removed from the work-day environment and which is relatively calm and peaceful. Secondly, many persons, as a reaction against the super-sophistication of urban life, desire periodic repose in a more simple atmosphere, a "return to nature", as it were. Thirdly, the lack of recreational opportunities in many cities prompts people, and

particularly those with children, to search for an environment where such facilities are readily available and can be enjoyed within a few yards of one's home. The vacation home, in an adequately serviced and scenic area, can fulfil the needs of people for relaxation, simplicity and recreation.

Demand is also related to the increasing amount of leisure time people now have - it is now almost universal for people to get two days off every week, to get two to three week paid vacations, and an increasing number of statutory holidays. Families now have the time to enjoy a vacation home, particularly if it is a year-round home close to their primary residence. For retired couples, this type of situation is particularly appealing.

The above noted trends have been coupled with rapidly rising urban family incomes which now make it possible for an ever-increasing percentage of Canadian families to own a vacation home. The result has been that the demand for vacation homes has shown a steady and consistent increase.

3. Basic Secondary Home Site Requirements

There are a number of basic requirements that people look for when considering a secondary home. Firstly, the location must have good scenery; secondly, it must be accessible - as a rule of thumb, the closer the location is to the population base, other things being equal, the greater should be the demand for it; thirdly, it must have a number of recreational facilities, either in the vacation home development or else nearby. In this regard, the most sought-after recreational activities are generally related to water sports such as swimming, boating, fishing, etc. Many builders have noted that it is extremely difficult to lease vacation home sites on the basis of promises of future recreational facilities. Some recreational facilities should be completed before the lots are put up for lease in order to enhance the demand for the property. Ma-Me-O Beach is particularly fortunate in this regard in that it is a well established and well known recreational area.

4. Characteristics of a Secondary Home Development

The biggest problem facing the secondary home developer in both Canada and the United States is arranging financing for prospective home buyers.

The three principal reasons for the difficulty in securing mortgages for secondary homes are as follows:

(a) Vacation houses are a luxury; thus, if the economy takes a dip, the market for such houses would be poor and the lender would have no security in case of repossession.

(b) Some vacation houses are built as shells which owners plan to finish themselves, but until they are completed they have no mortgage value for a lender.

(c) The market is relatively new and few lenders have had a chance to study or understand it fully.

Because of the difficulty of financing, interest rates on secondary homes borrowing are higher than on conventional home borrowing, and the repayment terms are shorter. The longer terms on secondary home financing are 12 to 15 years.

The secondary homes market is considerably different from other markets in that the sale of a secondary home involves the sale of housing, recreation, leisure, scenery and "the intangible way of life". The house is only part of the package.

The best way to provide for the sale of secondary homes is to create a community development instead of simply trying to sell individual lots. People are normally gregarious and social in nature and want other people around even in a vacation home area. This is particularly true of wives with children, who dislike being isolated and unprotected during the week while their husbands are in the city at work.

Another requisite in a successful secondary homes development is controlled zoning regulations which specify the type and class of houses permitted in each area, and dates by which construction must begin.

5. Demand for Secondary Homes

The main factors determining the demand for vacation homes in a given geographical area are as follows:

(a) regional population base and growth

(b) family and income characteristics

(c) competition from other possible use of the discretionary income of persons

(d) mortgage credit and ease of financial arrangements.

Principal among these factors is the level of family income. Studies conducted in the United States and Canada have shown that almost no families with an income less than $5,000 per year own a vacation home, but that about half of all vacation homes are owned by families earning between $5,000 and $10,000. The percentage of families in any income group owning a vacation home increases with income, reaching a maximum of about 20% for all families with an annual income of $25,000 and over.

It is highly desirable that an adequate standard of housing be maintained in any vacation home development. In the Appendix, examples are given of the capital and operating costs that must be borne by a person owning a good quality vacation home. When the land costs are included, the total costs rise to between $95 and $110 per month. It is unlikely that a family with an income of less than $10,000 per year would have sufficient discretionary income to afford this amount of money for a second home. Accordingly, the potential market for vacation homes is considered to be composed only of those families earning $10,000 or more.

It is evident that for some families, Pigeon Lake would be too far from the home to be competitive with closer, even though possibly less attractive, lakes. From the point of view of the Edmonton market, however, Pigeon Lake is well placed, being less than an hour's drive away. In this regard, Pigeon is certainly competitive with Wabamun Lake, and Lac Ste. Anne. Other urban areas in the vicinity of Pigeon Lake include Wetaskiwin and Red Deer. It is considered that Red Deer, being more than an hour's drive away, and having both Sylvan and Gull Lakes in closer proximity, is not an area in which there would be significant percentage of persons who would be candidates for a secondary home at Pigeon Lake. Wetaskiwin is, however, well placed in this regard. Thus, the area of potential market is estimated to include all of Edmonton and all of census division 11.

In 1965, 8,042 persons living in Edmonton and C.D. 11 reported an income in excess of $10,000. By 1969 this number would be greater because the population of Edmonton has been growing at a rate of about 3.3 per cent per year since 1964. Moreover, the percentage of Edmonton residents reporting an income in excess of $10,000 per year is continually increasing, and, in fact, increased at the rate of 12% per year between 1961 and 1965. Assuming a continuation of these same rates of increase from 1965 to 1969, it is estimated that there are now approximately 14,800 persons in Edmonton and district earning $10,000 or more per year.

The number of families with an income of $10,000 or over can be estimated by considering that in 1965, 97% of the persons in this income bracket were 30 years of age or over, and in Alberta 81% of persons 30 years of age and over were married. Therefore, the number of married persons of age 30 or over who are earning $10,000 or more would be 14,800 x .97 x .81 or 11,600. There are, therefore, at least 11,600 families in Edmonton and area with an income of $10,000 or more. The number is conservative because it does not include the many families where husband and wife are both working for an income less than $10,000 and yet the total of the two incomes is over $10,000.

It must be recognized that not all families with this income will be interested in owning a second home. Considerably further research on the characteristics, attitudes, and vacation habits of these families would be necessary in order to develop refined estimates of the probable demand for vacation homes. Nevertheless, for a preliminary indicator of the demand, data already obtained for other areas can be used. In 1960 some eight per cent of all families in the United States with incomes over $10,000 owned a second or vacation home. The vast majority of these families would be those living in urban areas since it is primarily families which live in cities that own second homes. Since 68% of Americans live in cities of 2,500 or more, it is estimated that at least 12% of families living in cities of 2,500 or more (and earning $10,000 or more) own a second home. In Edmonton and district, 85% of the population lives in communities of 2,500 or more. It can therefore be estimated that 11,600 x .85 or 9,900 families with an income of $10,000 or more live in communities of 2,500 or more.

Recognizing the time lag in trends between the United States and Canada, it has been assumed that what was true of the United States in 1960 should be true of Canada now; and on that basis it could be expected that 12% of Edmonton and district urban families earning $10,000 or more should be secondary home owners. This means that 1,190 families would be expected to own a secondary home.

An anlysis of secondary home ownership of Calgary residents recently completed by Travacon indicates that only 200 families with incomes of $10,000 or more own a secondary home, or approximately 2% of the families earning $10,000 or more. It is considered that the percentage for Edmonton would be somewhat higher due to the greater number of lakes in the Edmonton area, but it is unlikely to be over 4%, which would indicate that somewhat less than 500 urban, $10,000 per year income families would be owning a secondary home. This suggests that at least 700 families living in the Edmonton area should, by virtue of their annual income, be secondary home owners but, in fact, are not.

The most evident reason for this unfulfilled demand is the lack of suitably developed scenic secondary home sites within a reasonable distance of Edmonton. It is considered that the Pigeon Lake Reserve area possesses the inherent ingredients such as a good beach, scenic qualities, recreation opportunities and proximity to the city to fulfil this demand. However, only through a properly planned and marketed secondary homes development can the Hobbema Indians capitalize on this opportunity.

6. The Role of the Hobbema Indians as a Secondary Homes Developer

Experience has shown that successful secondary homes developments require comprehensive planning and imaginative site development. An arrangement which has proven successful elsewhere in North America and which would appear to be well suited to the Pigeon Lake Reserve is a series of groupings of twenty to forty secondary home sites, connected by well-maintained roads and suitably supplied with utilities, services (garbage collection, grounds maintenance) and recreational facilities such as tennis courts. In other words, a number of small secondary homes communities is formed

within an overall secondary homes development plan. Each small community can be designed and planned to conform to the needs and means of the particular income group which will be living in that community.

As the developer of such a secondary homes project, the Hobbema Indians would lease secondary home sites on a long-term basis (a minimum of twenty-five years) and would undertake to provide the facilities and services noted above.

In determining the feasibility of such a project, a minimum development unit of forty secondary home sites is considered in this report. On the basis of 2.5 home sites per acre, this initial phase would require approximately 16 acres of land. As mentioned at the beginning of this chapter, this land could be either east of the highway or north or south of the village of Ma-Me-O.

7. Preliminary Estimate of Capital and Operating Costs to the Hobbema Indians

It should be noted at the outset that these cost estimates are not based on detailed engineering studies, but rather are order of magnitude estimates of the cost which could be expected in the development of the proposed initial 40 home sites development.

(a) Road Construction and Landscaping:

Each 40 home development would require an access road from the highway, plus a road system within the development. A maximum of one mile of gravel road would be required per development and the capital cost involved would be about $1,000. A figure of $4,000, or $100 per site, has been estimated for landscaping of the recreation area of the community. This would include the planting of a large number of trees in strategic locations since tree growth at present is rather sparce, particularly in the areas away from the lake shore.

(b) Electricity:

A construction contribution per site would be required for electricity distribution. This is estimated to be $125 per site. For a 40-site development the total cost would be about $5,000.

(c) Sewage:

A package sewer treatment plant or individual septic tanks would be required for sewage disposal, the ultimate method being dependent upon the requirements of local by-laws and engineering and soil tests. A maximum cost of $25,000 is estimated for sewage disposal.

(d) Recreational Facilities:

There are already considerable recreational facilities available at Ma-Me-O Beach, and it is considered that these already form the basis for varied recreational activities in the area. Additional facilities such as expanded riding stables, tennis courts and golf courses could be installed as an added attraction of the new secondary home development. It is considered, however, that in the initial stages these additional investments should be kept to a minimum in order to maximize the economic return from the development. Tennis courts, however, could add a substantial attraction to the area at a moderate cost. Accordingly, it is suggested that these could be constructed at an estimated cost of $10,000 and would serve the whole 40 unit development.

It has been suggested elsewhere that the area could be developed by the dredging of a marina at Pigeon Lake Creek at the south end of the lake in order to provide a harbour for boats. It is considered that the expense involved in a project of this type would not be justified at this stage of development of the area, although it may be a reasonably course of action in the next four to five years. Similarly, the relocating of Highway #19 to a straight east-west direction, thereby by-passing Ma-Me-O Beach, would not appear to be a project whose costs would be justified at this stage.

(e) Total Capital Costs:

Total capital costs are as follows:

Road construction and landscaping	$ 5,000
Utilities	30,000
Recreational facilities	10,000
	$45,000

(f) Annual Operating Costs:

These costs represent the estimated month-to-month costs of operating and maintaining the various recreational and other facilities which

have been constructed for the benefit of the vacation home owner. These annual costs are estimated below:

Tennis court maintenance	$ 1,500
Garbage collection (once per week x 4 months)	500
Sewage plant operation	500
Road upkeep	500
Miscellaneous	1,000
	$ 4,000

8. Economic Viability for Hobbema Indians

In determining the economics of the initial 40-site phase of the secondary homes development, it was not considered realistic to use a discounted cash flow analysis with the preliminary cost estimates. Therefore a simple annual flow analysis with the preliminary cost estimates. Therefore a simple annual rate of return on investment analysis was used, and indicates the order of magnitude of return that could be expected from the proposed secondary homes project.

The following table indicates an annual rate of return on the estimated investment of $45,000:

Estimated Rate of Return over 15 Years

Estimated Annual Cash Inflow	$14,400
Estimated Annual Cash Outflow:	
Recovery of Principal	3,000
Annual Net Cash Inflow	$11,400
Annual Rate of Return on Investment	25.4%

Expressed another way, the payback period on the investment of $45,000 would be 3.1 years.

It has been estimated that approximately 16 acres would be required for this initial phase of the development and, with an estimated annual net cash inflow of $11,400 per year, the net income per developed acre would be $712 per year.

It should also be pointed out that the development of the various recreational opportunities along with the vacation homes would result in new employment opportunities which the Band itself could utilize if it is so desired. For example, in the case of a 40-homes development, approximately $35,000 to $40,000 of the total investment cost of $265,000 represents expenses paid for semi-skilled construction type work. It is considered that with a minimum amount of training, members of the Hobbema Indians could undertake this work.

Also, as the housing development expanded in size, additional employment opportunities for the Reserve members would be created in the service functions such as grounds and roads maintenance, recreational area maintenance as well as accounting, supervisory and general management duties.

CONCLUSIONS AND RECOMMENDATIONS

The results of the research and analysis presented in the previous chapters permit the following conclusions to be reached:

1. The Pigeon Lake Reserve of the Hobbema Indian Reserves has an important and well known recreational asset in Pigeon Lake and Ma-Me-O Beach. This potential has already been exploited to a considerable extent, but could still be developed to a greater intensity of use.
2. The Hobbema Indians can most profitably capitalize on this potential by considering the establishment of secondary home sites near Ma-Me-O Beach. The leasing of these sites to Edmonton and district residents could yield a substantial income to the Hobbema Indians.

It is recommended that the next step should be the undertaking of a detailed marketing, engineering and economic study for the purpose of examining the following aspects of the secondary homes development:

1. The extent of the market for secondary homes in the Edmonton area and the influence of factors besides income on demand for vacation homes, e.g. age, occupation, family size.
2. The recreational tastes of the Edmonton vacation home market.
3. The overall architectural and design concept for the development.
4. The detailed design and costs of the facilities and services required for the secondary homes development.
5. The economic impact of the development in terms of employment opportunities and potential income to Band members.
6. A detailed master plan of development and implementation for the project, including cash flow projections.

APPENDIX

Preliminary Estimate of Capital and Operating Costs to the Secondary Home Owner

In making a preliminary estimate of the capital and operating expenses that would be incurred by secondary home owners in the Pigeon Lake Reserve, the capital costs were based on two sizes of winterized prefabricated secondary homes. These estimates represent a reasonable approximation of the total cost required to completely assemble and equip (not including furnishings) a winterized secondary home. A brief description of the two homes used for this analysis follows:

Home A: A 579 square foot floor area single-storey construction consisting of a living room, kitchen and dining area, two bedrooms, bathroom and storage room. This home is made of prefabricated cedar logs and is fully winterized.

Home B: A 914 square foot floor area single-storey construction consisting of a living room, kitchen and dining area, four bedrooms, bathroom and storage area. This home is made of prefabricated cedar logs and is fully winterized.

(a) Capital Costs

The total capital costs are approximately $5,500 for Home A and $7,800 for Home B. Details of the costs appear in the following table:

Component	Home A	Home B
Basic price of house	$ 3,156	$ 5,049
Water system	300	300
Plumbing	620	650
Wall furnace	200	200
Electricity	400	500
Foundation	200	200
Assembly	500	750
Stain	124	151
Total	$ 5,500	$ 7,800

(b) Land Costs

As stated previously, the Hobbema Indians would lease the home sites to the secondary home owner on a long-term lease. It is estimated that the typical lease cost to the home owner would be $30 per month, or $360 per year.

(c) Operating Costs

The estimated annual operating costs to the secondary home owner are as follows:

Insurance	$50
Utilities	60
Maintenance	60
Occupancy charges	100
Miscellaneous	30
Total	$300

Occupancy charges are referred to above as representing the prorated cost per home for the annual operating and service costs incurred by the Hobbema Indians with respect to the maintenance of the tennis courts and other facilities as outlined in the body of the report.

(d) Monthly Carrying Charges

In estimating the monthly carrying charges for the secondary home owner, it has been assumed that mortgage financing can be arranged on the following terms:

Downpayment	-	25% of capital cost
Interest	-	8%
Term	-	15 years

On an amortized mortgage basis, the purchaser of Home A would be required to make a downpayment of $1,400 and would have monthly mortgage repayment commitments of approximately $39. The purchaser of Home B would be required to make a downpayment of $2,000 and would have monthly mortgage repayment commitments of $55. Therefore the total monthly carrying charges for each of the example homes would be as follows:

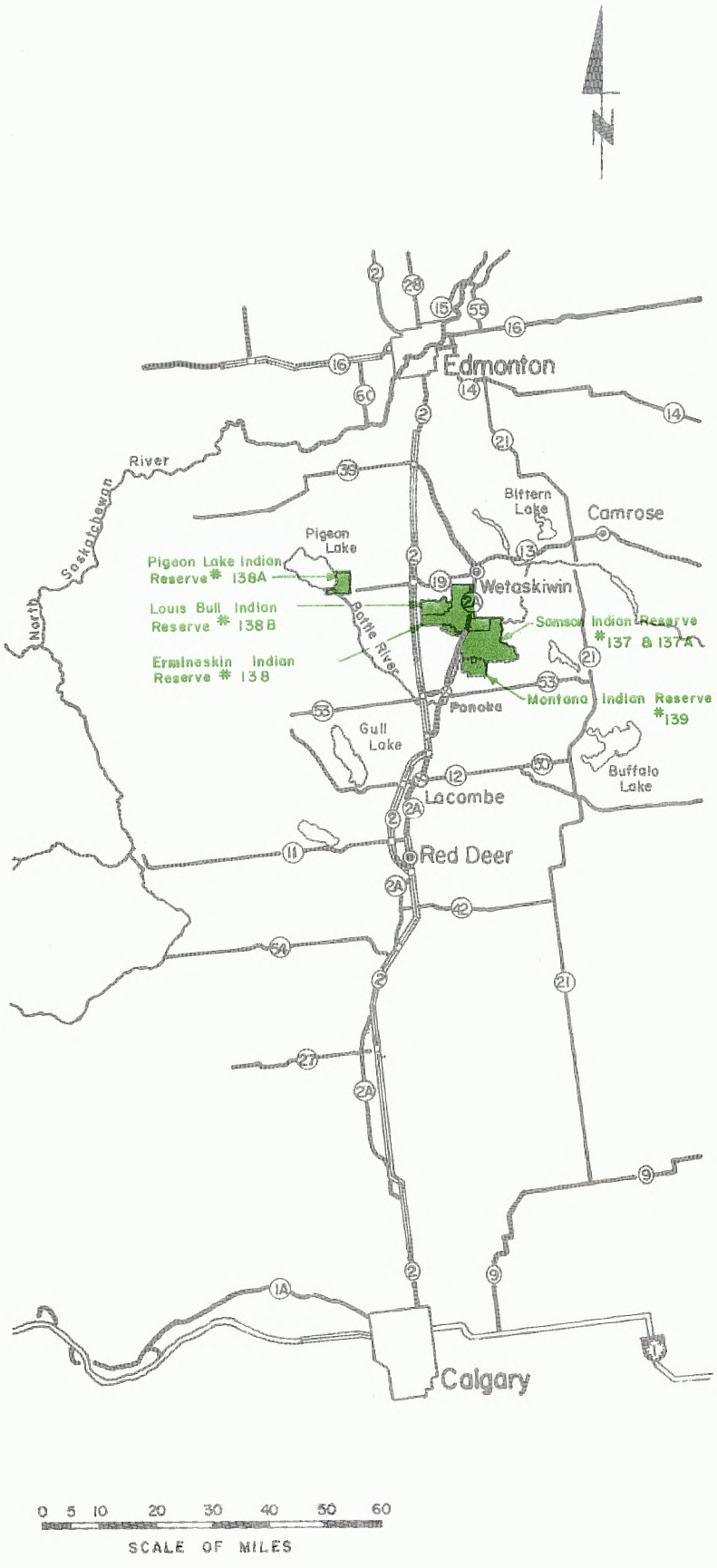
Component	Home A	Home B
Mortgage repayment	$ 39	$ 55
Land Lease	30	30
Operating Costs	25	25
Total	$ 94	$110

SOCIO-ECONOMIC & LAND USE STUDY

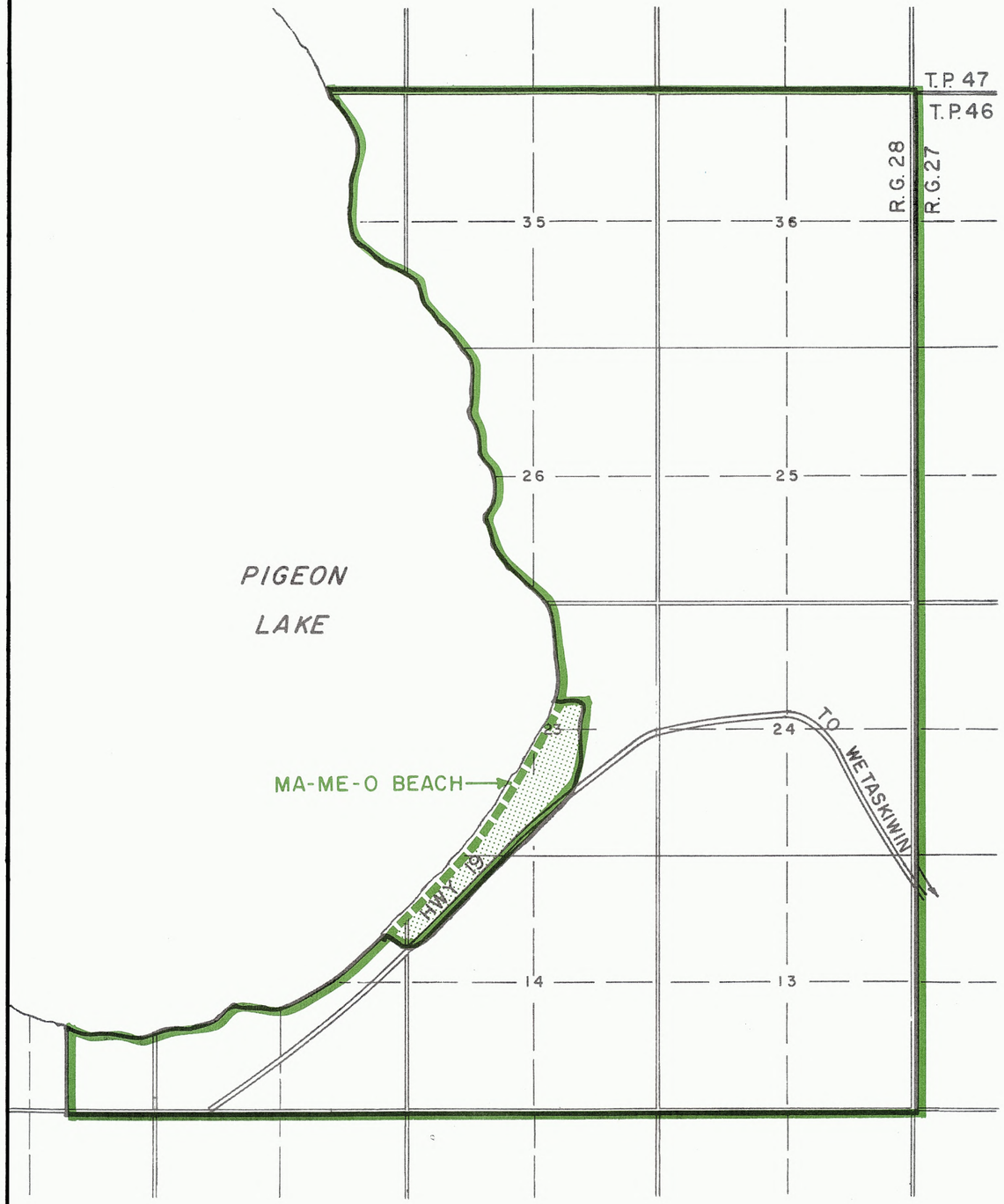
MAP No. 1

HOBBEMA INDIAN RESERVES

LOCATION PLAN



STANLEY ASSOCIATES ENGINEERING LTD.



SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 2

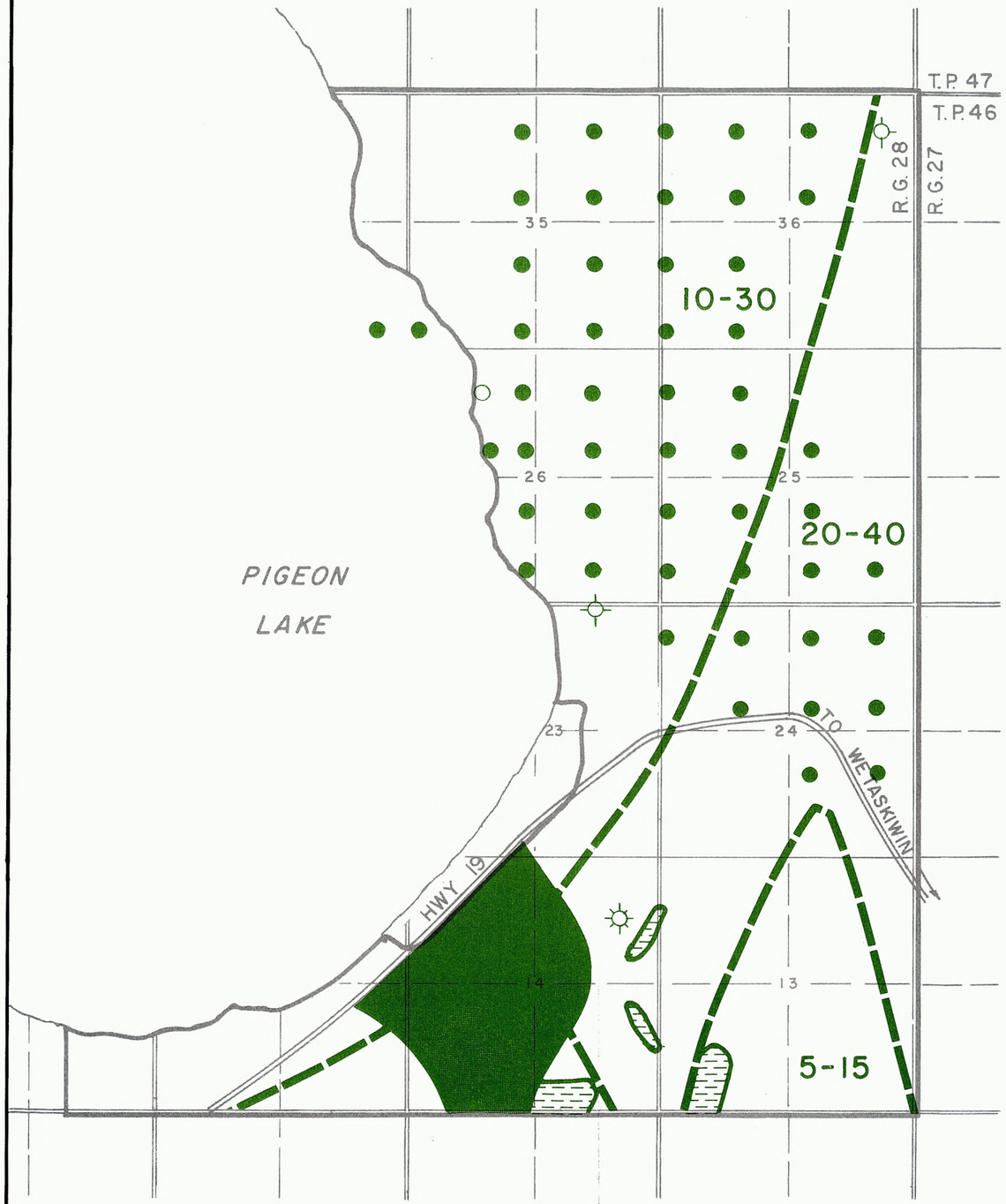
PIGEON LAKE INDIAN RESERVE #138A

ORIGINAL AND PRESENT RESERVE BOUNDARIES

LEGEND:

- PRESENT BOUNDARY OF RESERVE
- ORIGINAL BOUNDARY OF RESERVE
- SURRENDERED TO CROWN FOR SALE

STANLEY ASSOCIATES ENGINEERING LTD.



SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 3

PIGEON LAKE
INDIAN RESERVE #138A

GEOLOGY

LEGEND:

AREA OF REPORTED THICKNESS OF SURFICIAL MATERIAL

10-30 THICKNESS IN FEET (APPROXIMATE)

AREA OF ALLUVIUM: SAND, SILT, CLAY

BEACH: SAND, SILT

OIL AND GAS WELLS

OIL WELL

GAS WELL

ABANDONED

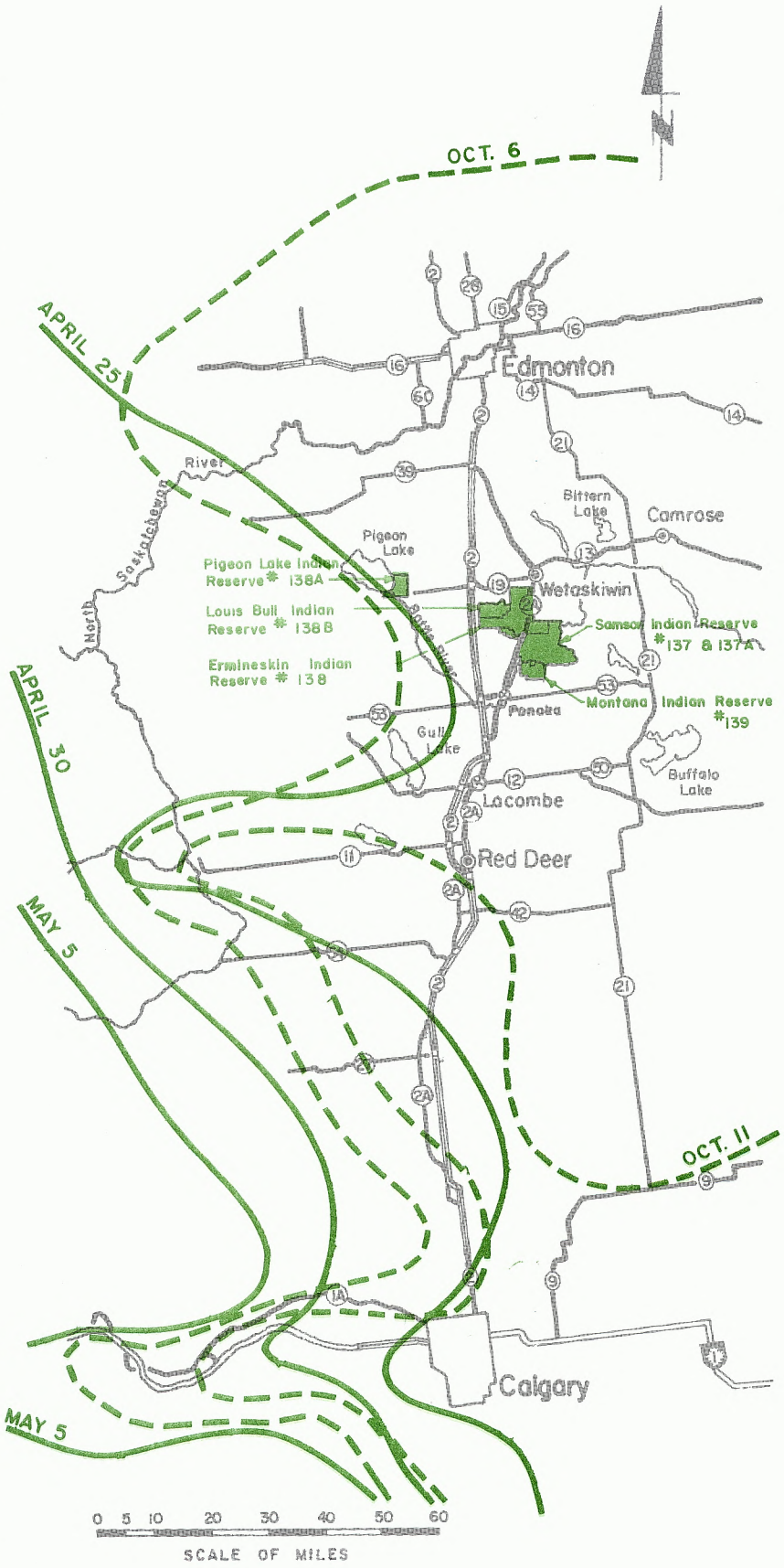
STANLEY ASSOCIATES
ENGINEERING LTD.

SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 4

HOBBEMA INDIAN RESERVES

GROWING SEASON



LEGEND:

BEGINNING OF GROWING SEASON

END OF GROWING SEASON

SOURCE:
THE CANADA LAND INVENTORY
REPORT No. 3

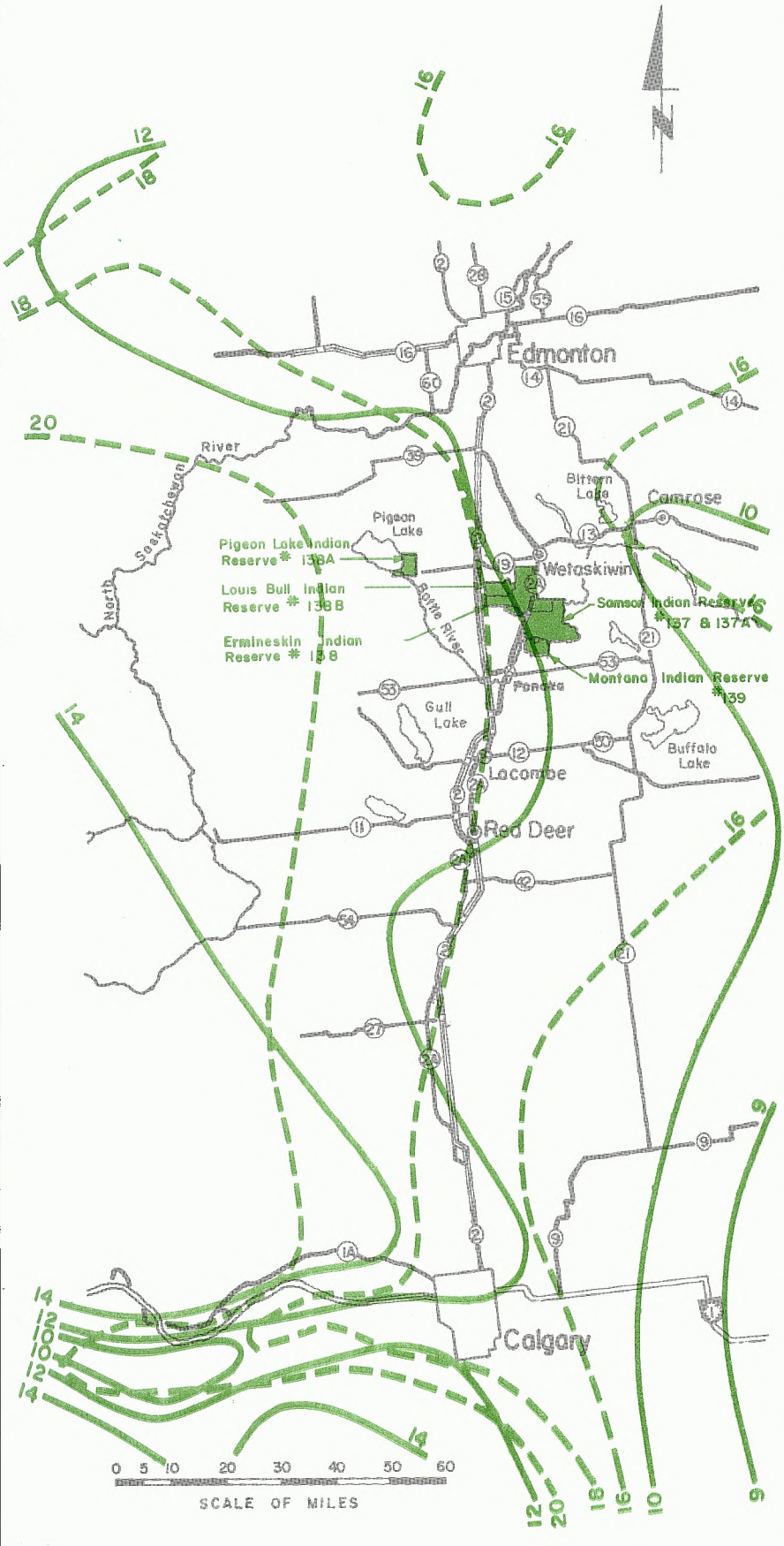
STANLEY ASSOCIATES ENGINEERING LTD.

SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 5

HOBBEMA INDIAN RESERVES

PRECIPITATION



LEGEND:

AVERAGE ANNUAL PRECIPITATION (INCHES)

AVERAGE MAY TO SEPTEMBER PRECIPITATION (INCHES)

SOURCE:
THE CANADA LAND INVENTORY
REPORT No. 3

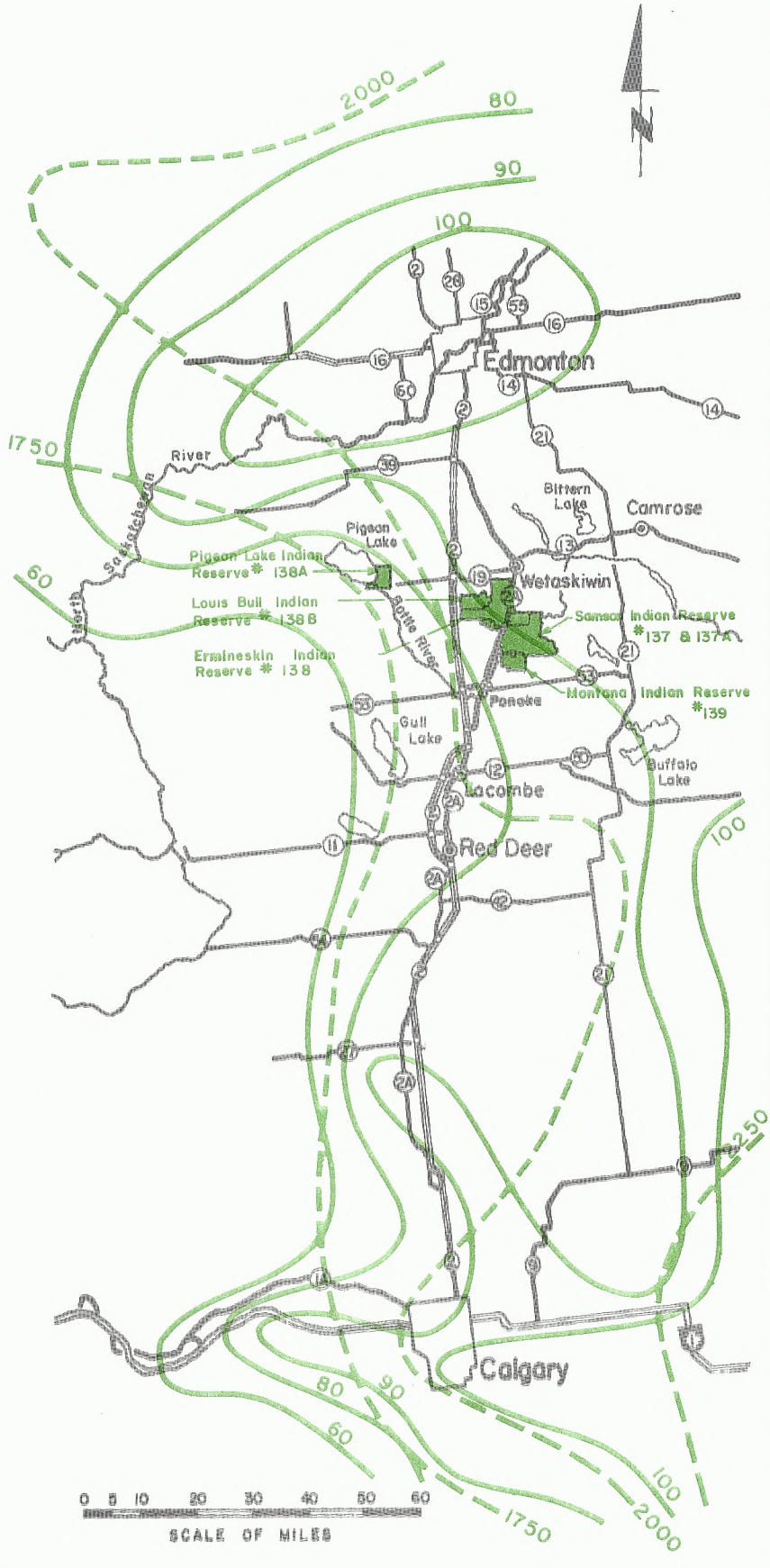
STANLEY ASSOCIATES ENGINEERING LTD.

SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 6

HOBBEMA INDIAN RESERVES

FROST FREE PERIOD AND DEGREE DAYS ABOVE 42° F



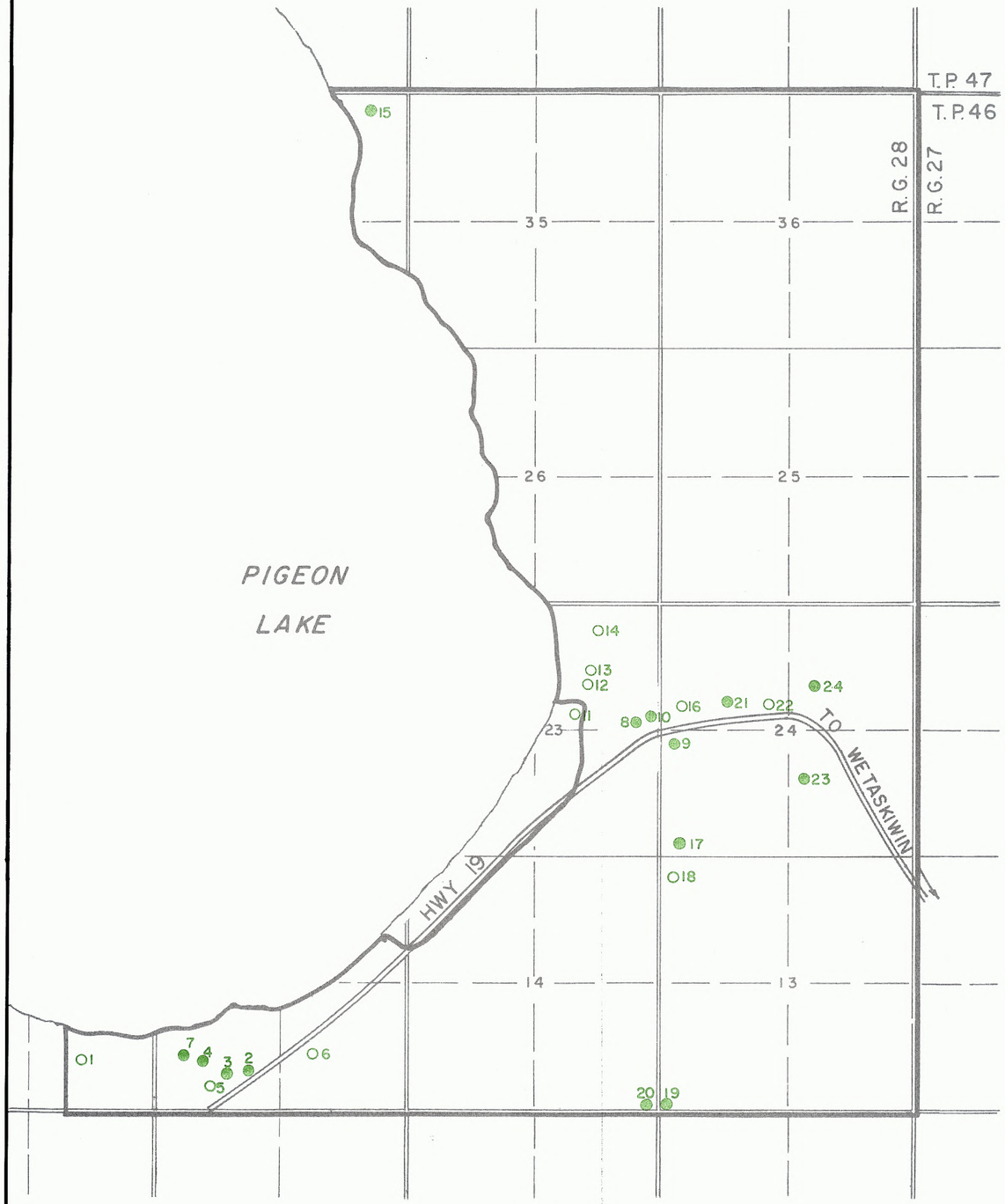
LEGEND:

MEAN "FROST FREE" PERIOD (DAYS)

DEGREE DAYS ABOVE 42° F

SOURCE:
THE CANADA LAND INVENTORY
REPORT No. 3

STANLEY ASSOCIATES ENGINEERING LTD.



SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 7

PIGEON LAKE
INDIAN RESERVE #138A

HOUSING

LEGEND:

- OCCUPIED HOUSE
- VACANT HOUSE

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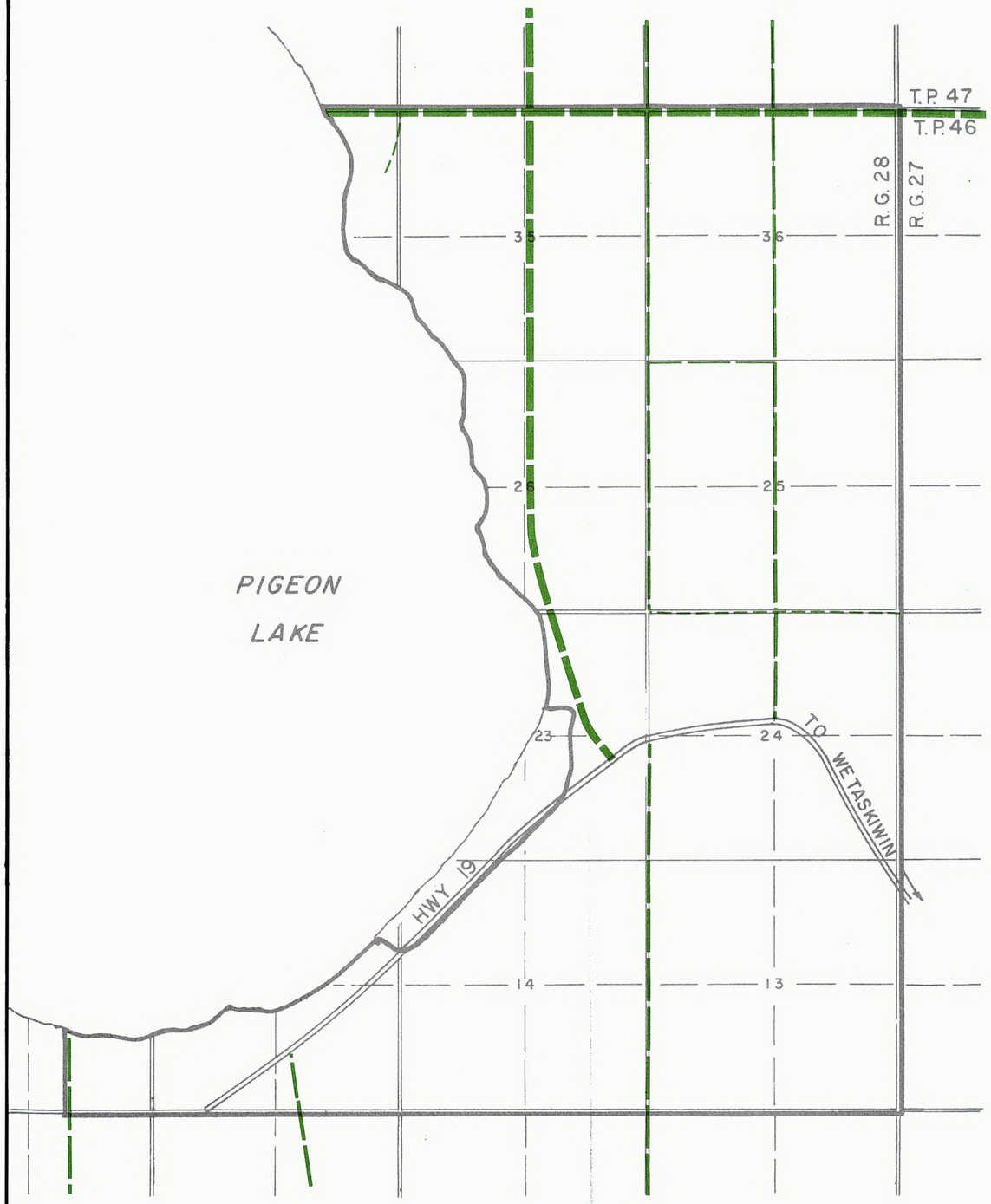


SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 8

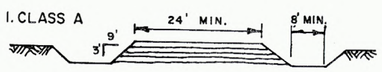
PIGEON LAKE
INDIAN RESERVE #138A

ROADS

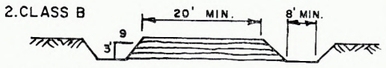
LEGEND:

- CLASS A GRAVELLED
- CLASS B GRAVELLED
- CLASS C GRAVELLED
- CLASS A NOT GRAVELLED
- CLASS B NOT GRAVELLED
- CLASS C NOT GRAVELLED
- TRAIL

1. CLASS A



2. CLASS B



3. CLASS C

4. TRAIL

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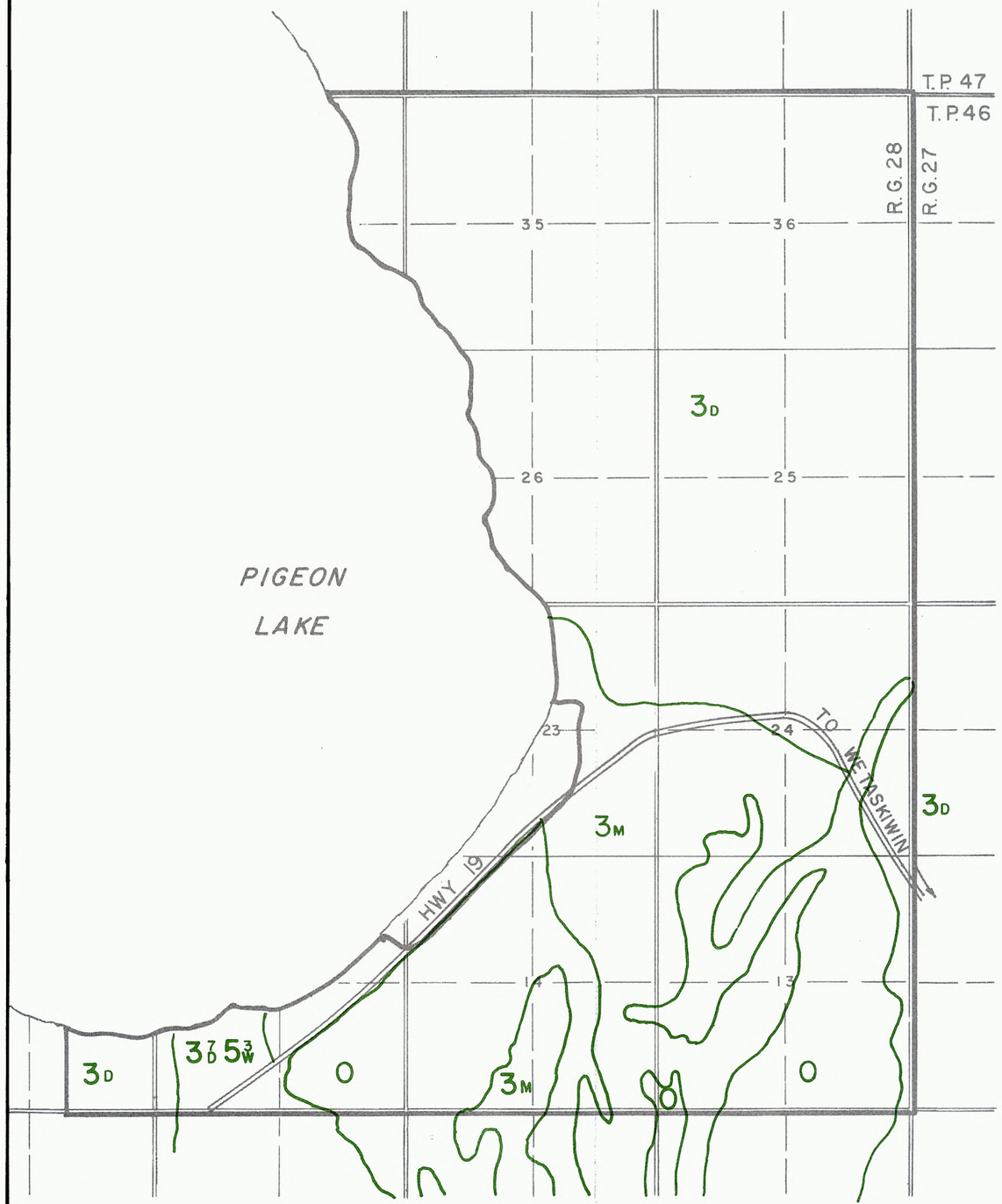

SOCIO-ECONOMIC & LAND USE STUDY

MAP No. 9

PIGEON LAKE
INDIAN RESERVE #138A

SOIL CLASSIFICATION

LEGEND:

CLASS

1 SOILS IN THIS CLASS HAVE NO SIGNIFICANT LIMITATIONS IN USE FOR CROPS.

2 SOILS IN THIS CLASS HAVE MODERATE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE MODERATE CONSERVATION PRACTICES.

3 SOILS IN THIS CLASS HAVE MODERATELY SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES.

4 SOILS IN THIS CLASS HAVE SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES, OR BOTH.

5 SOILS IN THIS CLASS HAVE VERY SEVERE LIMITATIONS THAT RESTRICT THEIR CAPABILITY TO PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE FEASIBLE.

6 SOILS IN THIS CLASS ARE CAPABLE ONLY OF PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE NOT FEASIBLE.

7 SOILS IN THIS CLASS HAVE NO CAPABILITY FOR ARABLE CULTURE OR PERMANENT PASTURE.

SUBCLASSES

S SOIL LIMITATIONS

T AOVERSE TOPOGRAPHY

W EXCESS WATER

X SOILS HAVING A MODERATE LIMITATION CAUSED BY THE CUMULATIVE EFFECT OF TWO OR MORE ADVERSE CHARACTERISTICS WHICH SINGLY ARE NOT SERIOUS ENOUGH TO AFFECT THE CLASS RATING.

D UNDESIRABLE SOIL STRUCTURE

M MOISTURE LIMITATION

EXAMPLE

$3^{9}_{T}5^{1}_{W}$ AN AREA OF CLASS 3, WITH TOPOGRAPHIC LIMITATION AND CLASS 5 WITH EXCESS WATER LIMITATION, IN THE PROPORTION OF 9 : 1.

SOURCE:
THE CANADA LAND INVENTORY
REPORT No. 2

STANLEY ASSOCIATES
ENGINEERING LTD.