# FROST HILLS LOCAL INTEGRATED RESOURCE PLAN

Approved By The Economic Planning And Resource Development Committee Of Cabinet On August 7, 1985



ENERGY AND NATURAL RESOURCES Resource Evaluation and Planning Division

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#### PREFACE

This planning document was prepared by involved government agencies and public consultants in recognition of the need for improved management of Alberta's lands and resources. It applies only to public lands within the Frost Hills planning area, and not to any private or federal lands.

The plan presents the Government of Alberta's resource management policy for the public lands and resources within the area. It is intended to be a guide to resource managers, industry and publics having responsibility or interests in the area rather than a regulatory mechanism. Resource potentials and opportunities for development are identified with a view to assisting in the economic progress of Alberta. The plan is sufficiently flexible so that all future proposals for land use and development may be considered. No legitimate proposals will be categorically rejected. The provincial government is committed to serving Albertans; should a proposal not be in keeping with the provisions of the plan, every means will be taken to explore alternative means for accommodating the proposal in a more appropriate location, either in this planning area or on other public lands. The rejection of any proposals will only be done in writing by the associate minister or his designate.

A detailed outline for implementation will be provided for this local plan in order to identify the necessary implementation actions and roles. This implementation outline will also provide for the continuing review of the plan so that it may accommodate changing needs and situations. Wherever possible, the private sector will be provided the opportunity to be actively involved in the operational delivery of the plan.

Implementation is to be subject to normal budgetary approval process with overall priorities to be established with consideration of opportunities in other planning areas and areas currently outside the planning process.

While the plan identifies resource potentials and opportunities, the realization of these may require the dedication of major amounts of public funds. The plan will be used on the understanding that any actions required for implementation will only be undertaken as budgetary approvals are given in the normal way. The private sector will be given the first opportunity to provide any development required.

This plan has no legal status and is subject to revisions or review at the discretion of the Associate Minister of Public Lands and Wildlife.

#### HIGHLIGHT SUMMARY

The Frost Hills Local Integrated Resource Plan was initiated in 1980 to resolve conflict between a provincial government reforestation project and local demands for an expanded agricultural land base. The development of the plan, which included public involvement at every major and minor step, focused on the provision of an expanded agricultural land base while also identifying areas to be retained for timber production and habitat retention.

Provisions of the plan will facilitate the phased conversion of approximately 60 000 acres (24 200 ha) of forested public land to private agricultural holdings. Three blocks of land have also been identified for provision of grazing primarily on a lease/licence basis. These blocks, one of which is in the Green Area, provide a total of 16 000 acres (6473 ha) for grazing use.

Expansion of the agricultural land base and re-alignment of the Green Area/White Area boundary affect primarily forest and wildlife resources. Because of the anticipated demand for agricultural land, planning for phased salvage of merchantable timber has been carried out. While it is expected that moose and furbearing animal populations will be reduced, it is also expected that there will be an increased deer population as agricultural clearing proceeds.

Conservation measures have been delineated that will ensure the protection of stream channels. As a result, fish habitat will be protected and stream siltation will be controlled.

No changes in the management of mineral or recreation resources will occur other than incidental effects associated with the clearing for agricultural land.

The hamlet of Faust has requested that, because of their residents' lack of agricultural qualifications, a 10.25-section block of land be made available exclusively for their use. This request, which includes provision of agricultural, recreational and country residential opportunities, has been agreed to by the provincial government. The area for which this special status is in effect will revert to normal disposition policy if sufficient interest is not displayed by Faust residents.

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# 1. INTRODUCTION

#### 1.1 Background and Overview

The integrated resource plan for the Frost Hills planning area (Figures 1 and 2) has been prepared in response to a request for agricultural land base expansion. Provisions of this plan have been developed after an intensive information gathering and analysis period. While agricultural land base expansion is the central issue of the integrated plan, the approach in the planning area was to anticipate potential conflicts and recognize opportunities for optimization of resource management.

A planning team was formed in the latter months of 1980 composed of government agency and public members. During the development of the plan, a number of other agencies and publics became involved as consultants. The agencies and publics that have been involved are acknowledged in Section 1.3.

Integrated resource planning is carried out according to an approved system for development and approval of planning products. Since early 1981, the planning team has prepared the Terms of Reference, Background Information, Policy Options and Resource Management Policy documents. As required, the Resource Integration Committee has reviewed and approved the Terms of Reference and Resource Management Policy.

Extensive documentation of resource information was prepared by the agencies involved. The Resource Evaluation Branch of Energy and Natural Resources has prepared an Ecological Land Classification that was used extensively in the development of this plan. All team and agency documentation prepared in support of this plan is available upon request from the Resource Planning Branch or Energy and Natural Resources Information Centre.

# 1.1.1 Planning Area Overview - Physical Environment

This overview discussion is not intended to be comprehensive but rather to provide a general summary of planning area conditions.

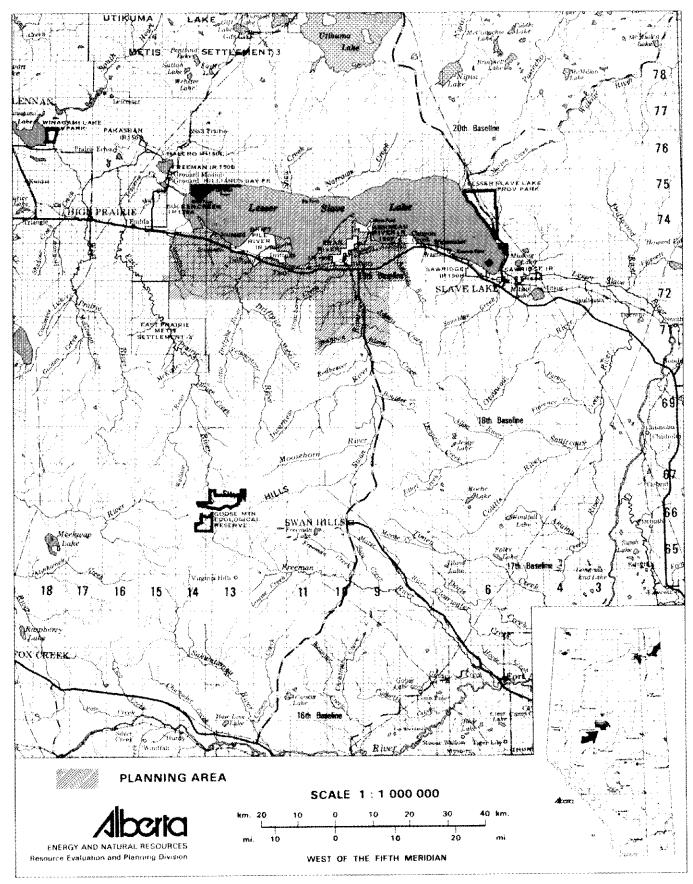


Figure 1. Regional Location of Frost Hills Planning Area

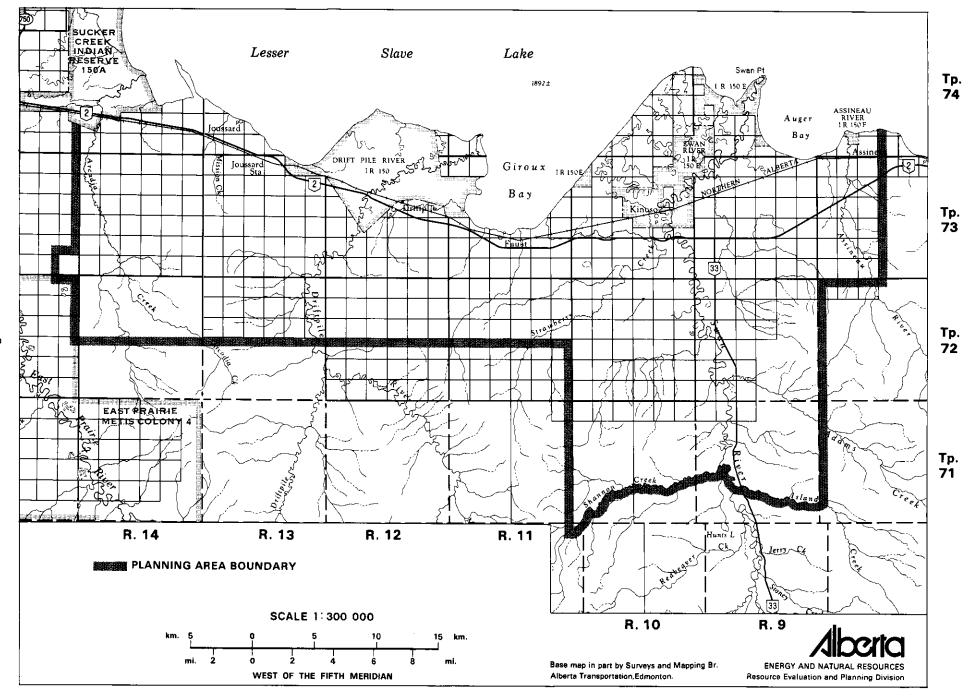


Figure 2. Frost Hills Local Plan

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<u>Topography</u> - Most of the land base of the Frost Hills planning area is within three broad landscape types. They are:

- a) alluvial floodplains and deltas;
- b) lacustrine (former lakebed) lowland; and
- c) high relief uplands.

Floodplain and delta areas are generally very flat owing to incremental accretions of floodplain soils. The lacustrine lowland is the former lakebed of a post-glacial lake that formed between the Swan Hills and the receding continental glacier. Areas above the former shoreline of this post-glacial lake are generally areas of steeper terrain with soils formed on glacial moraine.

<u>Climate</u> - The location of the planning area is within the cool continental climate zone. This zone is characterized by long, cold winters and short, cool summers.

The number of frost-free days is variable within the planning area. Areas more than 30 m above the level of Lesser Slave Lake appear to have the greatest number of frost-free days (90+ days). Low-lying land more than a kilometre from the lake is most susceptible to early frost (80 to 85 days).

Apart from the frost-free period, the growing degree-days are at a maximum at lower elevations near the lake. Climatic conditions for maximum growth potential occur between 580 and 700 m elevation. Land within a kilometre of the lake appears to receive protection from frost in the late summer owing to the heat given off by the lake.

Summer rainfall is sporadic with a significant number of years having excessive rain for optimum crop growth. Maximum rainfall is usually experienced in July.

<u>Soils</u> - Four main soil types of interest for agriculture occur in the Frost Hills planning area. Regosolic soil occurs on the floodplains and delta of the major streams. Solonetzic soil occurs in the northwest portion of the planning area. Gleysolic and luvisolic soils are widespread throughout most of the planning area.

Most of the existing agriculture occurs on the regosolic soil because it generally has good drainage and fertility. Some development of gleysolic and luvosolic soils has occurred. The major difference between these two soils is that gleysolic soils are imperfectly to poorly drained whereas luvisolic soils are generally well drained.

Solonetzic soils found in a relatively small, northwest portion of the planning area are suitable for agriculture but have limiting characteristics such as a tendency to form a hardpan horizon and excessive salinity.

#### 1.1.2 Planning Area Overview - Resources

<u>Agricultural Soils</u> - As outlined in the physical overview, there are four soil orders with agricultural capability. The soil capability and potential to produce forage and grain crops is highly variable even within each soil type. In general, there are extensive, non-contiguous areas with agricultural soils suited to range improvements. Parcels of land capable of sustained grain crop production are, however, considerably fewer in number.

<u>Coniferous Timber</u> - The coniferous timber resource in the planning area is patchy and, for the most part, immature. Forest fires and depletion of mature timber by logging are the main causes of the existing supply situation in the planning area. A large percentage of the planning area is, however, rated as moderate or high capability for production of coniferous timber. Through fire protection, reforestation and control of deciduous competition, the full potential for coniferous growth could be achieved.

Deciduous Timber - Aspen and poplar tree growth at all stages of maturity is very prevalent in the planning area. Aside from excessively wet sites, virtually all the planning area has a moderate or high capability for production of deciduous timber.

Aspen will be utilized through a Deciduous Timber Allocation and is being utilized by local operators. There is a continuous demand for the high quality birch found in the southeast part of the planning area. It is used for firewood.

Timber management plans are currently being revised and will be available by 1986. In addition, a timber management plan is being prepared for land in the revised White Area portion of the planning area. <u>Wildlife and Fisheries</u> - Wildlife species found in the planning area are typical of those found in the boreal forest region of Alberta. Surveys indicate that production of moose and furbearing animals is somewhat above average in comparison with the remainder of the province. Agricultural development favors the production of deer, which are an atypical species in the boreal forest region. No studies of the non-harvested species of wildlife were carried out in relation to plan development.

The primary importance of the stream fishery in the planning area is in relation to the provincially-important commercial fishery of Lesser Slave Lake. The lake's fishery productivity partially depends on habitat and water quality of inflowing streams.

The streams' fishery is, however, important in its own right because primary and secondary streams support fish populations of interest to anglers.

<u>Watershed</u> - Consumptive uses of surface water in the planning area are minimal. Major concerns however relate to maintenance of water quality, erosion prevention and flood prevention. Persistent summer rainfall causes flooding of streams in the planning area. This situation requires that any landscape alteration be carefully assessed for its potential impact on the watershed.

Recreation - The main focus of recreation in the planning area is the shore of Lesser Slave Lake. It has also been identified as the site of greatest potential for recreational development. Extensive recreational pursuits such as hunting, fishing and trail riding occur to some extent and have considerable potential for enhancement.

<u>Minerals</u> - Mineral resources found in the planning area include petroleum and natural gas (P&NG), coal and aggregate. Existing deposits of sand and gravel are well known and have had periodic use. The potential for discovery of other deposits is thought to be quite high. There has been extensive P&NG exploration and over 50 wells have been drilled within the planning area. There are several capped gas wells and one producing well which produced low volumes of P&NG in 1982. The potential for discovery of further P&NG is good and industry holds dispositions on approximately 40 per cent of the Frost Hills area. Also the Swan Hills field, at present, extends to the southern boundary of the planning area.

Coal resources of the Sawridge Hill lignite deposit have been partially assessed. The Energy Resources Conservation Board estimated that seven million tonnes of lignite is recoverable but only by

underground mining. The deposit consists of two seams of type A lignite found in the Wapiti Formation at depths ranging from four to 96 metres. Although an abandoned mine did recover about 100 000 tonnes, the size and quality of the reserves make development unlikely.

For more detailed information on the resources of the planning area, the following documents should be consulted:

- 1. Frost Hills Integrated Resource Plan Background Information
- 2. Ecological Land Classification and Evaluation Frost Hills
- 3. Frost Hills Current Plan Agricultural Capability
- Fisheries and Wildlife Resources Frost Hills Current Management Plan

#### 1.2 Plan Purpose

The integrated resource plan for the Frost Hills area is intended as a guide to resource management of the area's land and resources. Integration is achieved through extensive interagency consultation during the development of the plan and by providing for efficient means of consultation during plan implementation.

In response to local public demand, the plan's focus is the provision of an expanded agricultural land base. The planning team, through analysis of resource capabilities, present uses, local demand and potentials were guided by the need to provide for optimum use of the land and resources. The land-use trade-offs and the implications for various resources of those trade-offs are outlined throughout this plan document.

The plan is intended both as a guide for resource managers and as a document useful for the general public.

# 1.3 The Planning Team

The level of involvement of government agencies and public groups has been dependent on their level of interest in the outcome of the plan. Those with a direct and active interest are designated as participative planning team members. Agencies and groups with an interest in monitoring the progress of the plan are involved as planning team consultants.

# Participative Agencies and Groups

Alberta Energy and Natural Resources

- Alberta Forest Service
- Fish and Wildlife Division
- Public Lands Division
- Resource Planning Branch Co-ordinator

Alberta Agriculture Lesser Slave Lake Basin Advisory Committee Kinuso Local Land Development Committee

Consultants - Government Agencies

Alberta Energy and Natural Resources - Mineral Resources

Alberta Environment

Consultants - Public Groups

Alberta Fish and Game Association

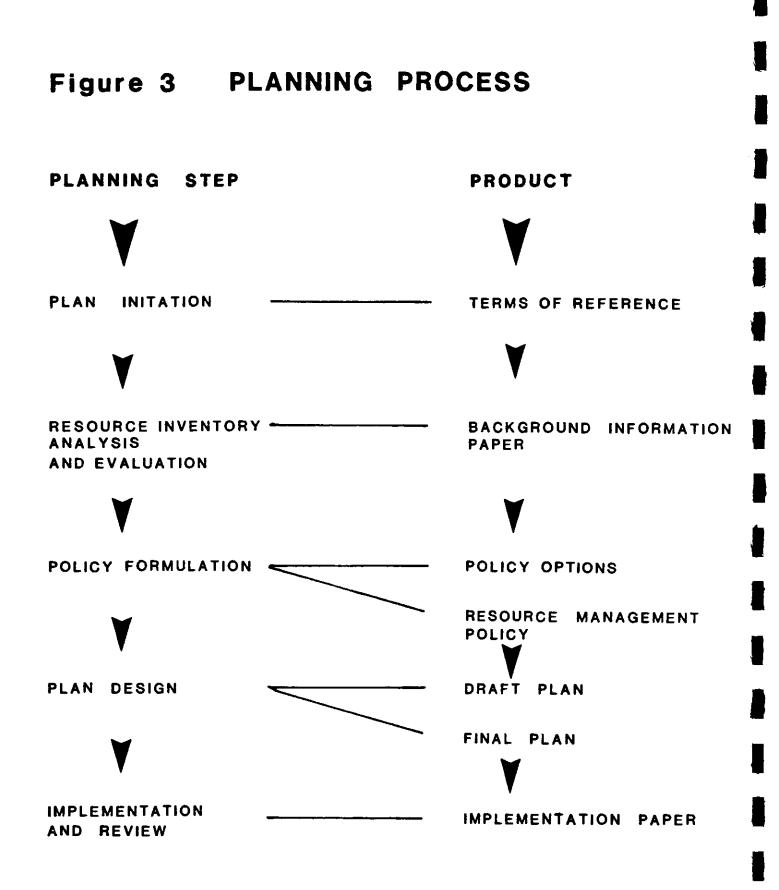
- \* Canadian Petroleum Association/Independent Petroleum Association of Canada
- \* Western Stockgrowers Association
- \* National and Provincial Parks Association

\* Public Consultants who have no current designated contact person for this plan.

Each of the groups and agencies named above has one designated representative as the contact for the planning exercise. The participative members have attended each meeting throughout the plan formulation period and have contributed in a major way in the documentation of successive steps of the process. Consultants to the team have been involved as reviewers of plan products and their contribution has come through correspondence and individual meetings with the co-ordinator.

# 1.4 Planning Process

The Frost Hills Integrated Resource Plan has adhered to the planning process outlined for local-level planning in <u>A System for</u> <u>Integrated Resource Planning in Alberta</u>. Figure 3 displays the basic steps and products of this process.



# 2. POLICY AND PLANNING CONTEXT

# 2.1 Major Policy Factors

A number of major land use policies affect the Frost Hills planning area. These are:

- White/Green Areas policy;
- Accelerated Land Sales policy;
- Resource renewal/enhancement policies (Range Improvement, Maintaining Our Forests, Habitat Retention and Enhancement).

# 2.1.1 White/Green Areas

In 1948, the province was divided into White, Yellow and Green areas. The basic purpose of this was to identify areas where public land with agricultural capability could be purchased (White Area), areas where public land with agricultural capability could be purchased under homesteading regulations (Yellow Area) and areas where public land would not be available for purchase (Green Area). The Green Area public lands are managed to provide a variety of resources, notably timber, water, recreation and wildlife on a sustained basis. The Yellow Area has now been eliminated and changed to the White Area. Public land in the White Area is managed primarily for agricultural pursuits under the Public Lands Act.

The Frost Hills planning area, upon plan implementation, will include transfer of 132  $\rm km^2$  (82 sq. mi.) from the Green Area to the White Area.

# 2.1.2 Accelerated Land Sales

In 1981, the provincial government announced its intention to accelerate the posting of public land with agricultural capability. The objective of this initiative is to post 101 170 ha (250 000 a.) for agricultural land disposition annually in the Peace River Region.

Integrated resource planning areas in the Peace River Region, including the Frost Hills area, have been identified as potential contributors to this objective.

# 2.1.3 Resource Renewal and Enhancement

Parts of the Frost Hills planning area have been considered in recent years for resource renewal or enhancement. In fact, the objections of farmers and ranchers to the enhancement of the coniferous forest land base under the <u>Maintaining Our Forests</u> program was a contributing factor in the initiation of the plan. The re-establishment of coniferous forest cover in the Swan River valley is part of a provincial Green Area policy of ensuring a perpetual and sufficient supply of coniferous timber to Alberta's manufacturers.

Residents of the planning area have approached the government a number of times in recent years to request establishment of a Provincial Grazing Reserve. The grazing reserve program has as its objective, the establishment of, or improvement of, grazing lands to meet the needs of farmers and ranchers in a given area. While the terms of reference for the Frost Hills planning area identifies the need for public land suitable for improved grazing, it is not expected that the plan will directly lead to the establishment of a Provincial Grazing Reserve. The development of a grazing reserve within the planning area has been rejected on the basis of an inadequate land base and insufficient demand.

It is expected that provisions of the Frost Hills plan will facilitate the conservation of fish and wildlife resources of the study area. This will be achieved through retention and enhancement of important habitats and a variety of other management approaches.

# 2.2 Planning Context

An earlier attempt to allocate and plan land use in the Lesser Slave Lake Region was completed in 1975 by Alberta Municipal Affairs. A complex analysis of Canada Land Inventory information was applied to determine the best use of the land in terms of its ability to return benefits. Individual quarter sections were assigned a rating that was intended to indicate the anticipated mix of benefits that could be expected if developed for a particular use. Resource information of greater detail than Canada Land Inventory was collected and used in the land resource allocation process for the Frost Hills Integrated Resource Plan.

Alberta Municipal Affairs has completed a Land Use Order for Improvement District 17 which includes all of the Frost Hills planning area. The provisions of the land use order have a limited application to public land. Construction of permanent buildings on public land is subject to the approval of a development officer who is guided by the land use order unless the construction is carried out by the provincial government.

#### 3. BROAD OBJECTIVES AND GUIDELINES

### 3.1 Introduction

During the process of formulating the resource planning framework for the Frost Hills planning area, each planning team member identified the issues and concerns relevant to his or her involvement. From the issues and concerns identified, the team then developed a set of integrated objectives and guidelines that apply to the entire study area. Because of the heavy emphasis in the Frost Hills Integrated Resource Plan on agricultural, forest, and fish and wildlife concerns, there is a corresponding emphasis on these resources in the presentation of objectives and guidelines.

# 3.2 Till Cropping

### Objectives

- 1. To provide opportunities for agricultural expansion in the planning area.
- 2. To ensure that agricultural expansion is carried out in a manner that minimizes adverse impacts on other resource values in the planning area.
- 3. To improve the viability of farming in the area.

#### Justification

Field surveys of the planning area have shown a considerable quantity of public land with a moderate or low agricultural capability. These areas are capable of producing cereal crops on a sustained basis.

The areas rated as low, though capable of producing cereal crops, have limitations which would make production of forage or pasture crops a more logical choice.

There has been considerable demand for agricultural land in the planning area and there is no indication that the demand is decreasing.

The available public land in the adjacent farming district of High Prairie is being depleted. In future, the demand may be shifted to Joussard and Kinuso. Both villages are within the general district of High Prairie.

As a result of steady demand, the provincial government is advocating expansion of the farm base in the Peace River Region under the accelerated land sale policy. Land is surveyed and serviced with roads in an effort to make agricultural public land available.

Opening public land will allow expansion of the agricultural land base which will result in an expansion of the service bases in Kinuso, Faust, Driftpile and Joussard. Spinoff benefits for High Prairie and Slave Lake will also result.

Existing farm units may expand and become more viable. The farmers and ranchers will be able to rotate their land for better overall production and make more efficient use of the agricultural land resource.

### 3.3 Grazing Resources

#### Objectives

- 1. To provide public land in sufficient quantity to meet the demand for grazing land by existing and new operators.
- 2. To ensure, where possible, that grazing dispositions continue to be located in close proximity to existing farm operations.
- 3. To encourage lessees to enter programs of range improvement and thereby increase the quantity and quality of forage produced.
- 4. To utilize the unimproved grazing resource on those lands where unimproved grazing is chosen to be the most appropriate use.
- 5. To encourage the conversion of the unimproved range to improved pasture where the land has the capability of being improved.
- 6. To discourage grazing in areas which have no or very little capability to support grazing.

### Guidelines

1. Development for grazing use will occur under Range Improvement Regulations and will be guided by a Range Development Plan and a Range Management Plan.

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- 2. Access to grazing dispositions need not be developed before disposing of the land.
- 3. Unimproved range will be available as grazing leases and permits.
- Improved and unimproved range will be managed to ensure that the range and other resources are not detrimentally affected by grazing.
- 5. If possible, grazing licences should be employed to disallow the licensee the right to collect fees for industrial disruption of the grazing area except as related to actual damages or inconvenience.

# Justification

Public land that is marginal for cultivation but suitable for grazing development may be of value for use in conjunction with cultivation on adjacent lands. This land would provide a supplemental land base to allow a farmer or rancher to utilize the grazing resource.

Utilizing these lower capability lands would be of benefit to the stability of the farming operation and the community as a whole because of the increased production which would result and the improved economic viability of the farmer or rancher.

These lands would generally be used for grazing in conjunction with or supplemental to higher capability lands to improve the economic viability of the total unit. This would permit farm management options such as rotational grazing on both types of land and provide seasonal grazing land.

#### 3.4 Fish and Wildlife Resources

#### Objectives

1. To maintain or increase the fish and wildlife populations in the planning area according to provincial objectives.

- 2. To maintain or increase opportunities for commercial and noncommercial use of the fisheries and wildlife resources.
- 3. To maintain the moose populations in the planning area and thereby maintain or increase the utilization of the species.
- 4. To promote adaptation of compatible wildlife species on land where habitat changes occur due to agricultural development.
- 5. To examine the potential for increasing the present small elk population of the planning area.
- 6. To maintain the existing 13 trapping areas.
- 7. To control nuisance animals as required.
- 8. To protect Lesser Slave Lake and its tributaries from increased unnatural sedimentation and thereby protect and enhance the fisheries habitat and population.
- 9. To ensure that stream crossings do not inhibit fish passage.

#### Guidelines

- 1. Careful mitigation, including timing restrictions, may be employed to minimize specific impacts on wildlife and fisheries.
- 2. Development of grazing leases will be referred to the Fish and Wildlife Division to ensure dispositions and developments are compatible with fisheries and wildlife concerns.
- 3. Development of access must ensure passage for fish at stream crossings and minimize the potential for erosion and siltation.

#### Justification

Very significant wildlife and fisheries resources are present in the planning area. In particular, moose, furbearers and fisheries are of major significance. Although Lesser Slave Lake is not within the planning area, many lake fish species spend a portion of their life cycle in the tributaries located in the planning area.

Fish habitat in the lake may be affected by sediment loads transferred through the tributaries. Lesser Slave Lake supports a very significant commercial fishery.

As demand for fisheries and wildlife resources increases throughout Alberta, the importance of incorporating related concerns in planning and plan implementation also increases.

# 3.5 Timber Resources

# Objectives

- 1. To manage a permanent timber land base in the planning area so that coniferous and deciduous timber may be supplied on a sustained yield basis to meet industrial and local commitments.
- 2. To provide a coniferous and deciduous timber supply to meet community demands for local use of the timber resource.
- 3. To provide for the salvage of merchantable timber in relation to agricultural clearing.

- Disposition of coniferous and deciduous timber will be regulated through Quota Licences, Local Timber Permits, Commercial Timber Permits, Deciduous Timber Permits and Deciduous Timber Licences.
- 2. Timber harvesting will observe environmental protection requirements and fish and wildlife considerations through established harvesting guidelines.
- 3. Existing operating conditions as described in the Timber Harvest Cut Block Design Manual will be retained. In addition, wildlife habitat and environmental values will be recognized through modification of these harvesting conditions when mutually agreed upon through Alberta Forest Service/Fish and Wildlife Division consultation.
- 4. Salvage and sanitation logging will be carried out where necessary to harvest over-mature, diseased or fire-killed stands.
- 5. A fire prevention and protection program will be carried out to protect the forest resource.

#### Justification

A continuous supply of timber must be available to meet existing and expected demand. Retention of a forest land base in the planning area is a means by which a portion of this demand will be met.

Intensive forest management projects in the planning area represent a considerable investment. These areas will be retained or partially retained.

Parcels of public land in the Agricultural Development Zone with merchantable coniferous timber will be reserved from agricultural sale until such time as the mature timber is harvested on a liquidation cut basis. If this cannot be achieved within an agreed timeline, the value of the timber will be added to the price of the land.

#### 3.6 Watershed Resources

#### Objectives

- 1. To ensure that land use activities do not detrimentally affect water supply, water quality and soils to the point that on-site and downstream uses are diminished.
- 2. To ensure that soil erosion is minimized.
- 3. To prevent soil erosion in relation to linear facility development, cultivation and scarification in sensitive areas.

#### Guidelines

- 1. Land use activities will be managed to protect water quality and quantity through the departmental referral system.
- 2. Stream contact with access developments will be minimized to reduce point sources of sediments.
- 3. Grazing along lakes and streams will be controlled by appropriate fencing in areas where soils are easily disturbed or where water may become contaminated.
- 4. Land use disturbances will be reclaimed to reduce erosion and sedimentation.

#### Justification

The water quality and quantity must be protected because they are important to consumptive users and for maintenance of the provincially important fish and wildlife resources of the Lesser Slave Lake drainages.

Soil erosion must be minimized because of the negative impacts of the loss of productive top soil and subsequent effect on water quality, fisheries and flooding potential. Soils in the planning area are easily eroded.

Because of the nature of the topography and drainage in the planning area, flooding has been, and will continue to be, a recurring problem. Assessing the flooding potential of watercourses will allow better decisions to be made regarding location of buildings, homesteads and municipal construction. Such information will also assist in regulating land uses in the area.

#### 3.7 Recreation Resources

#### **Objectives**

- 1. To protect and maintain unique areas and areas of high recreational value.
- 2. To attempt to satisfy a portion of the demand for recreation and recreation facilities in the planning area.
- 3. To focus efforts on Lesser Slave Lake, its tributaries and potential recreation trail corridors as areas of likely recreational interest.

#### Justification

There is demand for recreation in the planning area. This is associated primarily with Lesser Slave Lake and its tributaries. Pressure will continue as the population grows in the planning area.

# 3.8 Mineral Resources

# Objectives

- 1. To provide opportunities for industry to define the extent of mineral resources and to develop or produce minerals in proven reserves.
- 2. To provide opportunities for mineral exploration in previously unexplored areas and formations.
- 3. To reserve parcels which have or are thought to have commercial quantities of aggregate.

#### Justification

The products, revenue and employment created in the mineral resource industry are vital to the economic health of the province. Unnecessary restriction of exploration for, and development of, mineral resources should therefore be avoided.

# 3.9 Broad Guidelines - General

- 1. Applications will be referred by the Public Lands Division or Alberta Forest Service to appropriate agencies for comment.
- 2. Operating conditions will be placed to ensure minimal environmental impact and minimal disruptive effect on the future use of the land.
- 3. Where possible, non-agricultural development will be directed to low capability agricultural land.

# 4. ZONE-SPECIFIC OBJECTIVES AND GUIDELINES

#### 4.1 Introduction

The planning team has delineated zones of similar resource values and management requirements (Figure 4). These zones afford the line management agencies the opportunity to examine existing land use policies and apply the appropriate emphasis to the major resource concerns. In the Frost Hills planning area, zoning provides an additional advantage in that it is a clear format promoting general public understanding of resource priorities.

This section provides a discussion of the resource management strategy for each zone. The appropriate resources are discussed for each zone in terms of the zone-specific resource management objectives and guidelines. The objectives and guidelines have been prepared within the framework of the overall intent statement for the zone, the approved resource use/zone matrix presented in Table 1 and the broad objectives and guidelines outlined in Section 3.

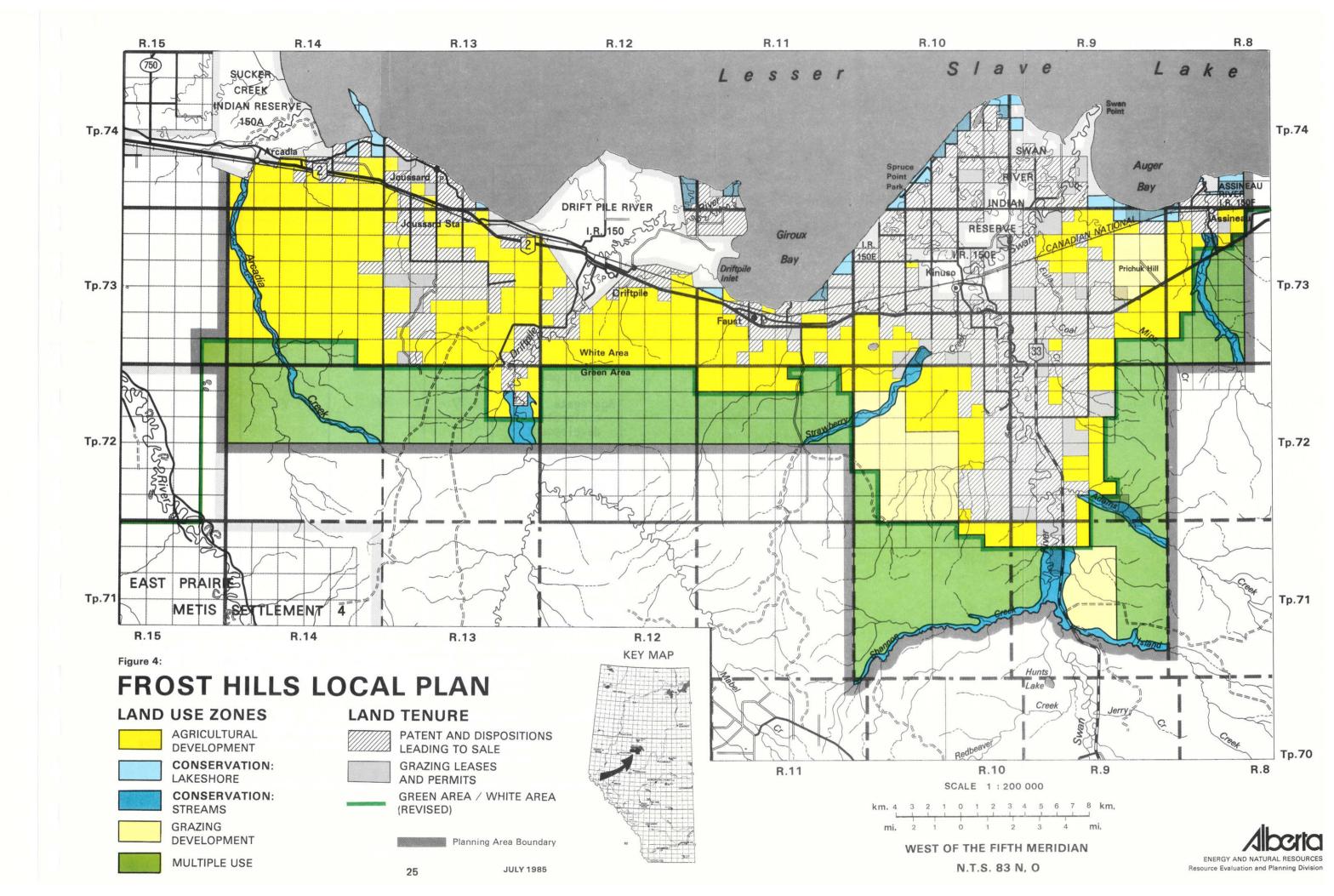
Figure 4 displays the zoning configuration for the planning area. The most extensive are the Agricultural Development and Multiple Use Zones. Special resource emphasis and management attention has been applied in the Conservation and Grazing Development Zones. The Conservation Zone has been employed for the land adjacent to major streams and Lesser Slave Lake, with slightly different management strategies depending on the setting. The Grazing Development Zone identifies land areas considered most suitable for improved grazing use. This emphasis has been applied to the Grazing Development Zone in both the Green and White Areas.

Revision of the Green Area/White Area boundary will occur as illustrated in Figure 4.

#### 4.2 Agricultural Development Zone

#### Zone Intent

The priority land use in this zone is mixed farming. Suitable public land will be made available primarily for private ownership on



# Table 1

RESOURCE U	ISE /	ZONE	MATRIX
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<b></b>	<b></b>	·		
ZONE RESOURCE USE	MULTIPLE USE	AGRICULTURAL DEVELOPMENT	GRAZING DEVELOPMENT	CONSERVATION LAKESHORE/ STREAM
Till crop land	х	/	Р	х
Improved range	1	/	/	Р
Native range	1	/	/	Р
Timber production	1	Р	Р	Р
Mineral exploration and development	1	/	/	Ρ
Aggregate exploration and development	/	/	/	Р
Recreation	1	Р	Р	Р
Linear development	1	/	/	Р
Residential development	х	/	Р	х
Commercial development	/	/	/	x
Industrial development	/	/	/	х

/ Compatible - A use that is recognized as compatible with the intent of the zone. Statutes, policies and regulations are sufficient to ensure that, when carried out at the appropriate level, this land use is desirable in a zone.

- P Permitted A use that may be compatible with the intent of the zone. The planning team and subsequently the line managers will describe the circumstances under which this land use may be permitted in a zone.
- X Not permitted A use not compatible with the intent of a zone.

a disposition - leading - to - sale basis and, to a lesser extent, for grazing dispositions on low capability public land.

# 4.2.1 Till Cropping

# Objectives

- 1. To make public land that is capable of sustained production of arable crops available for settlement.
- 2. To strengthen existing farm units where possible by making undisposed adjacent public land parcels available for cultivation and grazing use.

- 1. According to the established referrals system, an interagency review of each parcel of land will occur leading to a final assessment.
- 2. Parcels of public land found suitable for till crop agricultural use will be posted as available for further applications when adequate access is available.
- 3. If Alberta Transportation is unable to secure funds for access development, the Public Lands Division will attempt to secure sufficient funds for Alberta Transportation to construct required access.
- 4. When a large block of quarter sections are to be made accessible, a trunk road will be developed and the unit size determined in consultation with the ID 17 Agricultural Development Committee.
- 5. When a parcel of land does not have adequate access present to within one-half mile, the matter of road development will be referred to Alberta Transportation for a statement on the feasibility and timing of access development.

# 4.2.2 Grazing Resources

#### Objective

To consider public lands that are marginal for cultivation or that are a conservation concern in relation to annual cultivation for possible grazing dispositions.

#### Guideline

Public land reserved from sale may be made available for grazing dispositions.

# 4.2.3 Fish and Wildlife Resources

# Objectives

- 1. To maintain a mosaic of wildlife habitat throughout the till crop and grazing areas.
- 2. To maintain the biological integrity of the south shore of Lesser Slave Lake.
- 3. To manage the expected increased deer population that will result from agricultural expansion in the planning area.

- 1. A mosaic of wildlife habitat will be maintained throughout this zone by the establishment of ecological corridors on streams, conservation reservations and retention of key habitat or unique areas as public land. (Unique areas include migration corridors, mineral licks and dancing grounds.)
- 2. Public land adjacent to sensitive watercourses may have land uses regulated through Farm Development Leases (FDL). Under an FDL, a buffer along the watercourse may be a condition of the disposition. These buffers would be jointly determined by Public Lands Division and Fish and Wildlife Division.

# 4.2.4 Timber Resources

### Objectives

- 1. To carry out liquidation cutting of timber in an orderly and timely manner on those lands suited to agricultural use.
- 2. To protect areas where investments in the form of intensive forest management projects have been made.
- 3. To provide a deciduous and coniferous timber supply for community use through the Community Farm Woodlot program.

- 1. Merchantable coniferous and deciduous timber on land suitable for agricultural development will be disposed of through liquidation cutting prior to posting. When this is not possible within a reasonable time period, the value of the timber will be added to the purchase price of the land.
- 2. Merchantable timber on land found suitable for improved grazing should be disposed of through liquidation cutting prior to range improvement.
- 3. Progressive agricultural block development will be employed in association with land clearing to minimize infrastructure and forest protection requirements.
- 4. Forested land, when found unsuited to till cropping and improved grazing development, will be retained wherever possible for possible inclusion in a Community Farm Woodlot program. The decision to include such land as a Community Farm Woodlot will be based on whether stocking levels and merchantable timber volumes are at or above those identified in the Departmental Range Improvement Guidelines.

# 4.2.5 Mineral Resources

### Guideline

Known or suspected quantities of sand and gravel will be noted to ensure any future disposition is made subject to the removal of the sand and gravel resource.

# 4.2.6 Watershed Resources

## Objective

To prevent unnecessary reconstruction costs by encouraging construction of homes and facilities off the floodplains.

# 4.3 Multiple Use Zone

#### Zone Intent

This zone will provide for a suitable mixture of land uses so that a flow of renewable and non-renewable resource benefits are derived.

# 4.3.1 Timber Resources

#### Objectives

- 1. To retain all possible moderate and high capability timber areas for sustained yield production of coniferous and deciduous timber.
- 2. To retain areas with existing natural coniferous and deciduous stocking as growing stock for the perpetuation of quota and deciduous allocation commitments.
- 3. To protect areas where investments in the form of intensive forest management projects have been made.

- 4. To designate portions of the Faust afforestation project area as a Community Farm Woodlot.
- 5. To carry out liquidation cutting of timber in an orderly and timely manner on public lands identified for clearing in relation to improved grazing.

## Guidelines

Continued forest productivity will be ensured through:

- application of intensive forest management techniques where warranted;
- reclamation of surface disturbances; and
- reforestation of harvested stands according to existing AFS policy.

## 4.3.2 Grazing Resources

### Objectives

- 1. To provide for a portion of the demand for improved grazing in accordance with the existing Alberta Forest Service range management policy and eligibility criteria in the Multiple Use Zone.
- 2. To make available suitable grazing land for dispositions under small-scale improved and unimproved leases, licences and permits to meet a portion of the local demand.
- 3. To increase the productivity of low capability native grasslands on an individual user basis.
- To ensure that range management is compatible with other landuses.

## Guidelines

- 1. Applicants for grazing dispositions will be encouraged to apply for areas in the Grazing Development Zone and Agricultural Development Zone prior to Multiple Use Zone allocations.
- 2. Each parcel of land being considered for a grazing disposition will receive a detailed field inspection.

- 3. Grazing management activities will use input from Alberta Forest Service forest management programs and from other agencies to integrate management concerns. The Alberta Forest Service will ensure that integration is achieved in grazing management activities by carrying out appropriate referrals.
- 4. All range improvement projects will require a Range Improvement Plan co-ordinated by the Alberta Forest Service and developed in accordance with the Range Improvement Guidelines.
- 5. Preference will be given to issuance of Forest Grazing Licences to minimize the need for compensation and provide for improved resource access for other users.

## 4.3.3 Fish and Wildlife Resources

## Objectives

- 1. To ensure productive and diverse habitat and minimize the loss of key habitat in the non-agricultural part of the planning area.
- 2. To maintain populations of furbearers and furbearing carnivores and to increase the harvest of these species.

### Guidelines

- 1. Review of development proposals will concentrate on keeping developments away from riparian habitat, key habitats and line-of-sight in clearings.
- 2. Access development will be planned to minimize loop roads.
- 3. Access necessary for resource development may require joint development and use by the various industrial users. All access will be recontoured following termination of use.

## 4.3.4 Watershed Resources

### Guideline

Existing operating restrictions on resource management activities will be implemented to protect watershed quality.

## 4.4 Grazing Development Zone

### Zone Intent

Public land in this zone is primarily intended for use as improved grazing land on a grazing disposition basis.

## 4.4.1 Grazing Resources

#### Objectives

- 1. To make available for grazing, public land that is shown to be marginal for cultivation, and for which annual cultivation would create a conservation concern.
- 2. To strengthen existing farm units where possible by making adjacent public land parcels available for cultivation and grazing use.
- To ensure that range management is compatible with other landuses.
- 4. To make suitable grazing land available for disposition as small-scale improved and unimproved leases, licences and permits to meet a portion of the local demand in the portion of this zone that is in the Green Area.
- 5. To increase the productivity of low capability native grasslands on an individual user basis.

#### Guidelines

- 1. According to the established referrals system, an interagency review of each parcel of land will lead to a final assessment.
- 2. All range improvement projects will require a Range Improvement Plan co-ordinated by the Alberta Forest Service and Public Lands Division and developed in accordance with the Range Improvement Guidelines.

3. Preference will be given to issuance of Forest Grazing Licences to minimize the need for compensation and provide for improved resource access for other users.

## 4.4.2 Timber Resources

## Objective

To provide a deciduous and coniferous timber supply for community use through the Community Farm Woodlot program.

## Guidelines

- 1. Merchantable coniferous and deciduous timber on land found suitable for improved grazing will be disposed of through liquidation cutting prior to range improvement.
- 2. Forested land, when found unsuited to improved grazing development, will be retained wherever possible for possible inclusion in a Community Farm Woodlot program. The decision to include such land as a Community Farm Woodlot will be based on whether stocking levels and merchantable timber volumes are at or above those identified in the Departmental Range Improvement Guidelines.
- 3. Areas of significant stocking of white birch in Township 72, Range 9 will be subject to liquidation cutting in response to range improvements plans on a grazing disposition.

## 4.4.3 Fish and Wildlife Resources

## Objectives

- 1. To maintain a mosaic of wildlife habitat throughout the grazing areas.
- 2. To manage the increased deer population that results from agricultural expansion in the agricultural portion of the Grazing Development Zone.

3. To maintain populations of furbearers and furbearing carnivores (except bears and wolves near settled areas) and to promote optimal harvest of these species.

### Guidelines

- 1. A mosaic of wildlife habitat will be maintained throughout this zone by the establishment of ecological corridors on streams, the creation of conservation reservations and the retention of key habitat or unique areas as public land. (Unique areas include migration corridors, mineral licks and dancing grounds.)
- Review of development proposals will concentrate on keeping development away from riparian habitat, key habitats and lineof-sight in clearings.
- 3. Access necessary for resource development may require joint development and use by the various industrial users. All access will be recontoured following termination of use.
- 4. Access development will be planned to minimize loop roads.

## 4.4.4 Mineral Resources

#### Guideline

Known or suspected quantities of sand and gravel will be noted to ensure any future disposition is made subject to the removal of the sand and gravel resource.

### 4.5 Conservation Zone

#### Zone Intent

Land in this zone is recognized as key habitat and/or an important conservation area in relation to maintenance of watershed integrity.

## 4.5.1 Fish and Wildlife Resources

## **Objectives**

- 1. To maintain the biological integrity of the south shore of Lesser Slave Lake.
- 2. To ensure productive and diverse habitat and to minimize the loss of key habitat in this zone.
- 3. To maintain populations of furbearers and furbearing carnivores (except bears and wolves near settled areas) and to optimize the harvest levels of these species.

### Guidelines

- 1. Development of linear facilities (pipelines, electric transmission lines, roads) will be minimized.
- 2. Permanent access development associated with petroleum and natural gas exploration and development will be discouraged.
- 3. Access necessary for resource development may require joint development and use by the various industrial users. All access will be recontoured following termination of use.

## 4.5.2 Grazing Resources

## Guidelines

- 1. According to the established referrals system, an interagency review of each parcel of land will lead to a final assessment.
- 2. Unimproved grazing may be permitted depending on site specific concerns. Existing grazing use, whether improved or un-improved, will continue indefinitely.
- 3. In portions of the Conservation Zone along the Swan and Driftpile Rivers, no new grazing dispositions will be permitted.
- 4. Hay permits will be considered in the Conservation Zone along Lesser Slave Lake.

## 4.5.3 Mineral Resources

# Guidelines

- 1. Exploration and development for non-renewable resources may occur in this zone.
- 2. Known or suspected quantities of sand and gravel will be noted to ensure any future disposition is made subject to the removal of the sand and gravel resource.

# 4.5.4 Timber Resources

# Guideline

Timber harvesting will be restricted to selective cutting or small-scale clear-cutting in suitable areas.

### 5. IMPLICATIONS

The establishment of the Agricultural and Grazing Development Zones reinforces the commitment in the Terms of Reference to expand the agricultural land base of the study area. By making relatively large amounts of previously unavailable public land available for agricultural dispositions, the local demand should be met. Because of the expense of providing access and clearing land, it is expected that the annual increment of development will be small in relation to the total area available. It is also expected there will be considerable variability in the focus of expansion activity. Public land adjacent to the Swan River Valley, while generally of lower capability than expansion areas in the western half of the study area, will initially be in strong demand.

Through establishment of the Agricultural Development Zone, 15 090 ha (58.3 sq. mi.) of moderate capability public land<sup>1</sup> is made available. This is in addition to 5 440 ha (21 sq. mi.) of public land of low agricultural capability. In the Grazing Development Zone, 259 ha (1 sq. mi.) of moderate capability agricultural public land will be made available along with 3640 ha (14.8 sq. mi.) of low capability land.

Timber resources in the agricultural zones are to be subject to liquidation cutting. Where feasible, coniferous and deciduous timber will be salvaged for economic use before agricultural disposition. Public land with more than  $860 \text{ m}^3$  of timber per quarter section will be reserved from disposition until the timber is liquidated. Such liquidation cutting will be co-ordinated with agricultural disposition priorities. The land that has been reforested under the Faust

<sup>&</sup>lt;sup>1</sup>Both moderate and low capability lands are considered suitable for till crop agriculture. Low capability land would, in most cases, prove more suited to improved grazing and forage production.

afforestation project remains in the Multiple Use Zone and Green Area and will be designated as a community farm woodlot.

Fish and wildlife resources in the Agricultural and Grazing Development Zones will be protected by the placement of ecological corridor agreements on important areas of habitat, by public land reservations and by retention of key habitats as public land. These agreements ensure the maintenance of habitat, primarily along small streams, both on leased public land and on public land that is to be sold. Agricultural clearing inevitably causes a reduction of habitat and wildlife populations. Through careful retention of habitat, however, the natural populations can be stabilized at a lower level rather than lost.

There will be a change in the recreational use of the Agricultural and Grazing Development Zones as development proceeds. Hunting and trail recreation will be diminished while access for fishing will be improved. With the clearing of more land, it is possible that the potential for deer and game-bird hunting may be enhanced.

Petroleum and natural gas activity in the agricultural zones will be subject to right of entry, well spacing and land reclamation standards that are normal for the settled areas of the province. Before leasing or selling land, the potential for development of the aggregate resource will be investigated.

The primary implication of zoning for multiple use in the planning area is the commitment to maintain a relatively large portion of the area under sustained yield timber management. Within the Multiple Use Zone, the resource management status quo is maintained. This zone will be managed primarily for coniferous and deciduous timber production and small-scale improved and unimproved grazing.

The management of the area will also be directed at enhancing the fisheries and wildlife productivity to compensate for the loss of habitat in the areas of agricultural expansion.

Recreation will be provided for if this zone becomes the focus for demand. Water quality and quantity will be managed in relation to development activities in the zone to ensure minimal adverse disruption. A watershed monitoring program may be established in the Slave Lake Forest and the major streams in the planning area would be included in this information-gathering exercise. The Multiple Use Zone includes approximately 11 000 ha (44 sq. mi.) of moderate and low capability agricultural land. While some of this land may be available for improved grazing, it is expected that most of the land will be managed for non-agricultural uses.

Conservation Zones along the shore of Lesser Slave Lake and the major streams in the planning area include only vacant and leased public land. In keeping with the intent statement for these zones, only minor disturbances will be permitted. Retention of a natural environment in these zones will aid in maintenance of wildlife populations and stream water quality.

Uses that may be permitted include unimproved grazing or selective logging. Trade-offs for renewable resource development in the Conservation Zones are relatively minor. A number of environmental constraints such as rough topography, periodic flooding and poor soils are inherent limiting factors for renewable resource development within this zone.

Petroleum and natural gas exploration and development activity will be subject to site-specific conditions as required to protect wildlife and wildlife habitat and to maintain soil stability.

It is understood by the participants in the planning process that the shift in status quo resulting from land-use zoning will have implications for the resource base. These implications were reviewed by the planning team and Resource Integration Committee through an analysis of the resource trade-offs during development of the Resource Management Policy for the Frost Hills Local Integrated Resource Plan. Trade-offs were quantified for timber and agricultural land resources. A more generalized discussion of the trade-offs for the fish and wildlife, watershed, recreation and mineral resources occurred in relation to development of the zoning options.

The discussion of zoning implications in the preceding sections relates to the overall resource potential of each resource in each zone. Table 2 summarizes the impact on the resource potentials in each zone as a result of the change in the status quo.

Table 2

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## SUMMARY OF ZONING IMPLICATIONS

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Zones Resource Potential	Agricultural Development	Grazing Development	Lakeshore Conservation	Stream Conservation	Multiple Use
Timber			$\diamond$		$\diamond$
Recreation			0	0	$\diamond$
Watershed			0	0	$\diamond$
Fishery			0	0	$\diamond$
Wildlife			0		$\diamond$
Habitat			0		$\diamond$
Till Crops		$\diamond$			$\diamond$
Improved Grazing					$\diamond$
Unimproved Grazing	0	0	$\diamond$	$\diamond$	$\diamond$
Aggregate	$\diamond$	$\diamond$			$\diamond$
Oil and Gas	$\diamond$	$\diamond$			$\diamond$

- Resource Potential Strongly Enhanced
- Resource Potential Slightly Enhanced
- $\Diamond$  Resource Potential Not Significantly Affected
- □ Resource Potential Slightly Restricted or Diminished
- Resource Potential Strongly Restricted or Diminished

#### 6. PLAN MANAGEMENT

General administrative procedures and mechanisms required for plan management, monitoring and amendment are outlined in this section. Detailed program and project implications and associated benefits and costs incurred as a result of this plan will be contained in a supplemental implementation document. This document, subject to approval by the Government of Alberta, will complement the plan.

#### General Administration

The Frost Hills Local Integrated Resource Plan will operate within the terms of appropriate legislation, regular programs and activities of the government, operational plans, specific developed projects, referral processes and administrative bodies. The zones provide a means of processing applications for new public land dispositions within the planning area. Existing systems for referral and interdepartmental review will apply to the plan. Resources will continue to be administered by the departments responsible, in line with the provisions of the plan including resource management guidelines and any subsequent operational plans.

Participating government management agencies will have several responsibilities to ensure the effective delivery of this plan. It will be their responsibility to deal with any conflicts or concerns with respect to implementation or interpretation of any of the plan's provisions. The responsibilities are outlined by subject area below.

<u>Referral Systems</u>: Participating government management agencies will ensure that existing referral systems of the Alberta government are adequate to encompass all affected or concerned agencies.

<u>Plan Monitoring</u>: The Frost Hills Local Integrated Resource Plan will be reviewed annually by the Peace River Regional Resource Management Committee to:

-- assess the relevancy of the stated resource objectives in light of changing conditions;

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- -- assess the resource management guidelines and referral procedures;
- -- assess agency operational plans to ensure their consistency with the resource management area intents, objectives and guidelines; and
- -- recommend amendments to the IRP and future actions required to maintain or promote government resource management activities in the planning area.

An annual report will document changes in the plan. The report will also highlight the previous year's activity in the planning area, including the number, type and location of referrals and what conflicts or concerns were addressed and resolved. The report will also indicate what might be expected to be accomplished in the planning area during the next year. The report may be deferred if it is not needed because of a lack of activity or progress on government resource management objectives within the planning area.

A major plan review by the Peace River Regional Resource Management Committee will occur at five-year intervals to facilitate:

- -- a comprehensive assessment of all aspects of the plan, including but not limited to broad resource management objectives and zone boundaries and intents;
- -- a public review on the same basis as the public is involved in the development of new integrated resource plans; and
- -- a statement recommending amendments to the plan and future actions required to maintain or promote government resource management activities in the planning area.

A report will document all amendments. Major plan reviews may be undertaken more or less frequently than every five years if major resource policy commitments or developments of program initiatives require them.

Amendment Procedures: Changes to the planning area boundary, broad planning area resource management objectives, the land-use zoning and intents will require major amendment to the plan. An amendment to the plan may be required as a result of an annual review, major five-year review, government request or as a result of a request from

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an individual, group or organization outside the government. Proposed amendments to the plan from outside the government should be made by formal application to the Assistant Deputy Minister of the Resource Evaluation and Planning Division, Alberta Energy and Natural Resources.<sup>2</sup> Opportunities for public review of proposed amendments to the plan will be provided before changes are approved by the government. Amendments which entail a major policy decision or a change to the basic intent of the plan may be forwarded by the Associate Minister to the Cabinet Committee for approval.

<sup>&</sup>lt;sup>2</sup>Guidelines for preparing requests for amendments to integrated resource plans are available upon request.