
Plan Options

Gwich'in Settlement Area Land Use Plan

Produced by:
The Gwich'in Interim Land Use
Planning Board

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A Discussion Paper for the Land and Water Managers and
Users of the Gwich'in Settlement Area



Table of Contents

SECTION 1: INTRODUCTION TO LAND USE PLANNING IN THE GWICH'IN SETTLEMENT AREA	4
1.1 The Gwich'in Settlement Area	4
1.2 The People	6
1.3 Ecoregions	6
SECTION 2: LAND USE PLANNING PROCESS	9
2.1 Developing a Land Use Plan	9
2.2 Guiding Principles and Goals	13
2.3 Basis for Guiding Principles and Goals	14
2.4 Gwich'in Comprehensive Land Claim Agreement	15
2.4.1 Interpreting "An Integrated System"	15
2.4.2 Interpreting the First Land Use Planning Principle	16
2.4.3 Interpreting the Second Land Use Planning Principle	18
2.4.4 Interpreting the Third Land Use Planning Principle	20
2.4.5 Interpreting the Fourth Land Use Planning Principle	20
2.5 Mackenzie Delta Beaufort Sea Land Use Plan	21
2.6 Summary	22
SECTION 3: THE LAND USE REGULATORY PROCESS	23
SECTION 4: DEVELOPING A LAND USE CLASSIFICATION SYSTEM FOR THE GSA	29
4.1 A Review of the Land Use Classification System Developed for the Mackenzie Delta Beaufort Sea Land Use Plan	29
4.2 Critique of MDBSLUP's Land Use Classification System	30
4.3 A Proposed Land Classification System for the GSA	31
4.3.1 Conservation and Identification of Protected Areas	32
4.3.2 Development and Utilization of Land, Water and Resources	34
4.4 Applying the Land Use Classification System	35

SECTION 5: AMENDMENTS AND EXCEPTIONS TO THE LAND USE PLAN	41
5.1 Amendments to the Land Use Plan	41
5.2 Exceptions to the Land Use Plan	41
SECTION 6: LAND USE PLAN IMPLEMENTATION AND REVIEW	43
6.1 Monitoring the Implementation of the Land Use Plan	43
SECTION 7: LAND USE SECTOR ISSUES AND OPTIONS	47
7.1 Introduction	47
7.2 Renewable Resources	47
7.2.1 Forestry	47
7.2.2 Water Resources	50
7.2.3 Wildlife	52
7.2.4 Tourism and Recreation	56
7.3 Non-Renewable Resources	57
7.3.1 Sand and Gravel	57
7.3.2 Oil and Gas	58
7.3.3 Minerals	59
7.4 Public Development	61
7.4.1 Municipal Activities	61
7.4.2 Transportation	61
7.4.3 Waste Sites	62
7.4.4 Military Activities	63
7.5 Cultural Heritage	63
APPENDIX A : GLOSSARY OF TERMS	64
APPENDIX B: LIST OF ACRONYMS	68

List of Figures

Figure 1:	Map of the Gwich'in Settlement Region	05
Figure 2:	Map of the Ecoregions of the Gwich'in Settlement Area	08
Figure 3:	Land Use Planning Process	09
Figure 4:	Consultation Groups	12
Figure 5:	Guiding Principles of Land Use Planning Process	13
Figure 6:	Goals of Land Use Plan	14
Figure 7:	Direction from Gwich'in Comprehensive Land Claim Agreement	15
Figure 8:	Regulatory Agencies and Authorizations	24
Figure 9:	Conformity with the Land Use Plan	28
Figure 10:	Proposed Land Classification System and Implementation Examples	37
Figure 11:	Comprehensive Review Process	46

Section 1: Introduction to Land Use Planning in the Gwich'in Settlement Area

The Gwich'in Interim Land Use Planning Board (GILUPB) is developing a Land Use Plan for the Gwich'in Settlement Area (GSA). The GILUPB has been given the authority to develop the Land Use Plan under the Gwich'in Comprehensive Land Claim Agreement (GCLCA). Once the Mackenzie Valley Resource Management Act (MVRMA) becomes legislation, the Gwich'in Land Use Planning Board (GLUPB) will replace the GILUPB.

The GILUPB is conducting its land use planning with the belief that the Federal Government will enact the MVRMA, as it indicated it would do in the GCLCA. The MVRMA will result in Gwich'in Comanagement Boards and Mackenzie Valley wide Comanagement Boards playing a significant role in the management of land, water and natural resources for their areas.

As part of the land use planning process, this Plan Options Paper is being released to present the planning direction the GILUPB is considering taking for the GSA. The options presented here result from research conducted on major land uses in the GSA, as well as discussions with community representatives, land and water users and managers in the GSA. Land and water managers include all those involved in the decision making processes regarding land, water and resource use.

Resource management concepts presented in this document are options which the GILUPB feel warrant further examination. This document will be distributed widely to provoke discussion on the future of land and water use in the GSA.

1.1 The Gwich'in Settlement Area

The GCLCA was settled, in 1992, for what is now known as the Gwich'in Settlement Region (GSR) (see Figure 1). The GSR is made up of the GSA, and two additional areas in the Yukon Territory, referred to as the Primary Use Area and the Secondary Use Area. The GILUPB is responsible for land use planning in the GSA; it is not the agency responsible for land use

planning in the areas in the Yukon Territory. This responsibility falls to the Yukon Land Use Planning Council. According to the Yukon Transboundary Agreement, the Yukon Land Use Planning Council will consult with the GILUPB on any land use planning initiatives in the Primary and Secondary Use Areas.

The GSA is bordered by the Yukon Territory/Northwest Territories boundary to the west, the Inuvialuit Settlement Region to the north and the Sahtu Settlement Region to the southeast. A technical description of the GSA boundary can be found in Appendix A of the GCLCA.

1.2 The People

There are approximately 2,400 claimants to the GCLCA, with 60% of the people living in the GSA. The two predominantly Gwich'in communities are Fort McPherson (population 759) and Tsiigehtchic (population 144). Aklavik (population 801) is a mixed community of Gwich'in and Inuvialuit, while Inuvik (population 3,026) has a mixed population of Gwich'in, Inuvialuit and non-aboriginals.

The ancestors of the Gwich'in are believed to have made their way to the GSA, from what is now the Yukon Territory, approximately 2,500 years ago. Today, Gwich'in live in an area that includes north-east Alaska, the northern Yukon and the north-western part of the Northwest Territories. Two of the seven original Gwich'in tribes are found in the GSA. The Tetlit Gwich'in live primarily in Fort McPherson, as well as in Aklavik and Inuvik, while the Gwichya Gwich'in live primarily in Tsiigehtchic. Gwich'in in Aklavik and Inuvik have formed their own bands in the past 20 years: the Ehdiitat band in Aklavik and the Nihtat band in Inuvik.

1.3 Ecoregions

Within the GSA landscape of approximately 58,190 km² there are a diverse number of habitats that sustain a large variety of plant and animal species. The "National Ecological Framework for Canada" (1995) references six ecoregions in the GSA: Mackenzie Delta, Peel River Plateau, Great Bear Lake Plain, Fort McPherson Plain, British-Richardson Mountains and Mackenzie Mountains (see Figure 2). Below is a brief description of each.

The **Mackenzie Delta** is an area of low elevation containing extensive wetlands, lakes and river channels. It is characterized by open, stunted forests of black spruce, tamarack, willow and dwarf birch. The wet habitat of the Delta is home to muskrat, beaver, and moose. It is an

important staging and breeding area for many species of migratory birds. The rivers and lakes contain many species of fish including: broad whitefish, inconnu, jackfish, loche and migratory char.

The **Peel River Plateau** includes the foothills between the Peel River and the base of the Mackenzie and Richardson Mountains. This ecoregion is composed of many small lakes and bogs surrounded by open, stunted forests of black spruce and tamarack. Many mammals are found in this area including caribou and furbearers such as muskrat, beaver, marten, and otters.

The **Fort McPherson Plain** ecoregion extends south of the Delta between the Peel and Mackenzie Rivers. This is an area of low relief and poor drainage characterized by wetlands and stunted forests of black and white spruce, willows and dwarf birch. The Bluenose Caribou herd migrate into this area from the east, and small herds of Woodland Caribou from the south are also common. Other mammals found in this ecoregion include moose, wolves, black bears, and an abundance of furbearers.

The **Great Bear Lake** ecoregion is found south of the Delta and east of the Mackenzie River. This rolling landscape of low elevation has scattered wetlands, pockets of tundra and open forests of black and white spruce, tamarack, willows and dwarf birch. Wildlife is similar to that of the Fort McPherson Plain. In the GSA, the area comprised by the Great Bear Lake and the Fort McPherson Plain ecoregions are often referred to as the ***Mackenzie Valley Lowlands***.

The **British-Richardson Mountains** represented in the GSA by the eastern slopes of the British and Richardson mountains are commonly referred to as the ***Richardson Mountains*** in the GSA. At its higher elevations, the area is dominated by alpine tundra. Lower elevations are characterized by pockets of open forest, shrub land and sedge habitats. Dall's sheep live in some sections of the higher areas, and Porcupine Caribou migrate into the mountains in the fall and winter. Grizzly bears, black bears and wolves also inhabit the Richardson Mountains.

The **Mackenzie Mountain** ecoregion contains the headwaters of the Arctic Red River. The area is characterized by a steep, mountainous landscape of alpine tundra and sub-alpine woodlands. These mountains are rugged with imposing peaks, and many steep, unvegetated slopes. Small glaciers flow from the highest peaks. Wildlife in the Mackenzie Mountains is similar to the variety found in Richardson Mountains, although the caribou that migrate in and out of the Mackenzie Mountains are Woodland Caribou from the Bonnet Plume herd in the Yukon.

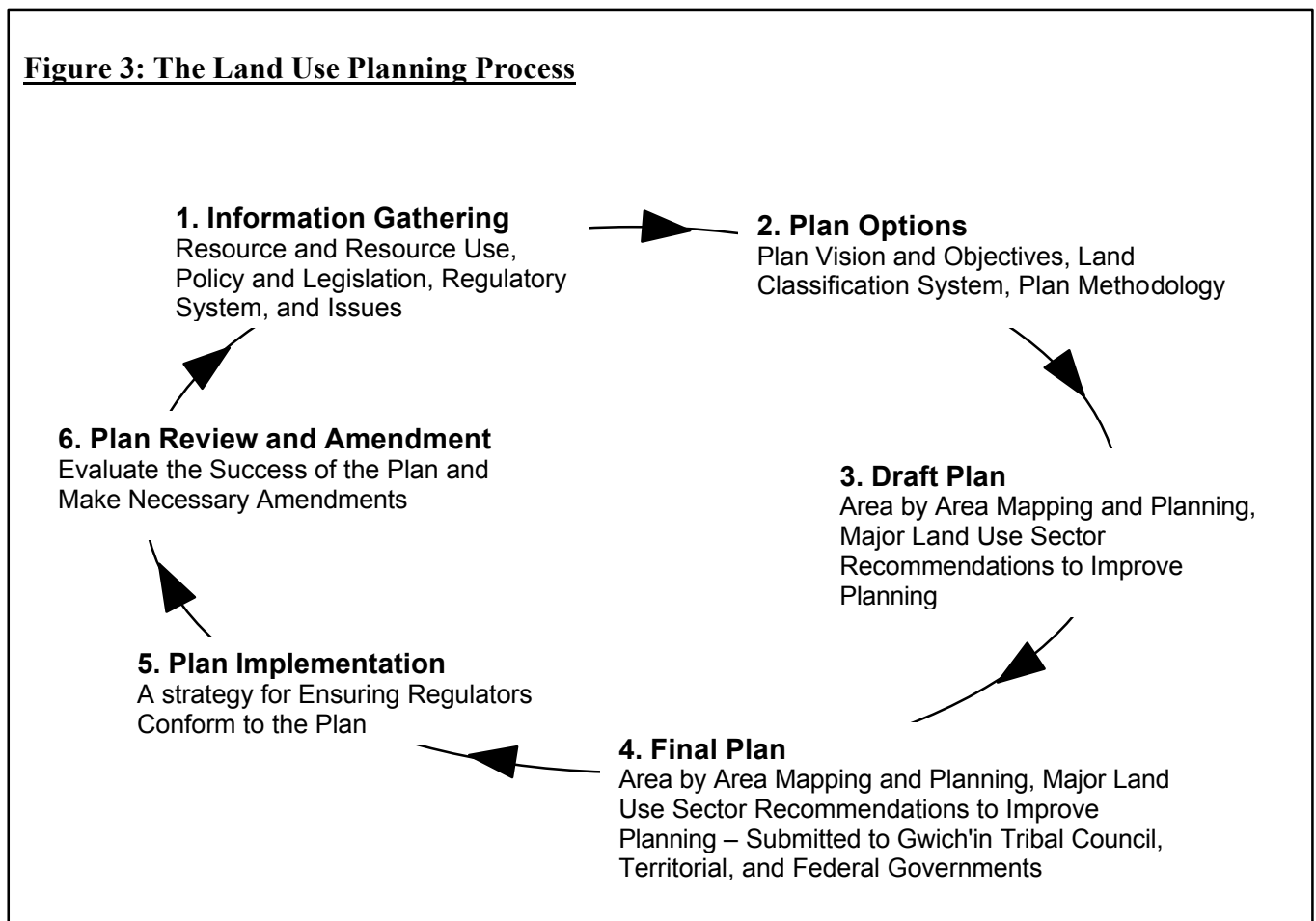
Section 2: Land Use Planning Process

2.1 Developing a Land Use Plan

The Land Use Plan for the GSA will outline what land uses are appropriate throughout the GSA, including Gwich'in private lands and Territorial and Federal lands. The process involves six stages (see Figure 3):

- 1) Information Collection and Analysis;
- 2) Plan Options;
- 3) Draft Plan Production;
- 4) Final Plan Production;
- 5) Implementation;
- 6) Review and Amendment.

Figure 3: The Land Use Planning Process



Stage 1

The **Information Collection and Analysis** component has been completed and three main products have been produced: Inventory and Assessment Reports, Land Use Maps and a small library of resource information. The series of Inventory and Assessment Reports on each of the major land use sectors in the GSA contain: a description of the resource; a brief history of the land use; an examination of current uses and associated planning issues; and anticipated future demands for the resource. The Land Use Maps identify locations of significant resources and resource use. The library of information provides reference material for land use planning.

Stage 2

The main product of Stage 2 is this **Plan Options Paper** which identifies land use planning principles and goals, analyzes the regulatory system, makes recommendations for a land use classification system, discusses alternatives for implementation and review of the Land Use Plan, and reviews land use sector issues. The Plan Options Paper is intended to generate discussion and debate amongst the land managers and users regarding the future of land use in the GSA. The release of a Plan Options Paper will be followed by a GSA Land Use Planning Workshop, which will bring together land and water users and managers for a review of the concepts outlined in the discussion paper.

Stage 3

The development of a **Draft Land Use Plan** will summarize the decisions the GILUPB has made with respect to ideas and comments from the land and water users and managers involved in the Plan Options Paper review. Meetings and presentations will follow the release of the Draft Land Use Plan. A second GSA Land Use Planning Workshop will take place to ask for comments and obtain recommendations for any modifications to the Draft Land Use Plan.

Stage 4

The development of a **Final Land Use Plan** will reflect the GILUPB's decisions with respect to comments on the Draft Land Use Plan. A Draft Final Land Use Plan will be submitted for approval to the Gwich'in Tribal Council (GTC), Government of the Northwest Territories (GNWT), and the Federal Government through the Department of Indian Affairs and Northern Development (DIAND). As the approval agencies, their comments on the Draft Final Land Use Plan will be examined carefully, and their suggestions may be incorporated into the plan. If one of the approval agencies recommends major revisions, the GILUPB may revisit the Land Use Plan and incorporate appropriate changes. If all approval agencies accept the Draft Final Land Use Plan, it becomes the Final Land Use Plan.

Stage 5

The **implementation** of the Final Land Use Plan is a GILUPB responsibility. This stage will be facilitated by the development of an **Implementation Plan**, which will be based on the approved Final Land Use Plan. The Implementation Plan will outline what tasks need to be done in order to implement the Land Use Plan, as well as what agencies will need to play a role in helping to implement the Land Use Plan.

Stage 6

This stage refers to the Final Land Use Plan's **reviews** by the GLUPB that will take place every five years. **Amendments** to the Final Land Use Plan can be made with approval from the GLUPB, GTC, GNWT and Federal Government. If needed, amendments can also be made during the five year life span of the Final Land Use Plan (see Section 5).

Throughout the planning process consultation with land users and land and water managers will be crucial. Figure 4 outlines groups that will be consulted throughout the land use planning process.

Figure 4: Consultation Groups

Gwich'in Organizations

- Renewable Resource Councils
- Gwich'in Tribal Council
- Gwich'in Land Administration
- Gwich'in Social and Cultural Institute
- Designated Gwich'in Organizations (Community Councils)
- Elders and Youth Councils
- Land Use Planning Working Groups

Non-Gwich'in Native Organizations

- Inuvialuit Land Administration
- Vuntut Gwich'in Tribal Council
- Natcho Nyak Dun
- Sahtu Tribal Council

Non Governmental Organizations

- Canadian Arctic Resource Committee
- Ecology North

Co-Management Groups

- Porcupine Caribou Management Board
- Peel River Watershed Advisory Council
- Gwich'in Land & Water Board
- Gwich'in Renewable Resource Board
- Mackenzie Valley Environmental Impact Review Board

Federal Government

- Fisheries and Oceans
- Indian Affairs and Northern Development (DIAND)
- Environment Canada
- Canadian Armed Forces
- Transport Canada
- Natural Resources Canada
- National Energy Board
- Heritage Canada

Government of the Northwest Territories (GNWT)

- Resources, Wildlife & Economic Development (RWED)
- Transportation
- Prince of Wales Northern Heritage Centre
- Aurora Research Institute

Industry

- Western Arctic Tourism Association
- Northern Transportation Company Limited
- Northwestel
- NWTPowerCorp
- Chamber of Mines
- Canadian Association for Petroleum Producers

2.2 Guiding Principles and Goals

The Guiding Principles and Goals presented in Figures 5 and 6 are derived from the GCLCA and the Mackenzie Delta Beaufort Sea Land Use Plan (MDBSLUP). These two documents are used because they indicate the land values of the Gwich'in and the GSA's major land users. As the MVRMA reiterates the land use planning objectives in the GCLCA, it is not looked at separately.

Guiding Principles provide direction for the land use planning process and Goals provide direction for the actual Land Use Plan. The key passages used from the GCLCA and MDBSLUP in deriving various Guiding Principles and Goals are discussed in the following Sections.

Figure 5: Guiding Principles of the Land Use Planning Process

- 1. Involve all land users and managers in the production of the Land Use Plan, with special attention given to the people of the communities and designated Gwich'in organizations;**
- 2. Consider community areas of interests in the GSA as equal to territorial, national and international areas of interests in the GSA;**
- 3. Provide adequate time for land users and managers to review products from the Board;**
- 4. Seek input from key agencies at each step in the planning process;**
- 5. Work within the Integrated Resource Management Framework being developed for the GSA;**
- 6. Integrate traditional environmental knowledge with scientific knowledge in developing the Plan; and**
- 7. Provide an amendment and an exception process for the completed Land Use Plan.**

Figure 6: Goals of the Land Use Plan

- 1. The Land Use Plan will protect the land, water, air, and natural resources key to the maintenance of the GSA's ecosystems upon which all people depend;**
- 2. The Land Use Plan will protect the cultural resources of the GSA, particularly those associated with the Gwich'in;**
- 3. The Land Use Plan will ensure maximum resource protection while allowing for the development of resources so that the Gwich'in, and all residents of the GSA, can participate or benefit from the regional and national economy;**
- 4. The Land Use Plan will create a vision of future land use in the settlement area;**
- 5. The Land Use Plan will identify the decision making process that produced the main components of the Plan;**
- 6. The Land Use Plan will include a process for amending the Plan to reflect changes in land uses and land use values;**
- 7. The Land Use Plan will recognize the rights of the Gwich'in and will conform with the Gwich'in Comprehensive Land Claim Agreement; and**
- 8. The Land Use Plan will enhance the ability of the Gwich'in to become self-sufficient.**

2.3 Basis for Guiding Principles and Goals

The GCLCA and the MDBSLUP provide this land use planning process with policy direction. The main land use planning principles and objectives of these two documents are represented in the Guiding Principles and Goals. The key concepts from the GCLCA and MDBSLUP used in developing the Guiding Principles and Goals are discussed below.

2.4 Gwich'in Comprehensive Land Claim Agreement

The GCLCA in Chapter 24 gives direction for an integrated resource management system and sets out “land use planning principles”. Figure 7 outlines significant clauses in the GCLCA for land use planning.

Figure 7: Direction from Gwich'in Comprehensive Land Claim Agreement

Chapter 24.1.1: *(a) an integrated system of land and water management should apply to the Mackenzie Valley;*

Chapter 24.2.4 (Land Use Planning Principles):

- (a) the purpose of land use planning is to protect and promote the existing and future well being of the residents and communities of the settlement area having regard for the interest of all Canadian;*
- (b) special attention shall be devoted to:*
 - (i) protecting and promoting the existing and future social, cultural and economic well-being of the Gwich'in;*
 - (ii) lands used by the Gwich'in for harvesting and other uses of resources; and;*
 - (iii) the rights of the Gwich'in under this agreement;*
- (c) land use planning shall directly involve communities and designated Gwich'in organizations and;*
- (d) the plan developed through the planning process shall provide for the conservation, development and utilization of land, resources and waters.*

The clauses presented in Figure 7 and the **Guiding Principles** and **Goals** associated with them are discussed below.

2.4.1 Interpreting "An Integrated System"

The GCLCA in Chapter 24.1.1 states that *(a) an integrated system of land and water management should apply to the Mackenzie Valley*. To meet this need a integrated resource management framework is being developed for the coordination of activities of GSA groups

involved in resource management. The Land Use Plan will be an important part of an integrated resource management framework. Four types of integration are being considered for this framework:

- 1) Integration of ecosystem components which involves managing resources from an ecosystem perspective as opposed to a sector by sector approach;
- 2) Integration/coordination of group's goals and strategies. This involves making sure each group understands their role, how they fit with other groups, as well as the coordination of communication and information systems between groups.
- 3) Integration of western science with local or traditional knowledge in the decision-making and management framework;
- 4) Integration of different values, viewpoints and uses in setting land use priorities.

Guiding Principle 5 addresses the need for land use planning to take place within an integrated resource management framework.

Guiding Principle 5. Work within the Integrated Resource Management Framework being developed for the GSA.

2.4.2 Interpreting the First Land Use Planning Principle

The first land use planning principle in Section 24.2.4 of the GCLCA is:

(a) the purpose of land use planning is to protect and promote the existing and future well being of the residents and communities of the settlement area having regard to the interest of all Canadians:

In analyzing this principle the GILUPB asked the questions:

1. Who are the residents of the region?
2. What is meant by the phrase “well being”?
3. How can a land use plan promote “well being”?
4. How will the interests of all Canadians be addressed?

Question 1. Who are the residents of the region?

The majority of residents in the GSA are Gwich'in, however there are also people of other origins in the GSA. Inuvialuit live both in Aklavik and Inuvik, and non-aboriginal people are mainly centered in Inuvik.

Question 2. What is meant by the phrase well being?

Question 3. How can a land use plan promote well being?

In answering these questions it is worthwhile to examine the relationship between the people of the GSA and their environment. The main components of the environment are considered to be land, water, air and natural resources. The Gwich'in and Inuvialuit have always had a close relationship with their environment. Traditional activities such as hunting and fishing are directly linked to the environment. During the Mackenzie Delta Beaufort Sea Planning exercise, non-aboriginal people also indicated that they placed a high value on the natural resources of the area. Therefore, in answer to the second question, the well-being of the residents of the GSA is tied closely to the maintenance of the environment, specifically the land, water, air, natural resources and the interconnections between them.

To answer the third question, a Land Use Plan can promote the well-being of the residents by providing:

A) a degree of **stability and security** about land use activities both for environmental protection and resource development. This can be done by stating what land uses are allowed or not allowed throughout the settlement area. Goal 1 of the Land Use Plan reflects the need to protect the environment while Goal 3 of the Land Use Plan reflects the need encourage economic growth.

Goal 1. The Land Use Plan will protect the land, water, air and natural resources key to the maintenance of the GSA's ecosystems upon which all people depend.

Goal 3. The Land Use Plan will ensure maximum resource protection while allowing for the development of resources so that the Gwich'in, and all residents of the GSA, can participate or benefit from the regional and national economy.

B) an **accessible straightforward land use planning process**. Residents in the GSA need to understand how land resources are being allocated and have access to the decision-making processes. The process of developing a Land Use Plan offers residents various opportunities to voice their concerns about land use activities. The Land Use Plan, when in place, will provide opportunities for residents to participate in future decision-

making during the life of the Land Use Plan. Guiding Principles 1 and 3 address people's concerns with the land use planning process:

Guiding Principle 1. Involve all land users and managers in the production of the plan, with special attention given to the people of the communities and designated Gwich'in organizations.

Guiding Principle 3. Provide adequate time for land users and managers to review products from the Board.

C) flexibility about future land use. The Land Use Plan will create an exception and an amendment process to provide mechanisms for updating the Land Use Plan. This intention is reflected in Guiding Principle 6 and Goal 6:

Guiding Principle 6. Provide an amendment and an exception process for the Land Use Plan.

Goal 6. The Land Use Plan will provide a process for amending the Plan to reflect changes in land uses and land use values.

Question 4. How will the interests of all Canadians in the GSA be addressed?

To answer question four, it is necessary to decide what are the interests of all Canadians. For the purposes of land use planning, their interests include: economic development in the GSA (oil and gas, mineral, fur and tourism industries); maintenance of native culture; and maintenance of the area's natural environment as it plays a role in the integrity of the Canadian environment as a whole. Groups representing the interests of all Canadians will be invited to participate in the planning process to ensure that the Land Use Plan considers views of people outside of the GSA.

2.4.3 Interpreting the Second Land Use Planning Principle

The second land use planning principle set out in Chapter 24.2.4 of the GCLCA is:

(b) special attention shall be devoted to:

(i) protecting and promoting the existing and future social, cultural and economic well-being of the Gwich'in;

(ii) lands used by the Gwich'in for harvesting and other uses of resources; and;

(iii) the rights of the Gwich'in under this agreement;

In *(i) protecting and promoting...the social, cultural and economic well-being of the Gwich'in*, the Land Use Plan will give special consideration to land, water, air, natural and cultural resources. Gwich'in social, cultural and economic well-being is dependent upon these resources. If the natural resources are eliminated, made inaccessible, or significantly altered, the Gwich'in society, culture and economy will be put in jeopardy. Therefore, Goals 1 and 2 reflect the need to protect all resources:

Goal 1. The Land Use Plan will protect the land , water, air and natural resources key to the maintenance of the GSA's ecosystems upon which all people depend.

Goal 2. The Land Use Plan will protect the cultural resources of the GSA, particularly those associated with the Gwich'in.

In paying special attention to *(ii) lands used by the Gwich'in for harvesting and other uses of resources*, the Land Use Plan will consider the dependence of the Gwich'in on traditional uses of the land for hunting, fishing and trapping as well as non-traditional uses. The Gwich'in are increasingly becoming involved in non-traditional activities within the larger regional and national economy such as tourism, commercial forestry and construction-related activities. The Land Use Plan will have to consider what types of industries the Gwich'in are becoming involved in and what their needs will be in the future. Goal 3 reflects the need to both protect resources and allow for resource development:

Goal 3. The Land Use Plan will ensure maximum resource protection while allowing for the development of resources so that the Gwich'in, and all other residents of the GSA, can participate or benefit from the regional and national economy.

Special attention is given to *(iii) the rights of the Gwich'in under the GCLCA*. The majority of the rights of the Gwich'in relate to resource management on both crown land and Gwich'in private lands. On Gwich'in private lands the GCLCA states that "the Gwich'in may prepare a land use plan or plans for settlement lands in the settlement area which shall be considered by the Planning Board". This has yet to happen in the GSA, although the GTC may consider producing a management plan for the Aklavik area for a proposed trail from Aklavik to

the Richardson Mountains. The rights of the Gwich'in under the GCLCA are recognized in Goal 7:

Goal 7. The Land Use Plan will recognize the rights of the Gwich'in and will conform with the Gwich'in Comprehensive Land Claim Agreement.

2.4.4 Interpreting the Third Land Use Planning Principle

The third land use planning principle in Chapter 24.2.4 of GCLCA states that

(c) land use planning shall directly involve communities and designated Gwich'in organizations

The land use planning process has already involved communities and designated Gwich'in organizations and will continue to do so. Traditional knowledge is also being taken into consideration in the planning process. Guiding Principles 1, 4 and 5 refer to the role of the communities in the planning process:

Guiding Principle 1. Involve all land users and managers in the production of the Land Use Plan, with special attention given to the people of the communities and designated Gwich'in organizations.

Guiding Principle 4. Seek input from key agencies at each step in the planning process.

Guiding Principle 6. Integrate traditional environmental knowledge with scientific knowledge in developing the Plan.

2.4.5 Interpreting the Fourth Land Use Planning Principle

The fourth land use planning principle in Chapter 24.2.4 of the GCLCA states that:

d) the plan developed through the planning process shall provide for the conservation, development and utilization of land, resources and waters.

In keeping with this planning principle, the Land Use Plan will have to provide protection for the land, water and natural resources but also accommodate some land, water and natural resource based economic development. This land use planning principle contains the real challenge of producing a Land Use Plan. The Plan will have to reflect a balance between the traditional subsistence use of the land by the Gwich'in and economic development that is necessary for the GSA to prosper as indicated in Goal 3 of the Land Use Plan.

Goal 3. The Land Use Plan will ensure maximum resource protection while allowing for the development of resources so that the Gwich'in, and all residents of the GSA, can participate or benefit from the regional and national economy;

2.5 Mackenzie Delta Beaufort Sea Land Use Plan

The MDBSLUP was completed in 1991, however it did not receive final approval by the government. The history of the Mackenzie Delta Beaufort Sea Land Use Planning Commission and the MDBSLUP is discussed in Section 4. Although the MDBSLUP was not adopted, the GCLCA requires that the GSA Land Use Plan incorporate the land use planning work completed during the MDBSLUP process.

Various concepts from the MDBSLUP are considered in the **Guiding Principles** and **Goals**. One of the major thrusts of the MDBSLUP is for the development of a system of protected areas that addresses the needs of the people in the north. Goals 1 and 2 of this Land Use Plan reflect the concern for protection:

Goal 1. The Land Use Plan will protect the land, water, air, and natural resources key to the maintenance of the GSA's ecosystems upon which all people depend;

Goal 2. The Land Use Plan will protect the cultural resources of the GSA, particularly those associated with the Gwich'in.

In the MDBSLUP the development of a system of protected areas is a means of: 1) ensuring that northern communities can meet their needs; and 2) allowing communities to play a major role in decision-making. These objectives are reflected in Guiding Principle 1 and Goal 8 for this Land Use Plan.

Guiding Principle 1. Involve all land users and managers in the production of the Land Use Plan, with special attention given to the people of the communities and designated Gwich'in organizations.

Goal 8. The Land Use Plan will enhance the ability of the Gwich'in to become self sufficient.

The MDBSLUP recognizes areas that communities indicated were significant through the land use planning process. Before the MDBSLUP, only territorial, national and international areas of interest had been given consideration. The first objective of the MDBSLUP is to “document community areas of interest and concern on par with territorial, national and international areas of interest”. This objective is recognized in Guiding Principle 2 of this land use planning process:

Guiding Principle 2. Consider community areas of interests in the GSA as equal to territorial, national and international areas of interests in the GSA.

An overall objective of the MDBSLUP is to provide for the future well being of the people in the region through a system of land management that can:

define the conditions under which conservation and utilization can be assured; to focus attention on the interaction between different land interests; and to prevent or resolve conflicts in a fair and equitable manner.

Goal 4 in this Land Use Plan addresses the above objective:

Goal 4. The Land Use Plan will create a vision of future land use in the settlement area.

2.6 Summary

Many of these Guiding Principles and Goals are linked to a number of concepts from the MDBSLUP and the GCLCA. The only Guiding Principle or Goal not addressed in the previous discussion is Goal 5:

Goal 5. The Land Use Plan will identify the decision making process that produced the main components of the Plan.

This Goal has been included to ensure that it is clear to everyone concerned how, when and why land use decisions are made.

Section 3: The Land Use Regulatory Process

The purpose of this section is to illustrate the options the GILUPB is considering for integrating the Land Use Plan within the regulatory system. To achieve the goals and objectives of the Land Use Plan, the regulatory agencies must implement the Land Use Plan when they issue licenses, permits and authorizations. The MVRMA in Section 46 indicates clearly that all agencies must be in conformity with the Land Use Plan:

46 (1) The Gwich'in and Sahtu First Nations, departments and agencies of the federal and territorial governments and every body having authority under any federal or territorial law to issue licenses, permits or other authorization relating to the use of land or waters or the deposit of waste shall carry out their powers in accordance with any land use plan in effect in the settlement area.

The regulatory system governing land and water use in the GSA is complex. It involves many different agencies issuing licenses, permits and authorizations to regulate land, water and resources (Figure 8). Permits, licenses and authorizations are required for activities such as: forestry; research; sand and gravel extraction; tourism; mining; oil and gas development; and archaeological work. Many land and water uses require more than one authorization. For example, a commercial timber operation will require a timber harvesting permit from the Department of Resources, Wildlife and Economic Development (DRWED) and a land use permit from Gwich'in Land and Water Board (GLWB) if the operation involves heavy machinery, fuel caching etc.

To conform to the Land Use Plan, regulatory agencies must assess conformity before any decisions are made regarding land, water or resource use (see Figure 9). If the application **does not conform** with the Land Use Plan, the regulatory agency must reject the application. When an application **does conform** with the Land Use Plan, it will still have to be assessed within the normal regulatory system. Proponents of developments should understand that **conformity with the Land Use Plan does not mean that the application will be approved**, as the application may not meet the standard requirements for the authorization.

Figure 8: Regulatory Agencies and Authorizations

Legislation and Regulations	Regulatory Agency	Licenses, Permits, Authorizations, and Specific Activities
Mackenzie Valley Resource Management Act (MVRMA)	Gwich'in Land and Water Board	issuance, renewal, amendment of a permit or authorization for the use of land; water licenses
Mackenzie Valley Land Use Regulations (MVRMA) *replaces Territorial Land Use Regulations	Gwich'in Land and Water Board	Class A or B land use permits (land uses such as establishing camps, constructing access roads, drilling operations, heavy equipment use and establishing fuel caches)
<i>Federal Acts under the MVRMA</i>		
Northwest Territories Waters Act and Regulations	Mackenzie Valley Land and Water Board / Gwich'in Land & Water Board	issue, renewal, amendment or cancellation of a license to use water and deposit waste in connection with the operation of a development
Canada Oil and Gas Operations Act	National Energy Board	authorization for an activity related to the exploration for, or the production of oil and gas such as seismic operations, exploratory well, an oil and gas production facility or platform
National Energy Board Act	National Energy Board	1) direction for a company to divert or relocate a pipeline; 2) certificates issued for a pipeline or powerline; 3) orders to exempt pipeline owners from acquiring certificates for works related to pipelines such as reservoirs; 4) leave granted to: i) abandon a powerline or pipeline; ii) work or prospect for mines or minerals under or near a pipeline; iii)construct a facility or excavate across, on, along or under pipelines
Canada Environmental Protection Act (CEPA)	Environment Canada	suspension, revocation or variation of terms and conditions of a permit to dump a substance in Arctic waters
Federal Mobile PCB Treatment and Destruction Regulations (CEPA)	Environment Canada	authorization to operate a mobile PCB destruction or treatment system
Metal Mining Effluent Regulations (Fisheries Act)	Environment Canada	authorization of deposit of deleterious substances in tailing impoundments by an operator of a mine
Migratory Birds Regulations (Migratory Birds Convention Act)	Environment Canada	1)permits including scientific, avicultural, airport kill, taxidermist, migratory game bird hunting, killing or capturing; 2) consent issued to introduce a foreign species of migratory bird; 3) authorization to deposit for scientific purpose a harmful substance in any waters or area frequented by migratory birds
Wildlife Area Regulations (Canada Wildlife Act)	Environment Canada	permit to carry out a prohibited activity in a wilderness area (includes removing or damaging vegetation, removal of soil)
Fisheries Act	Department of Fisheries and Oceans	authorizations for the protection of fish habitat and site-specific regulations authorizing the deposit of deleterious substances
National Defense Act	Department of National Defense	authorization by the Minister of National Defense to approve the execution of military exercises or movements
National Parks Act	Heritage Canada	no national parks in the GSA currently

Legislation and Regulations	Regulatory Agency	Licenses, Permits, Authorizations, and Specific Activities
Canada Transportation Act	Transport Canada	1) agreement related to the construction or maintenance of a road or utility crossing; 2) authorization to construct or maintain a road or utility crossing
Navigable Waters Protection Act	Coast Guard (DFO)	1) approval of the plans and site for any work to be built or placed on, over, under, through or across a navigable waterway; 2) decision to remove or destroy a vessel from a navigable waterway
Northwest Territories Reindeer Regulations (Northwest Territories Act)	Department of Indian Affairs and Northern Development	license issued to a reindeer owner for a grazing allotment within a reserve
Radio Communication Act	Communications Canada	approval of sites on which radio apparatus may be located as well as erection of such things as towers and masts
Atomic Energy Control Regulations (Atomic Energy Control Act)	Natural Resources Canada	license to produce, mine, prospect for, refine, use or possess any prescribed substance (generally a substance capable of releasing atomic energy)
Uranium and Thorium Mining Regulations (Atomic Energy Control Act)	Natural Resources Canada	1) license to remove or excavate uranium or thorium; 2) license to site, construct or operate a uranium or thorium mine or mill
Territorial Dredging Regulations (Territorial Lands Act)	Department of Indian Affairs and Northern Development	timber agent may grant permit to cut timber necessary for dredging operation
<i>Northwest Territories Acts under MVRMA</i>		
Commissioner's Land Act	Municipal and Community Affairs	authorize the sale, lease or other disposition of the Commissioner's land (for a quarry or airport)
Forest Management Act	Department of Resources, Wildlife and Economic Development	forest management agreements with the government of a province or Yukon Territory, or body related to forest management
Forest Management Regulations (Forest Management Act)	Department of Resources, Wildlife and Economic Development	issuance of a permit or a license for activities related to i) timber cutting permits; ii) timber cutting licenses; and iii) milling
Forest Protection Act	Department of Resources, Wildlife and Economic Development	exempt any part of the Territories from a provision of this Act
Territorial Parks Act	Department of Resources, Wildlife and Economic Development	establishment of Natural Environment Recreation Parks, Outdoor Recreation Parks, Wayside Parks and Historic Parks
Transportation of Dangerous Goods Act	Department of Transportation	issuance of permits exempting the transportation of dangerous goods from the application of the Act
Wildlife Act	Department of Resources, Wildlife and Economic Development	1) designation of protected areas or critical wildlife areas; 2) declaration of any species of wildlife to be nuisance wildlife and the prescription of methods for controlling it
Wildlife Business License Regulations (under Wildlife Act)	Department of Resources, Wildlife and Economic Development	licenses associated with fur farms and game farms
Wildlife Licenses and Permits Regulations (Wildlife Act)	Department of Resources, Wildlife and Economic Development	issuance of a wildlife management permit, general wildlife permits, license to import wildlife and live vertebrates

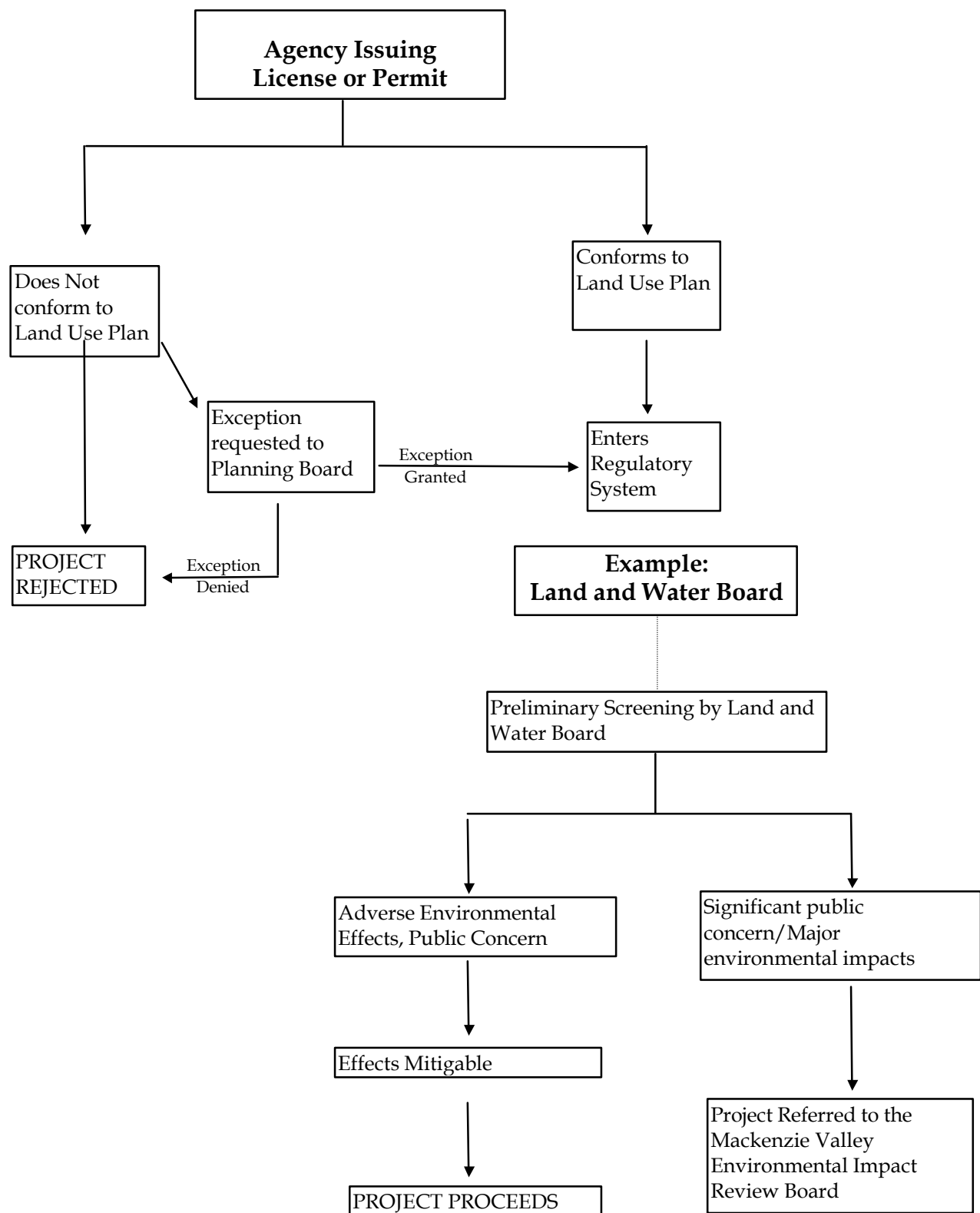
Legislation and Regulations	Regulatory Agency	Licenses, Permits, Authorizations, and Specific Activities
Pesticides Regulations (Pesticides Act)	Department of Resources, Wildlife and Economic Development	issuance of a pesticide application permit
Outfitters Regulations (Travel and Tourism Act)	Department of Resources, Wildlife and Economic Development	issuance of an outfitters license
Tourist establishment Regulations (Travel and Tourism Act)	Department of Resources, Wildlife and Economic Development	being reviewed
Public Utilities Act	Public Utilities Board	being reviewed
<i>Federal Acts not under the MVRMA</i>		
Canada Mining Regulations (Territorial Lands Act)	Department of Indian Affairs and Northern Development	1) prospecting licenses for staking and exploratory work; 2) prospecting permits for prospecting
Territorial Coal Regulations (Territorial Lands Act)	Department of Indian Affairs and Northern Development	three year exploration licenses
Territorial Quarrying Regulations (Territorial Lands Act)	Department of Indian Affairs and Northern Development	permits for quarrying sand, gravel, stone, topsoil and other materials
Territorial Land Regulations (Territorial Lands Act)	Department of Indian Affairs and Northern Development	authorizations for lease of land
Canada Petroleum Resources Act	Oil and Gas Directorate - Department of Indian Affairs and Northern Development	issuance of oil and gas rights from the crown
Public Lands Grants Act	Department of Indian Affairs and Northern Development	grants of public lands
Arctic Waters Pollution Prevention Act	Transport Canada	regulates development and shipping in arctic waters
Historic Sites and Monuments Act	Environment Canada	permits required to remove historical resources
Archaeological Sites Regulations (Northwest Territories Act)	Prince of Wales Northern Heritage Centre for DIAND	"permits for the excavation, removal or collection of archaeological specimens"
<i>Northwest Territories Acts not under MVRMA</i>		
Environment Protection Act	Department of Resources, Wildlife and Economic Development	provides environmental protection from contamination by hazardous substances
Historical Resources Act	Culture and Communications	protects historic and prehistoric remains
Scientists Act	Science Institute of the NWT	licenses all scientific research carried out in NWT
Public Highways Act	Department of Transportation	allows permission to construct an access road to/from a primary highway

If the application does not conform to the Land Use Plan, exceptions to the Plan will be possible for specific reasons, but will not be encouraged (see Section 5). When a regulatory agency is not sure whether a application is in compliance with the Land Use Plan, it should be forwarded to the GLUPB for a final decision (see Section 6).

In order for agencies to easily determine whether they are in conformity with the Land Use Plan, the Plan must clearly indicate what types of development can and can not occur throughout the settlement area. For this reason the GILUPB is considering using a land classification system that reflects the regulatory system (see Section 4). The land classification system should take into account all the authorizations that regulatory agencies issue.

To facilitate compliance with the Land Use Plan, a process will be recommended to regulatory agencies for evaluating conformity with the Land Use Plan when reviewing applications for permits, licenses and other authorizations. The role of the proponents in evaluating conformity with the Land Use Plan will have to be determined.

Figure 9: Conformity with the Land Use Plan



Section 4: Developing A Land Use Classification System for the GSA

The development of a land use classification system, and maps associated with it, are key elements of a land use plan. The land classification system sets out which land areas are available for various uses, and also designates areas where certain uses are not appropriate. A new land use classification system is required for the GSA because the system developed for the MDBSLUP proved to be unacceptable to government and industry (see section 4.2). In addition, there have been many changes associated with land and water management in the GSA since the late 1980's, when the MDBSLUP was developed.

The development of a new land classification system has been influenced by a number of factors, including:

- 1) the land use classification system developed in the MDBSLUP;
- 2) the objectives of the GCLCA;
- 3) the portions of the MVRMA that reference the work of the GLUPB;
- 4) the mandates associated with the agencies which will be responsible for approving and implementing the Land Use Plan;
- 5) the nature of the resources of the GSA, and;
- 6) the values of the GSA land users.

4.1 A Review of the Land Use Classification System Developed for the Mackenzie Delta Beaufort Sea Land Use Plan

The following is a presentation of the major ideas included in the MDBSLUP land use classification system.

The MDBSLUP supports establishing a system of protected areas. The MDBSLUP states:

since the early 1970's, several interests have recommended the establishment of a comprehensive system of protected areas in the Canadian north: the Government of Canada (Department of Indian and Northern Affairs 1972); the Mackenzie Valley Pipeline Inquiry (Berger 1977); the Task Force on Northern Conservation (1984); and the Government of the Northwest Territories (1990).

The vision of the MDBSLUP is to protect areas in a variety of ways “ranging from strictly protected areas to areas where conservation is assured by the system of land classification”. The MDBSLUP places an emphasis on having the communities play a major role in the decision

making. The MDBSLUP states that by having the communities select a system of land management categories which offers certain areas protection from development:

the people of the region are making an economic as well as a cultural decision. These areas are of economic value because they enable the subsistence harvest to continue. They also provide a form of insurance that there are alternatives to sole reliance on the wage economy. The communities are unwilling to place these areas at risk because of a concern about having to rely on less sustainable wage employment.

Based on community input the second objective of the MDBSLUP is:

to recommend a land classification system that will contribute to conservation of important resource areas without necessarily formal legal designation....[and emphasizing]that their intent is not to foreclose economic development in the region. Rather, classifying the lands defines the conditions under which conservation and utilization can be assured.

The MDBSLUP recommends the following land use classifications from A to E (with Category E being the most restrictive):

Category A - Lands where there are no known significant and sensitive cultural or renewable resources. Lands shall be managed according to current regulatory practices.

Category B - Lands where there are cultural or renewable resources of some significance and sensitivity, but where terms and conditions associated with permits and leases shall assure the conservation of these resources.

Category C - Lands where cultural or renewable resources are of particular significance and sensitivity during specific times of the year. These lands shall be managed so as to guarantee the conservation of the resources.

Category D - Lands where cultural or renewable resources are of particular significance and sensitivity throughout the year. As with Category C lands, these lands shall be managed so as to guarantee the conservation of the resources.

Category E - Lands where cultural or renewable resources are of extreme significance and sensitivity. There shall be no development on these lands. These lands shall be managed to guarantee absolutely no damage or disruption. This category offers the highest degree of protection, short of legal designation.

4.2 Critique of MDBSLUP's Land Use Classification System

The land classification system developed for the MDBSLUP has several positive aspects that are worth considering in developing a land classification for the GSA. MDBSLUP's system

is based primarily on community areas of interest and reflects the community's vision of resource protection for areas they use. The MDBSLUP system recognizes the northern reality that land use is seasonal, and acknowledges that there are periods when certain land uses are appropriate and periods when they are not. The MDBSLUP's system, therefore, is effective in that it matches the human and natural landscape of the region and makes the system flexible and less restrictive.

Several problems have also been identified with this classification system. The major problem was that the land use plan did not indicate where development could occur. Critics of the land use plan claimed that there was not a balance between protection of areas and development. The land use classification system was also developed late in the process, allowing little time for suggested changes to be incorporated. Another problem was that the classification system was not applied in a mutually exclusive manner. Therefore, in many instances land areas were placed in two or more categories. Furthermore, the classification system used vague phrasing and definitions for what constituted specific land use and land use practice. For example, it was never made clear what criteria was used to determine if a resource had "*some significance*" or was "*particularly significant*" or "*extremely significant*". This raised concerns about whether the land use classification system was being applied consistently throughout the region.

Another problem included the fact that the land use plan was being produced at the same time as the Gwich'in were trying to settle their land claim. Without a settled land claim, community representatives viewed the land use plan as a means of protecting land and water resources.

Very large areas were designated for protection within the area that is now the GSA in the MDBSLUP. The designation of these large areas were not defended with proper documentation and could not withstand detailed scrutiny.

4.3 A Proposed Land Classification System for the GSA

An effective land use plan should provide guidance as to what land uses are appropriate and what land uses are not appropriate in specific areas. The Land Use Plan for the GSA should provide a balance between protecting significant areas from impacts of development and leaving other areas free for development. The GCLCA in Section 24.2.4 (d) states:

the plan developed through the planning process shall provide for the conservation, development and utilization of land, resources and waters.

To meet the requirement “to provide for the conservation, development and utilization of land, resources and water”, the GILUPB is proposing the following five land classifications (or zones) for the GSA:

- 1) Year Round Protected Areas;**
- 2) Seasonally Protected Areas;**
- 3) Commercial Non-Renewable Resource Development Areas;**
- 4) Commercial Renewable Resource Development Areas; and**
- 5) Public Development Areas.**

This proposed land classification system follows the GCLCA’s rights structure. In the GCLCA, rights regarding land uses are generally divided by traditional use, commercial use and the rights of government.

The following subsections discuss:

- conservation of land, water and resources through the identification of protected areas; and
- development and utilization of land, water and resources through the identification of areas that are best suited for use.

4.3.1 Conservation and Identification of Protected Areas

To meet the need for *conservation*, the GILUPB proposes to identify areas in the GSA requiring protection on: 1) a year round basis, and 2) a seasonal basis. These areas will protect land, water and resources that have been identified as requiring special management measures to conserve natural, aesthetic, cultural, historic, archaeological or scientific values.

Within the proposed land classification system there are two categories for protected areas. The following are the two zones and their definitions:

Year Round Protected Areas:

- areas containing land, water and resources requiring protection on a year round basis for biological or scientific reasons; and
- areas containing land, water and resources identified by the Gwich'in as being crucial, on a year round basis, to the maintenance of Gwich'in traditional activities or cultural heritage.

Seasonally Protected Areas:

- areas containing land, water and resources requiring protection seasonally for biological or scientific reasons; and
- areas containing land, water and resources identified by the Gwich'in as being crucial, seasonally, to the maintenance of Gwich'in traditional activities or cultural heritage.

Protected areas will be identified by bringing together traditional knowledge and scientific knowledge. In the case of traditional knowledge, the GILUPB has begun to collect information on areas that the Gwich'in communities (Fort McPherson, Tsiigehtchic, Aklavik and Inuvik) would like to see protected to meet their needs. In a preliminary step, Gwich'in communities outlined areas for protection on the basis of traditional use and traditional environmental knowledge. This information is now being put into a data base and draft maps will be produced for the Gwich'in communities to review and modify if needed. In addition, traditional knowledge collected through other projects will be considered including the work of: 1) MDBSLUP; 2) GRRB's and GLWB's Traditional Environmental Knowledge project; 3) GRRB's Harvest Study; and 4) Gwich'in Social and Cultural Institute's projects.

On a scientific basis, the GILUPB has not yet developed a comprehensive list of proposed protected areas. However, preliminary work has been completed through the production of a GSA Inventory and Assessment Report on Wildlife (Mammals, Birds and Fish) and the analysis of other scientific studies in the GSA. On the basis of this information, the GILUPB suggests that protected areas should include:

- endangered, threatened or vulnerable species' habitat, breeding and nesting sites or migration routes;

- breeding, nesting and spawning sites, migration routes, staging areas and critical habitat of other species;
- ecologically significant areas which could include significant stream and river channels, lakes, wetlands, flood plains, headwater areas, areas of high biodiversity, etc.;
- unique or significant features including land forms, sites of rare vegetation or areas of scientific interest;
- culturally significant sites, including archaeological sites, historical sites and current traditional sites (including camps, cabins, burial grounds, trails, meeting places, trading posts, forts or caribou corrals).

It is expected that there will be high correlation between areas identified for protection by the Gwich'in communities and areas that are scientifically significant. The integration of information from both traditional knowledge and scientific knowledge will be the basis for the final list of protected areas for the GSA. In addition, the GILUPB will be making recommendations regarding possible opportunities to protect some of these areas through other legislative means.

4.3.2 Development and Utilization of Land, Water and Resources

The requirement for the *development and utilization of land, resources and water* is reflected in the land classification system. There are three categories in the land use classification system that specifically address development and use of resources. The three categories and their definitions are:

Commercial Non-Renewable Resource Development Areas:

- areas deemed appropriate for private interests to develop non-renewable resources.

Land uses in these areas could include: oil and gas, mining, private sand, gravel and rock crush pits, and private roads.

Commercial Renewable Resource Development Areas:

- areas deemed appropriate to allow private interest to develop renewable resources.

Land uses in these areas could include: commercial fisheries, commercial forestry and tourism, such as sport hunting.

Public Development Areas:

- areas deemed appropriate for government developments. Land uses in these areas could include transportation and communication facilities, military activities, waste sites and government projects.

To plan and zone for future development activities, current and possible development activities must be examined. Land and water uses presently occurring in the GSA will be placed in an appropriate land classification in the Land Use Plan, unless the use is deemed to contradict the objectives for land use in the GSA.

The GILUPB has collected information on renewable and non-renewable resources in the GSA that will facilitate the process of identifying development zones. Information that has been collected includes locations of resources as well as details on the quality and abundance of those resources. To identify development zones in the GSA, the GILUPB will consult with the communities, government and industry representatives. The products of this consultation should be: 1) an adequate information base on resources in the GSA for land use planning; and 2) a list of priority areas for development in the GSA.

The GILUPB will focus on planning for land use sectors that have a high probability of occurring during the life of the Land Use Plan, such as sand and gravel extraction and tourism. However, the long term resource development potential of the GSA for activities such as mining as well as oil and gas will be taken into consideration.

4.4 Applying the Land Use Classification System

For each land classification, the GILUPB will identify land and water uses that are **allowed** and land and water uses that are **not allowed**. All of the GSA will be placed in one of the land classification zones. In some cases, certain areas in the GSA will not fall perfectly into one of the land classification zones. In these cases, the areas will be placed in the most appropriate zone and exceptions to what is normally allowed clearly stated. This will make the application of the system more flexible.

The proposed strategy for allowing and not allowing land and water uses within each of the land classification zones is illustrated in Figure 10 and discussed below using the examples of: 1) placer mining, and 2) non-consumptive tourism.

Example #1 Placer Mining

Placer Mining refers to the extraction of gold through the removal of top layers of land surface, usually from river beds. Placer mining would not likely be allowed in the areas classified for: Year Round Protection, Seasonal Protection, or Commercial Renewable Resource Development. This type of mining would not be compatible with a Year Round Protection zone or with a Seasonal Protection zone. In the case of seasonal protection, where typically a wildlife species requires special protection for a portion of the year, such as with fish during their spawning period, placer mining would not be allowed during that sensitive time period. Outside of that time period, placer mining would only be allowed if it did not jeopardize the ability of the fish to spawn in that area the next year. With respect to Commercial Renewable Resource Development Areas, placer mining would not be allowed in this zone as these areas are dedicated to renewable resource opportunities.

Placer mining would be allowed in Commercial Non Renewable Development Areas as these areas are dedicated to the use of non-renewable resources. In addition, placer mining would likely be allowed in Public Development Areas under certain conditions.

Example #2 Non-consumptive Tourism

Non-consumptive tourism refers to recreational activities that do not use resources in any substantial way such as hiking, canoeing, or bird watching. These types of activities could likely take place in all zones. Although in some cases there may be some conditions or restrictions applied. For example, there may be restrictions on hiking in areas where endangered birds nest during the time that they are nesting.

Figure 10: Proposed Land Classification System and Implementation Examples

Land Use Sector	Specific Land Use Activity	Year Round Protection Areas	Seasonal Protection Areas		Commercial Renewable Resource Development Areas	Commercial Non-Renewable Resource Areas	Commercial Non-Renewable Resource Development Areas	Public Development Areas
			in season	off season				
Oil and Gas	Seismic Line Development					allowed		
	Exploratory Drilling					allowed		
	Production Drilling/Rigs					allowed		
	Pipeline Construction					allowed		
	Tanker Traffic					allowed		
	Production Facilities (Pump stations, compressor stations, etc.)					allowed		
	Rehabilitation of Site					allowed		
Mining	Ground Prospecting					allowed		
	Exploratory Drilling/Trenching					allowed		
	Open Pit Mining					allowed		
	Underground Mining					allowed		
	Placer Mining	not allowed	not allowed	not allowed	not allowed	allowed	allowed	allowed*
	Rehabilitation of Site					allowed		
Sand, Gravel and Rock Crushing	Test Pits					allowed		
	Pit Development and Extraction					allowed		
	Rehabilitation of Site					allowed		
Hydroelectric Development	Camps, Infrastructure					allowed		
Forestry	Camps, Mills					allowed		
Commercial Fisheries	Camps, Harvesting Area					allowed		
<u>Tourism:</u> consumptive non-consumptive	Sport hunting and fishing					allowed		
	Boating, Docking, Camps, Trails	allowed*	allowed*	allowed	allowed	allowed	allowed	allowed*
Waste Sites	Liquid Waste Dumping					allowed		
	Solid Waste					allowed		
	Tailing ponds					allowed		
	Drilling mud					allowed		

Land Use Sector	Specific Land Use Activity	Year Round Protection Areas	Seasonal Protection Areas		Commercial Renewable Resource Development Areas	Commercial Non-Renewable Resource Areas	Commercial Non-Renewable Resource Development Areas	Public Development Areas
			in season	off season				
Transportation Roadways	Surveying							
	Clearing							
	Road Bed Construction							
	Culvert/Drainage/Bridge							
	Road top packing							
	Paving							
	Culvert Replacement							
Trail	Surveying							
	Clearing							
	Surfacing							
Marine	Siting of aids to navigation							
	Dredging							
	Mooring Sites							
	Dock development							
	Fuel Storage Areas							
Airstrip	Surveying and Clearing							
	Airstrip Development							
	Fuel Storage Areas							
	Navigation Support Aids							
Military	Camps							
	Search and Rescue Training							
	Reconnaissance and troop maneuvers							
	Low level flights							
	High level flights							
NOTES: 1. Italics indicate Land Use Occurring or Predicted to Occur over the Life of the Plan 2. allowed* indicates a use likely to have restrictions or conditions associated with it when occurring in the zone.								

Based on the Goals and Guiding Principles, three general guidelines will be considered when deciding what uses are allowed or not allowed in each land use classification:

Land Use Impacts On Resources:

GILUPB recognizes that all land uses have some impact on land, water, natural and cultural resources. The GILUPB will produce a list of resources that need protecting for the GSA. Resources significant to the maintenance of the environment and Gwich'in culture will be given priority for protection.

Social, Economic and Cultural Considerations:

GILUPB recognizes that all land uses have social, economic and cultural impacts. GILUPB will produce a list of areas where land use activities are encouraged for social, economic and cultural benefits.

Compatibility of Land Uses:

GILUPB recognizes that many land uses have the potential to conflict with each other. In evaluating the appropriateness of a land use in a given area, the relationship of land uses with existing and future land uses will be considered.

Assessing compatibility between land uses will be required. In instances where there is more than one resource development opportunity for an area, the GILUPB will have to analyze whether the development of all the resources simultaneously is feasible. In the event of a land use conflict, the GILUPB will consult with the groups involved, and look at the goals and guiding principles of the Land Use Plan to help make its decision. The reasons for the decisions will be documented in the Land Use Plan.

In making decisions regarding land use conflicts, the following evaluation criteria will be considered:

1. Priority will be given to proposed development activities that will have the least environment and social negative effects, and which compliment Gwich'in traditional lifestyle.
2. Priority will be given to proposed development activities that make use of skills and knowledge found within the GSA or that require skills and knowledge that can be easily transferred to people within the GSA.
3. Priority will be given to proposed development activities that create the greatest long term employment opportunities in the GSA.

These criteria will be further developed through the consultation process and presented in full in the Draft Land Use Plan.

Section 5: Amendments and Exceptions to the Land Use Plan

5.1 Amendments to the Land Use Plan

Amendments are used to make long term changes to the Land Use Plan. For an amendment, the GILUPB must consult with all interested groups, as well as get final approval from the GTC, and the Federal and Territorial governments. An individual or agency can ask for an amendment to the Land Use Plan through an application to the GLUPB. The GLUPB can suggest amendments to the Land Use Plan at any time, however amendments are most likely to occur as a result of a five year review of the Land Use Plan (see Section 6).

There may be various reasons why the GILUPB may consider amending the Land Use Plan. Below is a list of possible reasons why the Land Use Plan may need to be amended.

Possible Reasons for Considering Amendments to the Plan:

- to reflect changes in resource information;
- to correct a flaw or problem with the Land Use Plan;
- to accommodate an unconsidered land use in the GSA;
- to reflect input and updates given at the time of the Review of Land Use Plan; and
- to reflect changes in the values of land and water users of the GSA.

5.2 Exceptions to the Land Use Plan

Exceptions to the Land Use Plan will be used to allow a use that is not in conformity with the Land Use Plan. An exception would only be granted if the proposed land or water use is in keeping with the intention and spirit of the Land Use Plan. Exceptions could be used: for emergency situations (military, human catastrophe etc.); to reflect changes in resource information; and to accommodate an unconsidered land use in the GSA, that is only expected to occur once.

An exception to the Land Use Plan does not guarantee that the proposed activity will meet all other regulatory standards.

The MVRMA requires that a process for granting exceptions be laid out in the Land Use Plan. The following are alternatives for: 1. the exception process; and 2. criteria for allowing exceptions.

1. Exception Process

Presented below are two options for an exception process. In both cases it is assumed that an application for an authorization has been rejected because the proposed activity does not conform with the Land Use Plan:

Option 1: Regulatory Agency Forwards Exception Application to GLUPB

- Agency rejecting the application examines whether the proposed activity should be allowed as an exception to the Land Use Plan based on the GLUPB's criteria for exceptions;
- If the agency believes an exception is reasonable, they forward the application to the GLUPB for review for an exception;
- GLUPB will then make a decision to issue or deny an exception and informs the agency;
- Agency informs the proponent of the decision.

Option 2: Proponent Applies to GLUPB for an Exception

- Proponent is given information on the exception process and the choice of applying to the GLUPB for an exception;
- Proponent applies for an exception directly to the GLUPB;
- GLUPB will then make a decision to issue or deny an exception and informs the proponent as well as the agency.

2. Possible Criteria for Allowing Exceptions

An exception would be allowed if the land or water use:

- is in keeping with the goals, principles and objectives of the Land Use Plan;
- does not interfere with the rights of the Gwich'in to use the land and water resources as laid out in GCLCA;
- does not conflict with current or future land, water and resource uses; and
- does not jeopardize the integrity of areas designated for protection.

Section 6: Land Use Plan Implementation and Review

Once the Land Use Plan is in place the GLUPB is responsible for monitoring the implementation of the Land Use Plan and for carrying out a Comprehensive Review of the Land Use Plan every five years. Monitoring the implementation of the Land Use Plan throughout the five years should provide a basis for a Comprehensive Review. The Comprehensive Review should analyze the effectiveness of the Land Use Plan in meeting its goals and objectives, and should evaluate whether the actions that were recommended in the Land Use Plan were accomplished.

6.1 Monitoring the Implementation of the Land Use Plan

The main tool that will be used for monitoring the implementation of the Land Use Plan will be the Implementation Plan. The Implementation Plan will list recommended actions from the Land Use Plan and outline which agencies are responsible for implementing them. The GLUPB will have four main responsibilities with respect to implementation:

- 1) Insure Compliance with the Land Use Plan;
- 2) Update and Gather Information;
- 3) Prepare and Conduct Comprehensive Reviews of the Land Use Plan; and
- 4) Prepare Amendments for the Land Use Plan.

1) Insure Compliance with the Land Use Plan

GLUPB will “insure that all land and water use authorizations are in compliance with the plan” (Implementation Plan of GCLCA). To do this GLUPB will have to coordinate their efforts with those regulatory agencies issuing licenses, permits and other authorizations. In Section 47 (1) of the MVRMA, the relationship between the GLUPB and regulatory agencies is addressed:

A planning board shall determine whether an activity is in accordance with the land use plan where

(a) the activity is referred to the planning board by a first nation or a department or agency of the federal or territorial government or by the body having authority under any federal or territorial law to issue a license, permit or other authorization in respect of the activity; or

(b) an application for such a determination is made by any person directly affected by an activity for which an application has been made for a license, permit or authorization.

Regulatory agencies must be in compliance with the Land Use Plan, however, they can choose when to refer an application to the GLUPB for a decision on conformity. The GLUPB expects that when a regulatory agency is unsure about whether an activity is in compliance with the Land Use Plan that it will refer the application to the GLUPB. Also, to facilitate the implementation of the Land Use Plan, the GLUPB should be on a general circulation list for all applications for licenses, permits and authorizations in the GSA. With this information the GLUPB could flag applications that appear not to be in conformity with the Land Use Plan for the regulatory agencies.

2) Update and Gather Information

Many of the recommendations in the Implementation Plan will require other agencies to provide support or information for updating the Land Use Plan. The GLUPB will help promote actions, collect and integrate information as it is received, and evaluate the need for amendments. An example would be forestry inventory information that will be collected during the five year life of the Land Use Plan. This new information may require some adjustments to the Land Use Plan. If an adjustment is needed immediately, an amendment can be put forth by the GLUPB. However, due to the involved process for approving amendments, the majority of amendments will likely be put forth at one time during the Comprehensive Review of the Land Use Plan.

3) Prepare and Conduct a Comprehensive Reviews of the Land Use Plan

Comprehensive Reviews of the Land Use Plan will assess whether the Land Use Plan is meeting its goals. Goals in this instance refers to the list of Goals for the Land Use Plan, as well as recommended implementation actions.

To conduct a Comprehensive Review, an evaluation process is needed that combines public participation with a systematic assessment process. The Gwich'in, and all other residents of the GSA, should have the opportunity to give their opinion on the success or failure of the Land Use Plan to meet their needs. Through public consultation, the GLUPB should acquire an understanding about whether the goals are being met and if the goals are still valid, as well as information on new planning issues. However the public consultation process alone will not be

enough to judge the strengths or weaknesses of the Land Use Plan. For example, how can we assess whether Goal 1 of the Land Use Plan which states that the “*Land Use Plan will protect the land, water, air and resources key to the maintenance of the GSA’s ecosystems upon which all people depend*”, is being met? A systematic assessment process is needed.

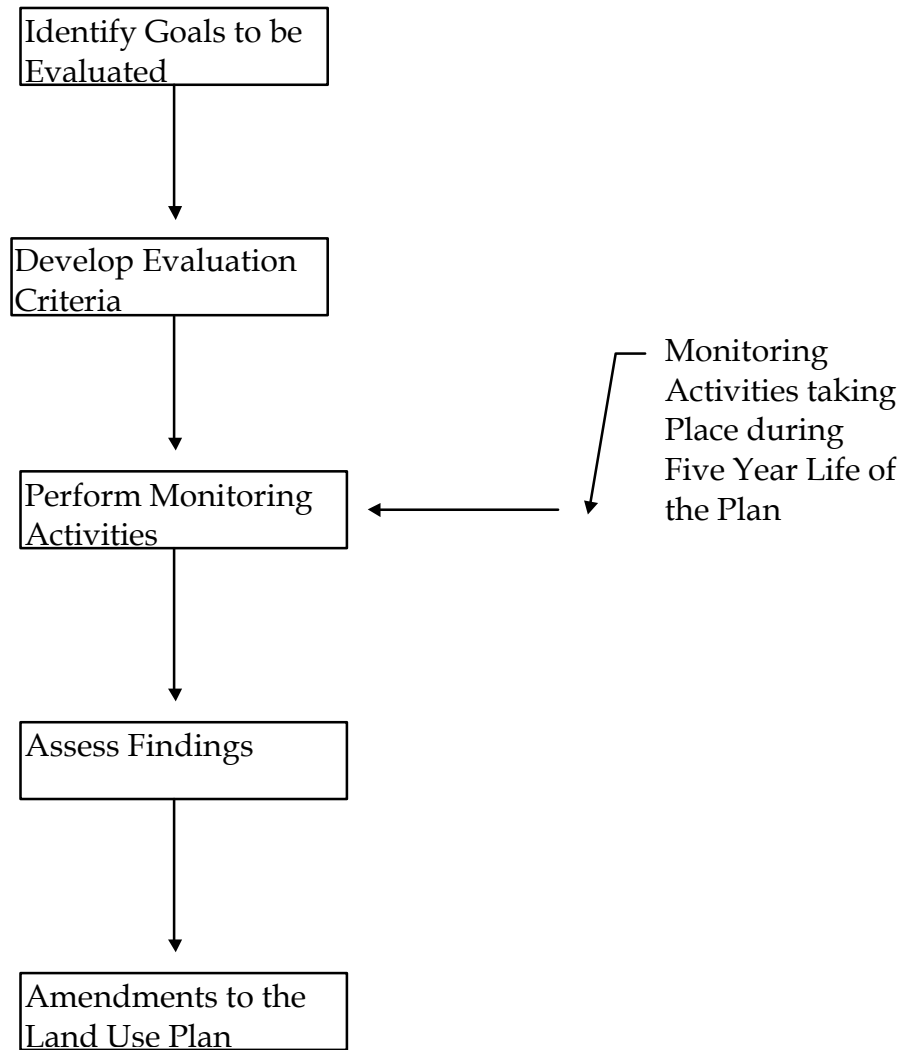
Developing a systematic assessment process will be part of the preparation for a Comprehensive Review. The following steps are suggested in preparation for a Review: 1) identify goals to be evaluated; 2) develop evaluation criteria; and 3) perform monitoring activities. The identification of goals to be evaluated in the Comprehensive Review and their evaluation criteria should be incorporated into the Land Use Plan. Continuing with the example of Goal 1, possible evaluation criteria for Goal 1 could be water quality for various lakes, or the status of wildlife populations in a certain area. One limiting factor in choosing evaluation criteria is that base line data is needed on the resource value being measured to be able to make valid comparisons between its past state and present state. The development of evaluation criteria for goals of the Land Use Plan will be one of the tasks for the GSA Land Use Planning Workshop. Once the evaluation criteria have been established it is possible to develop a monitoring strategy for the five year life of the Land Use Plan that addresses information needs for the Comprehensive Review. During the Comprehensive Review, the information gathered throughout the five years will be assessed.

In the future, there will be a Cumulative Environmental Assessment and Monitoring program developed for the GSA and the Mackenzie Valley. This program will be developed through the Integrated Resource Management initiative in the GSA and will play an important role in shaping the evaluation and monitoring strategy for the Land Use Plan.

4) Prepare Amendments for the Land Use Plan

As a result of the Comprehensive Review changes to the Land Use Plan may be needed. The GLUPB can prepare amendments to the Land Use Plan to address issues raised during the Comprehensive Review. The GLUPB would table the amendments and they would have to be approved by the GTC and Federal and Territorial Governments. Figure 11 depicts the Comprehensive Review Process that may result in amendments.

Figure 11 Comprehensive Review Process



Section 7: Land Use Sector Issues and Options

7.1 Introduction

The GILUPB has produced an Inventory and Assessment Report for each major land use sector and resource area in the GSA: forestry, water, wildlife, tourism and recreation, sand and gravel, oil and gas, minerals, transportation, waste sites and military activities. The only resource area not yet covered in the report series is culturally significant sites. The intent of producing the Inventory Assessment Reports was to provide the Board and its staff with a basic understanding of the land use sectors and land use issues in the GSA. These reports are the *start* of the process for developing major land use sector recommendations in the Land Use Plan. A GSA Land Use Planning Workshop and continued consultation with stakeholders will facilitate the development of recommendations.

The following sub-sections describe land use sectors, and outline issues that need to be addressed in the Land Use Plan. Descriptions and issues outlined in the subsections are adapted from the Inventory and Assessment Reports. The issues list presented is incomplete. Any suggestions on the part of users and managers for additions or changes is welcomed. In particular what is needed are: 1) comments on information gaps and how they can be filled; and 2) comments on instances where GILUPB can coordinate and integrate their efforts with other agencies and groups.

The land use sectors have been divided into four subcategories: Renewable Resources, Non-Renewable Resources, Public Development and Culturally Significant Sites.

7.2 Renewable Resources

The following are descriptions and issues related to renewable resource land uses including: forestry, water, wildlife, as well as tourism and recreation.

7.2.1 Forestry

There is presently no overall estimate of the forest area or forest productivity in the GSA. Productive forest stands are sporadic and generally located along banks of the Peel, Arctic Red, and Mackenzie Rivers, and are dominated by white and black spruce. White spruce in the area can grow as large as one metre across, 25 metres high and survive to ages of 500-700 years.

Rotation age for stands in the Fort McPherson area is estimated to be 275 years. Black spruce are generally smaller than white spruce, but both provide good quality lumber. Common species in the GSA include: white spruce, black spruce, white birch, and poplar. Common understorey species include alder and willow species.

The forests play a crucial role in the environment as they: 1) provide habitat for wildlife species particularly fur bearing animals; 2) enhance water quality; and 3) stabilize water quantity. Forests provide shelter for camps and cabins, as well as being important traditional areas for the Gwich'in. Gwich'in have long relied on the forest resources in the settlement area for essential materials. Uses include fuel for fires, material for houses, cabins, boats, toboggans and snowshoes, as well as for medicinal and food purposes.

The main agencies responsible for forest management in the GSA are the GRRB, DRWED and GLA. They have the main responsibility for developing a Forest Management Plan. The GRRB has the power to establish policies and propose regulations in respect to the commercial harvesting of trees and the harvesting of trees by any individual. The GRRB can also approve forest conservation and forest management plans and policies within the settlement area. DRWED's main role is to administer forestry legislation and regulations in the GSA.

It is expected that in the next five years that cutting will continue in the areas which are currently being used. One of the main concerns with forestry is balancing cutting with environmental and social considerations. There are four types of issues related to continued cutting: 1) dealing with environmental concerns; 2) meeting social-cultural needs; 3) coordinating between agencies; and 4) information and research needs.

Environmental Issues

- Recognize that forests play an important role in ensuring overall environmental integrity through their roles in soil stabilization, air purification, and the hydrological cycle, including water quality and quantity.
- Recognize that forests provide important habitat for many wildlife species.
- Take into consideration that forests in the GSA are slow-growing and vegetation is susceptible to disturbance.

- Need to consider whether the classification of forests as a renewable resource is justified as the rotation age in the GSA is very high (e.g. 275 years for white spruce).
- Need to consider that global warming may be contributing to increased forest fires and make trees susceptible to disease.

Socio-Cultural Issues

- Recognize that forests are important for:
 - a) subsistence activities including wood for fuel, building materials, and areas for traplines;
 - b) recreation and tourism; and
 - c) medicinal and food purposes.
- Recognize that forests are important to humans for their visual aesthetics, as wind breaks around cabins and camps, for recreational purposes, for Gwich'in socio-cultural interest, and spiritually.
- Take into account the recommendation by the Incorporated Settlement of Tsiigehtchic that the Jack Fish Creek area be made a Territorial Park partially to protect the white spruce forests area;

Coordination between Agencies

- Need to work with the GRRB on developing common goals and principles for forest use for the Land Use Plan and the Forest Management Plan.
- Recognize that allocation of forest areas for commercial cutting is not appropriate at this time as forestry information being collected for the GRRB's Forest Management Plan does not yet indicate that commercial forestry is viable in the GSA.
- When forestry allocations are being considered, the process should involve GRRB, Renewable Resource Councils (RRCs), GLA, DRWED and GLUPB.

Information and Research Needs

- Recognize that there are serious information gaps including:
 - a) the level of cutting that has occurred in the GSA;
 - b) vegetation mapping;
 - c) amount of forest needed for subsistence use;
 - d) information on soils;
 - e) information on other types of vegetation removal; and
 - f) information on plant harvests (e.g. berry picking).

7.2.2 Water Resources

The GSA is within the Mackenzie River Basin, which encompasses portions of Saskatchewan, Alberta, British Columbia, the Yukon and the Northwest Territories. The GSA is downstream to all the rest of the river basin with the exception of the Inuvialuit Settlement Region. The three main river channels in the GSA are the Mackenzie River, Peel River and Arctic Red River. There are also a number of smaller significant rivers such as the Rat River, Rengling River, Miner River, Kugaluk River, and Carnwath River. Other significant water related features in the GSA include the Mackenzie Delta, groundwater areas, and headwater areas.

The main uses of water currently within GSA boundaries are for industrial, transportation, and forest fire control purposes, as well as for human consumption and use. Water is an integral part of Gwich'in culture. It serves as a travel route, during the summer, and during the winter as a natural highway. Water is also vital in the life cycle of many wildlife and fish species that the Gwich'in rely on.

For the next five years, it is expected that the current uses of water will continue with no new emerging uses expected in the GSA.

Within the GSA, the GLWB will be the authority issuing water licenses. The Mackenzie Valley Land and Water Board will deal with transboundary water issues.

There are two main types of water issues identified:

- 1) water resources issues related to the Mackenzie River Basin as a whole; and
- 2) water resource information and monitoring needs in the GSA.

Mackenzie River Basin Issues

- A need for land and water use decision makers throughout the Mackenzie River Basin to take into consideration the effects of land uses activities on downstream areas and users.
- A coordinated system is needed in the GSA to monitor land use decisions throughout the Mackenzie River Basin.
- A Water Management Agreement is needed, between the three provinces and two territories, in the Mackenzie River Basin.
- International agreements are needed that work towards the elimination of long range aerial pollutants.

Information and Monitoring Issues:

- Information needs include:
 - 1) the collection or compilation of baseline data on water quality to establish what contaminants already exist in the water system, what levels are acceptable and what guidelines and strategies are needed to ensure the health of residents and the protection of water, fish and wildlife resources;
 - 2) water quantity measurements to ensure water levels are adequate; and
 - 3) additional research on fish populations and furbearers that rely on GSA water resources and habitats.
- Communities have identified a need to have their water systems monitored locally for levels of contaminants, drinking water quality, and overall health of the water system.

7.2.3 Wildlife

In the GSA, there are a diverse number of habitats able to sustain both resident species and seasonal migrant mammal, bird and fish species. Wildlife is very important to the Gwich'in. Gwich'in depend on a variety of wildlife for hunting, fishing and trapping. In addition, wildlife play a significant role in Gwich'in cultural heritage.

Since the signing of the GCLCA, few wildlife management issues have warranted critical attention. Population growth and resource development interests in the GSA have remained low and, as such, have not subjected wildlife resources to immediate threat. Most of the current issues affecting wildlife resources are being addressed through a variety of research projects and management plans on mammals, birds and fish.

The management of wildlife resources in the GSA is the responsibility of the GRRB and the RRCs. Wildlife responsibilities of the Government of Canada are administered by DIAND, DFO and Environment Canada. The GNWT manages wildlife resources through DRWED.

The following discussion on wildlife is subdivided into the categories of mammals, birds and fish.

MAMMALS

Approximately thirty-eight species of mammals are known to occur in the GSA, many of which are at the northern extreme of their range in North America. Each of these species have specific habitat requirements and many have evolved unique behavioral traits needed for survival in this environment. This has produced conservation issues specific to each species. Furthermore, each of these species can tolerate human disturbance to varying degrees.

Three mammal species found in the GSA (grizzly bear, wolverine and woodland caribou) are listed as being *vulnerable* by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Very little information is available on the status of these species in the GSA, and research has only been conducted on grizzly bears.

There are two main types of issues identified for mammals:

- 1) integration and review of information; and
- 2) need for additional research or initiatives.

Integrate and Review of Information

- A need to integrate information from the Inventory and Assessment Report on Wildlife with additional information from the GRRB, other scientific wildlife research sources, and traditional environmental knowledge sources in a Geographic Information System (GIS) as soon as possible.
- A need to review GRRB Grizzly Bear Management Plan (and any other GRRB mammal management plan) upon completion and have concerns addressed in the Land Use Plan.
- A need to review the GNWT-DRWED Bluenose Caribou Herd Management Plan upon completion and have it addressed in the Land Use Plan.

Additional Research or Initiatives

- Need for habitat mapping in the GSA.
- Need for monitoring of mammal populations and habitat as conditions of development activities.
- Need to review or acquire the information for mapping of:
 - i) traditional traplines in the GSA;
 - ii) camps actively used for the subsistence harvest of mammals;
 - iii) other important harvest areas; and
 - iv) critical habitat for mammals in the Delta.
- A need for population status reports on COSEWIC listed species: woodland caribou, wolverine and grizzly bear.
- A need for furbearer population information and/or monitoring program.

BIRDS

Approximately one hundred and fifty-one species of birds are known to inhabit the GSA. The majority of these species are migratory and many are rare to the GSA. Only 18 species are resident in the GSA, and this number is likely to fluctuate depending upon winter conditions.

Critical habitat needs for birds include nesting/rearing sites and feeding areas. Additional habitat critical to some species include staging and moulting sites. Staging and feeding areas are used intensively in preparation for migration. Certain species moult, or shed feathers required for flight, and remain flightless until new feathers grow in place. Their vulnerability at this time makes habitat critical.

Only two bird species, found in the GSA, are on the COSEWIC list for endangered, threatened or vulnerable species in Canada: peregrine falcon (anatum subspecies - endangered) and the short-eared owl (threatened).

The one main type of issue identified for birds is the need for additional information through research or new initiatives.

Additional Research or Initiatives

- A need for research into the habitat use, density and distribution of short-eared owls in the GSA.
- A need for the monitoring of peregrine falcon populations in the GSA.
- Consider a buffer around Gwich'in Territorial Park which would place limits on development activities. This is intended to enhance the conservation efforts afforded to peregrine falcons by the creation of the Park.
- A need for information and a monitoring program on waterfowl populations and waterfowl harvest areas used by hunters.
- A need for information on river-based transportation. Levels of use, types of traffic, and location of lanes are examples of useful information. Comparisons with habitat use and harvest patterns can then be made.

FISH

Approximately thirty-two species of fish are known to inhabit the waters of the GSA, and none are presently on the COSEWIC list for endangered, threatened or vulnerable species. This is an impressive diversity of species owing, in part, to the diversity of aquatic habitat available.

Within the GSA, life histories are extremely variable between species. For example, some species are migratory between fresh and salt water, some are migratory between two areas of fresh water, and some are relatively sedentary with little or no migration.

Many species migrate outside of the GSA, therefore cross jurisdictional planning should be considered for fish populations.

There are two main types of issues identified for fish:

- 1) coordination of activities in the Mackenzie River Basin; and
- 2) need for additional research or initiatives.

Coordination of Activities in the Mackenzie River Basin

- A need to identify cross-jurisdictional/co-management responsibilities for fish populations.

Additional Research or Initiatives

- A need for accurate locations of critical fish habitat (GRRB/DFO) and harvest sites (RRCs).
- A need to collect or compile information on community harvest areas.
- A need for a land use policy that minimizes the effect of domestic pollution (sewage and landfill sites) on fish populations.
- A need identify and set guidelines for detrimental activities affecting fish populations in the GSA (habitat alteration, pollution, noise, over fishing, etc.).
- A need to identify the migration corridor of various fish species (char, whitefish, loche, inconnu).

7.2.4 Tourism and Recreation

There are a diverse number of tourism opportunities in the GSA. Attractions include the Mackenzie and Richardson Mountains, and the Mackenzie Delta. Many activities including hunting, fishing, canoeing, and hiking are popular. The four GSA communities also provide an opportunity for visitors to experience Gwich'in culture. Overall, tourism is viewed as being compatible with Gwich'in lifestyle.

Currently, the tourism industry provides significant economic activity in the GSA. There are approximately 10-15 tour operators now in business. The industry is diversifying to include winter activities such as snowmobiling, dog team mushing and cross country skiing tours. Facilities range from lookout sites, wayside parks, community parks and three Territorial Parks (Gwich'in Territorial Park, Chuk Park and Nitainlaii Park). These parks provide recreational opportunities for local residents. It is expected that tourism will continue to grow in the GSA in the next five years. There are two types of issues related to tourism:

- 1) finding a balance between tourism and other land values or uses; and
- 2) tourism initiatives.

Tourism and other Land Values and Uses

- Need to balance tourism opportunities with the protection of the environment and traditional activities. It will be necessary to ensure that tourism activities do not interfere with either natural or traditional activities.
- Need to resolve what types of tourism are appropriate in the GSA (e.g. sport hunting).

Tourism Initiatives

- Need for the development of management plans for tourism activities or areas, such as hiking trails, fishing and wildlife areas, cultural sites and parks.
- Need to educate visitors about access issues regarding Gwich'in private lands.

7.3 Non-Renewable Resources

The following are descriptions and issues related to non-renewable resource land uses including: sand and gravel, oil and gas, and minerals.

7.3.1 Sand and Gravel

There are four types of surface material commonly removed from the pits in the GSA: topsoil, sand, gravel and crushed rock. Topsoil pits extract the organic soils that have formed through biological and physical processes above inorganic material. Sand and gravel is generally extracted from glacial deposits. Crushed rock pits utilize sedimentary rock formations (e.g., shale and sandstone). Rock is blasted out the formation and crushed to the desired size.

There are 38 aggregate pits in the settlement area. Of the pits in current use, 14 are being actively dug, while 4 are used for stockpiling purposes only. The most significant gravel source in the GSA is the Frog Creek pit. There is a second significant source of gravel in the Willow Creek area near Aklavik. Expanding rock pits include: two pits in “the Gorge”; airport pit near Ft McPherson; three Arctic Red River pits, pit at 235.3 km on the Dempster Highway; Town of Inuvik’s pit at 251.2 km; and two pits in the Richardson Mountains near Willow Creek.

DIAND issues permits and licenses for the extraction of surface materials, while the GLWB will be issuing the land use permits for working on the sites.

It is expected that in the next five years, pit expansion will continue in all active pits and that new pits may be needed. There are two main types of issues with pits: 1) meeting the demands for material; and 2) balancing extraction with environmental and cultural concerns as well as other land uses.

Meeting the Demands for Material

- There is a need to meet demand for sand and gravel resources in the next five years. Consideration should be given to:
 - a) allowing the continued expansion of pits in current operation;
 - b) allocating land in the Inuvik area as a source for sand;
 - c) allocating the lower Stoney Creek area for sand and gravel use; and
 - d) finding alternate sources of sand and gravel.

- To meet the long term demand for sand and gravel, consider leaving areas with high sand and gravel potential available for extraction.

Environment, Culture and other Land Uses

- Consideration needs to be given to critical wildlife areas, culturally significant sites, other land uses such as tourism and recreation, and traditional uses of land before allocating an area for sand and gravel extraction.
- Consideration needs to be given to the rehabilitation of pit sites once extraction is completed.
- Consideration needs to be given to revegetating the roads to pit sites once extraction is completed.
- Consideration needs to be given to requiring that all pits be hidden from view along the Dempster Highway, particularly in areas of significance to tourism.

7.32 Oil and Gas

Oil and gas, collectively known as hydrocarbons, are two of the world's greatest suppliers of non-renewable energy. Several significant oil and gas discoveries have been made in the Mackenzie Delta Beaufort Sea Region. Major gas discoveries were made on the main land, while major oil discoveries were made off shore in the southern Beaufort. The recoverable reserves of oil for the Mackenzie Delta and southern Beaufort Sea have been estimated to total 117 million cubic meters (approximately 736 million barrels); amounting to about 10 percent of the known reserves of recoverable conventional oil in all of Canada.

Probable land uses for the GSA associated with oil and gas are primarily based on providing a pipeline corridor for the shipment of both oil and gas to southern markets. At this time there is minimal activity in the oil and gas sector in the GSA and in the Inuvialuit Settlement Region and it is not likely that there will be any large developments in the next five years.

DIAND has the authority to issue Calls for Bids for oil and gas exploration within the GSA and there have been 3 parcels awarded for exploratory work since 1994.

There are three types of issues related to oil and gas development: 1) boundaries, 2) pipeline development; and 3) balancing oil and gas development with environmental and cultural concerns as well as other land uses.

Boundaries

- Consideration should be given to changing the boundaries of the parcel blocks associated with Call for Bids to correspond with the land claim boundaries, avoiding the potential disputes between claimant groups.
- Transboundary issues will have to be considered when evaluating potential land uses, especially when planning for potential pipeline routes.

Pipeline Development

- Need to consider planning the proposed Mackenzie Valley Highway in conjunction with the proposed Mackenzie Valley Pipeline routes so as to minimize disturbance.
- Need to consider increases in demand for water, sand and gravel, and waste disposal facilities if oil and gas development occurs.

Environment, Culture and other Land Uses

- Need to consider critical wildlife areas, culturally significant sites, other land uses such as tourism and recreation, and traditional uses of land when evaluating proposed oil and gas development.

7.3.3 Minerals

The mineral resources of the region are concentrated in the complex geology of the Mackenzie Mountains and Richardson Mountains. In general, the Mackenzie Mountains house more known significant mineral resources than the Richardson Mountains. The only section of the GSA that contains a section of the Mackenzie Mountains is the upper Arctic Red River, comprised of the Backbone and Canyon Ranges. The minerals found in the Backbone Range include iron ore, lead, zinc, silver, copper and gold. Deposits include: 1) a small lead zinc and silver deposit on the Cranswick River, 2) a medium sized lead zinc deposit on the Cranswick; and

3) a deposit known to have Zinc, Barium, Mercury, Lead, Silver and Antimony near the headwaters of the Arctic Red River.

The Richardson Mountains appear to be less well endowed with mineral resources relative to the Mackenzie Mountains. There is a medium sized iron, manganese and phosphorous ore deposit in the Big Fish river area just north of the settlement area. Sub-bituminous and highly volatile bituminous coal seams are also known to exist in an area just north of the GSA. Coal seams are also known to exist in the Willow River area.

There are no active mineral related mines in the GSA nor mineral related exploration occurring in the GSA. There has been some prospecting in the headwaters of the Arctic Red River since 1994-95. This prospecting may or may not show promising minerals that warrant further exploration. At the moment there are no signs that exploration will take place.

DIAND issues licenses and permits for prospecting and exploration. For any significant work a land use permit will be needed from the GLWB.

None of the known mineral resources of the GSA are expected to be developed in the next five years. There are three types of issues related to mining:

1) requirements for prospecting and exploration; 2) information needs; and 3) balancing mineral development with environmental and cultural concerns, as well as other land uses.

Prospecting and Exploration

- Address the demand for large areas to be left accessible for mineral resource prospecting and exploration.

Information Needs

- Identified information gap with respect to what areas the mining industry would like to see kept open for mining development.
- Identified information gap with respect to the mineral potential of the GSA.

Environment, Culture and other Land Uses

- A need to consider critical wildlife areas, culturally significant sites, other land uses such as tourism and recreation, and traditional uses of land when evaluating proposed mineral prospecting, exploration and development activities.

7.4 Public Development

The following are descriptions and issues related to public development land uses including: municipal activities, transportation, waste sites, and military activities.

7.4.1 Municipal Activities

The GILUPB does not have the authority to plan within municipal areas. However, GILUPB is considering land uses that take place both on GSA and municipal lands including waste sites and roads. Coordination between GILUPB and municipalities will be necessary as: 1) some municipal activities will rely on GSA resources such as sand and gravel for road repair or construction; and 2) many municipal activities can have significant effects on areas outside of their boundaries.

7.4.2 Transportation

Transportation refers to infrastructure and activities associated with roads, airports, and navigable waters. The main modes of transportation in the GSA are automobiles, aircraft, snowmobiles and boats. Automobiles are limited to the Dempster Highway, ice roads, and a few short side roads. Road traffic is significantly restricted during break-up (mid May - mid June) and freeze-up (late October - mid-December). Aircraft can access the larger lakes and rivers in all seasons, except during freeze-up and break-up. Snowmobiles are restricted to the snow season, which runs from late October to early May. Boat traffic can be divided into barge traffic and small boat traffic. The main channels of the Mackenzie and the lower Peel are navigable by barge shortly after break-up. Small boats can utilize the main channels of the Mackenzie River and the Peel River throughout the spring, summer and fall period.

There are a number of transportation developments that are expected to occur in the next five years. The Department of Transportation is the lead agency with many of the transportation

developments. However, in many cases municipal government and other agencies, such as GLWB will also be involved.

There are two types of issues related to transportation: 1) information and research needs; and 2) balance between transportation needs and environmental, cultural and other land use concerns.

Information and Research Needs

- Establish how much sand and gravel is needed for highway maintenance in the next five years.
- Identify areas where communities may want additional roads.
- Establish guidelines for transportation management plans and for impact assessments for proposed transportation corridors.

Environment, Culture and Other Uses:

- Balance between the proposed transportation projects and critical wildlife areas, cultural sites, other land uses such as tourism and recreation, and traditional uses of land.

7.4.3 Waste Sites

There are three major types of pollutants/waste in the GSA: local waste, remnant waste from previous land uses, and long range pollutants. Local waste is disposed in community dumps, sewage lagoons and industrial waste sites. Many of these sites are within municipal boundaries and outside of the jurisdiction of the Land Use Plan. Remnant wastes date back to before 1972 when land use was not regulated in the arctic and includes: wooden drilling rigs, electrical equipment, drilling muds, chemicals, fuels, oil drums, an abandoned telephone line and garbage. Long range pollutants are an outside source of pollution brought to the GSA through air currents and the water system. These contaminants include persistent organic pollutants (POPs), and heavy metals.

Waste products and sites have been identified as a major concern by the communities. The communities have asked GILUPB to deal with these sites through the Land Use Plan. Many

of their concerns are addressed in the “Water Section”, however there are a few outstanding issues that can be categorized as: 1) identification of future waste sites; 2) research and monitoring needs, and 3) new initiatives.

Identification of Future Waste Sites

- Land areas need to be identified that are suitable for future waste sites to avoid having sites in the future that are detrimental to the land and water systems of the GSA.

Research and Monitoring Needs

- For current waste sites there needs to be a monitoring system that assesses what contaminants are found at the site, at what concentrations, if they are leaching out into the surrounding environment and what effects they are having on the environment.
- A need for research on air quality and policies that minimize air pollution.

New Initiatives

- A need for management plans for all current waste sites in the GSA may also be a necessary step towards ensuring that waste sites function adequately.
- A need for a data base that lists current and remnant waste sites.

7.4.4 Military Activities

Military activities in the GSA have traditionally been conducted by the Army and Air Force. The primary need of the Army is tracts of land for ground exercises. These exercises occur during the winter, and there is no use of artillery. Air Force activities are kept to a minimum, and will not operate below 600 meters Above Ground Level or within 3 nautical miles of sensitive areas. The only major concern with regards to land use planning is having areas designated as protected recognized by the military.

7.5 Cultural Heritage

As stated previously an Inventory and Assessment Report has not yet been completed for the Cultural Heritage. GILUPB is currently working with the Gwich'in Social and Cultural Institute to establish a list of cultural sites in the GSA for the Land Use Plan.

APPENDIX A: GLOSSARY OF TERMS

Aggregate Resources: means sand and gravel, rock crush or soils.

Appropriate Technology: getting a job done using the tools and knowledge of the people of a region.

Baseline Data: means the conditions at a point in time that can be used as a basis for comparison with future information collected.

Biodiversity: the variety of different plants, animals and other living things, in what numbers they occur, where they are found and what functions they perform.

Commercial Activity: an activity such as cutting trees where the intention is to sell the resources for profit.

Conservation: means the management of wildlife populations and habitat to ensure the maintenance of the quality and diversity including the long-term optimum productivity of those resources, and to ensure a sustainable harvest and its efficient use.

Consultation: means to seek information or advice on a matter to be decided and provide sufficient time and detail to allow the party being consulted to prepare its view on the matter.

Culturally Significant Areas: are those areas in the GSA used by Gwich'in for trapping, fishing, hunting, etc. and areas that have archaeological, and/or historical significance. These areas have an inherent long term value to the communities.

Data Base: means a collection of data stored in an organized way so that the information can be easily used again (usually in a computer system).

Development: means any private, local, territorial or federal government project, or an extension of an existing use of land or water.

Ecologically Significant: important for the maintenance of wildlife species, vegetation, or land features that are significant to the functioning of the ecosystem (environment).

Ecosystem: a complex system of living organisms (plants, animals, fungi, and microorganisms), together with the soil, water, air and nutrients, that all work together as one unit.

Ecoregion: an area classified as a unit due to its particular landscape based on factors such as climate, landforms, water systems, vegetation, and wildlife.

Environment: the components of the earth including land, water, air, all organic and inorganic matter and living organisms and their interactions.

Forest conservation: means the management of forest resources to ensure the maintenance of the quality and diversity, including the long-term optimum productivity of those resources, and to ensure a sustainable harvest and its efficient use.

Forest management: includes forest conservation, forest fire fighting, timber management, reforestation and silviculture.

Fur bearers: these include beaver, fox, otter, marten, fisher, weasel, mink, muskrat, wolverine, wolves and squirrels.

Gas: means natural gas and includes all substances, other than oil, that are produced in association with natural gas;

Geographic Information System (GIS): is a tool for storing, analyzing, and presenting information from maps, lists, and pictures.

Government: means federal or territorial government including departments, agencies or officials authorized to act on behalf of public bodies.

Gwich'in lands: means Gwich'in municipal lands and settlement lands;

Gwich'in Settlement Area: comprises the area within the Northwest Territories as described in appendix A of the Gwich'in Comprehensive Land Claim Agreement.

Gwich'in Settlement Region: comprises of the Gwich'in Settlement Area and Primary Use Area in the Yukon.

Habitat Mapping: means the mapping of specific land and water conditions that species depend upon directly or indirectly for life.

Harvesting: means gathering, hunting, trapping or fishing in accordance with the Gwich'in Comprehensive Land Claim Agreement or applicable legislation.

Headwater Areas: the upper reaches or beginning of a river, stream or creek.

Impact on the Environment: includes effects on air, land and water quality, on wildlife and wildlife harvesting, on the social and cultural environment and on heritage resources.

Land Use Planning: is determining what are the best uses of land and water resources in the future to meet the needs of the people of the region and to ensure that the resources are available for all time.

Legislated Protected Areas: means all areas and locations of land set apart and protected by government in the settlement area including historic parks and sites, national wildlife areas, migratory bird sanctuaries, territorial parks, conservation areas and archaeological sites but does not include national parks.

Minerals: means precious and base metals and other, non-living, naturally occurring substances and includes coal.

Oil: means crude oil produced at a wellhead in liquid form and any other hydrocarbons except coal and gas. Hydrocarbons that may be extracted or recovered from deposits of oil sand, bitumen, bituminous sand, oil shale or from any other types of deposits on the surface or subsurface.

Subsistence Activities: these include Gwich'in hunting, trapping, trail construction, fishing, forestry and vegetation harvesting.

Territorial Park: means lands described in the schedule to the Territorial Park Regulations of the *Territorial Parks Act*, R.S.N.W.T.

Water: means any inland waters, whether in a liquid or frozen state, on or below the surface of land.

Wildlife: means all animals in a wild state including, fish, mammals and birds.

APPENDIX B: LIST OF ACRONYMS

COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Department of Fisheries and Oceans
DIAND	Department of Indian Affairs and Northern Development
DRWED	Department of Resources, Wildlife and Economic Development
GCLCA	Gwich'in Comprehensive Land Claim Agreement
GILUPB	Gwich'in Interim Land Use Planning Board
GLA	Gwich'in Land Administration
GLUPB	Gwich'in Land Use Planning Board
GLWB	Gwich'in Land and Water Board
GNWT	Government of the Northwest Territories
GRRB	Gwich'in Renewable Resources Board
GSA	Gwich'in Settlement Area
GSR	Gwich'in Settlement Region
GTC	Gwich'in Tribal Council
MDBSLUP	Mackenzie Delta Beaufort Sea Land Use Plan
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVRMA	Mackenzie Valley Resource Management Act
RRC	Renewable Resource Council