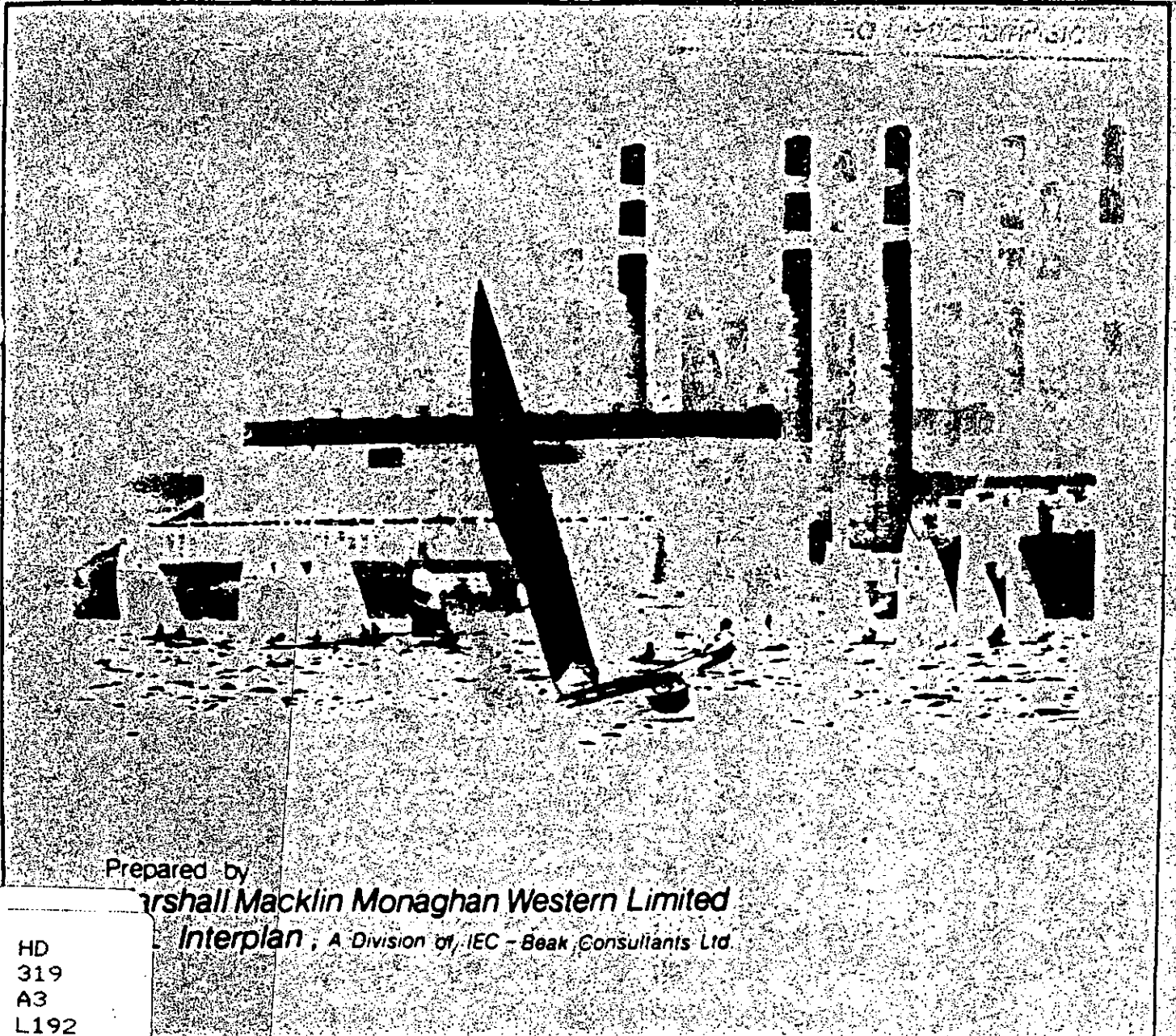


Lake Wabamun Management Plan:

Prepared for
Yellowhead Regional Planning Commission



Prepared by
Marshall Macklin Monaghan Western Limited
Interplan, A Division of IEC - Beak Consultants Ltd.

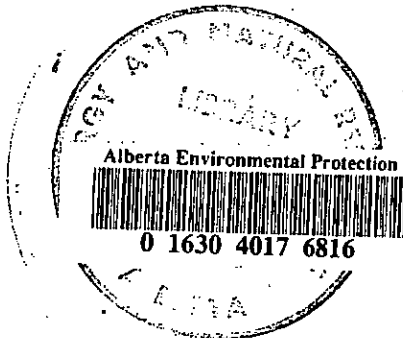
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Photo Acknowledgement: Sailing Regatta on Lake Wabamun,
Mike Pinder,
Edmonton Journal, 1984.



Alberta
ENVIRONMENTAL PROTECTION
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LAKE WABAMUN MANAGEMENT PLAN

Prepared for:

**Lake Wabamun Management Plan
Steering Committee:**

Yellowhead Regional Planning Commission
County of Parkland
Village of Wabamun
Summer Village of Betula Beach
Summer Village of Kapasiwin
Summer Village of Lakeview
Summer Village of Point Alison
Summer Village of Seba beach

Prepared by:

**Marshall Macklin Monaghan Western Limited
ICL - Interplan, A Division of IEC Beak Consultants Ltd.**

February 1985

ACKNOWLEDGEMENTS

Many people provided invaluable input and advice during the preparation of the Lake Wabamun Management Plan. We would like to acknowledge the assistance and co-operation received from the members of the Lake Wabamun Steering Committee and Technical Advisors:

Steering Committee

Mr. Ken Fuhr	- Committee Chairman
	- Yellowhead Regional Planning Commission
Mr. Tom Brusnyk	- Village of Wabamun
Mr. Mark Chechotko	- County of Parkland
Mr. Harold Fraser	- Summer Village of Lakeview
Mr. Don Green	- Summer Village of Seba Beach
Mr. Paul Hartman	- Summer Village of Point Alison*
Mrs. Barbara Kane	- Summer Village of Kapasiwin
Mr. Dennie Ross	- Summer Village of Betula Beach

* Representative of Summer Village of Point Alison was a non-voting member.

1983 Members

Mr. George Mann	- County of Parkland
Mr. Don Stadnick	- Village of Wabamun

Technical Advisors

Mr. Grahame Allen	- Director, Yellowhead Regional Planning Commission
-------------------	--

Mr. Dom Ruggieri - Project Co-ordinator, Yellowhead
Regional Planning Commission

Mr. Robin Moorhead - Planner, Yellowhead Regional
Planning Commission

Mr. Pat Harrington - Planner, County of Parkland

Their critical evaluation and direction has resulted in a document which recognizes and reconciles, where possible, land and water use issues of people who use and live at or near Lake Wabamun.

The participants on the Lake Wabamun Advisory Group -- representatives of reporting government agencies, interest groups, industry, and recreational developments around the lake -- have provided both baseline information, technical advice, and comments on the draft reports. We especially appreciate their unending co-operation and above all, interest in the plan.

Lake Wabamun Advisory Group

Alberta Agriculture

Alberta Energy and Natural Resources

Alberta Environment

Alberta Recreation and Parks

Alberta Transportation

Alberta Tourism and Small Business

Association of Summer Villages of Alberta

Canadian National Railways

Department of Indian & Inuit Affairs (Paul Indian Band -
invited to participate but declined)

Edmonton Yacht Club

Energy Resources Conservation Board
Fish and Game Association
Lake Wabamun Home Owners Association
Lake Wabamun Preservation Association
Lake Wabamun Water Level Committee
Rosewood - Sundance Environmental Society
Royal Canadian Mounted Police
Stony Plain - Lac Ste. Anne Health Unit
Sunshine Bay Sailing Club
Trans-Alta Utilities
Wabamun Sailing Club

Finally, we extend our thanks to the property owners in the watershed who have completed the questionnaire survey and who have attended the workshop, open house, and public meetings.

The Lake Wabamun Management Plan has been prepared by the firms of Marshall Macklin Monaghan Western Limited and ICL - Interplan Consultants (A Division of IEC Beak Consultants Ltd.). Mr. H. Keith Driver of Keith Driver and Associates Ltd. was the planning specialist retained by Marshall Macklin Monaghan Western Limited on the Project Team.

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Mr. Wayne H. Tuck, PEng - Project Engineer, MMM
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Analyst, ICL
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Mr. Henry S. Radomski, BAA - Geographer ICL
Ms. Laurie Bourdin - Word Processor Operator, ICL
Ms. Janet Fouts - Cartographer
Ms. Chris Watzke - Cartographer

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Figure 1.1 Summary of Work Program:
Lake Wabamun Management Plan

Introduction

1.0 INTRODUCTION

Lake Wabamun, located west of Edmonton, has the widest range of land and water users of any lake in Alberta. It is one of the most popular recreational lakes in the province, and receives extensive use from residents of nearby Edmonton. It is the home of a number of permanent residents, and the lake provides cooling water for thermal power generation. The wide variety of users (i.e. industrial, residential, recreational, and agricultural) has given rise to numerous complex problems of land, water use allocation, and environmental nature.

Lake Wabamun is one of the most studied lakes in the province. Throughout the 1970's, there were numerous studies completed by industry and government related to heated water discharge from the TransAlta thermal plant, weed growth/control, eutrophication and aquatic resources. A number of other environmental assessments and reclamation plans for the power plants and associated coal mines have also been completed in recent years. There have been surveys of recreational use and recreational demand, and studies of shoreline type and fluctuating water levels. However, in general, the studies were either site specific or issue specific, with only limited attention given to the development of a comprehensive set of policies to manage the resources of Lake Wabamun and its Watershed.

In 1980, the Lake Wabamun Watershed Advisory Council was established to examine future land and water management practices to help maintain or improve water quality. The final report presented to the Minister of Environment in September 1983 outlined environmental and land use issues in

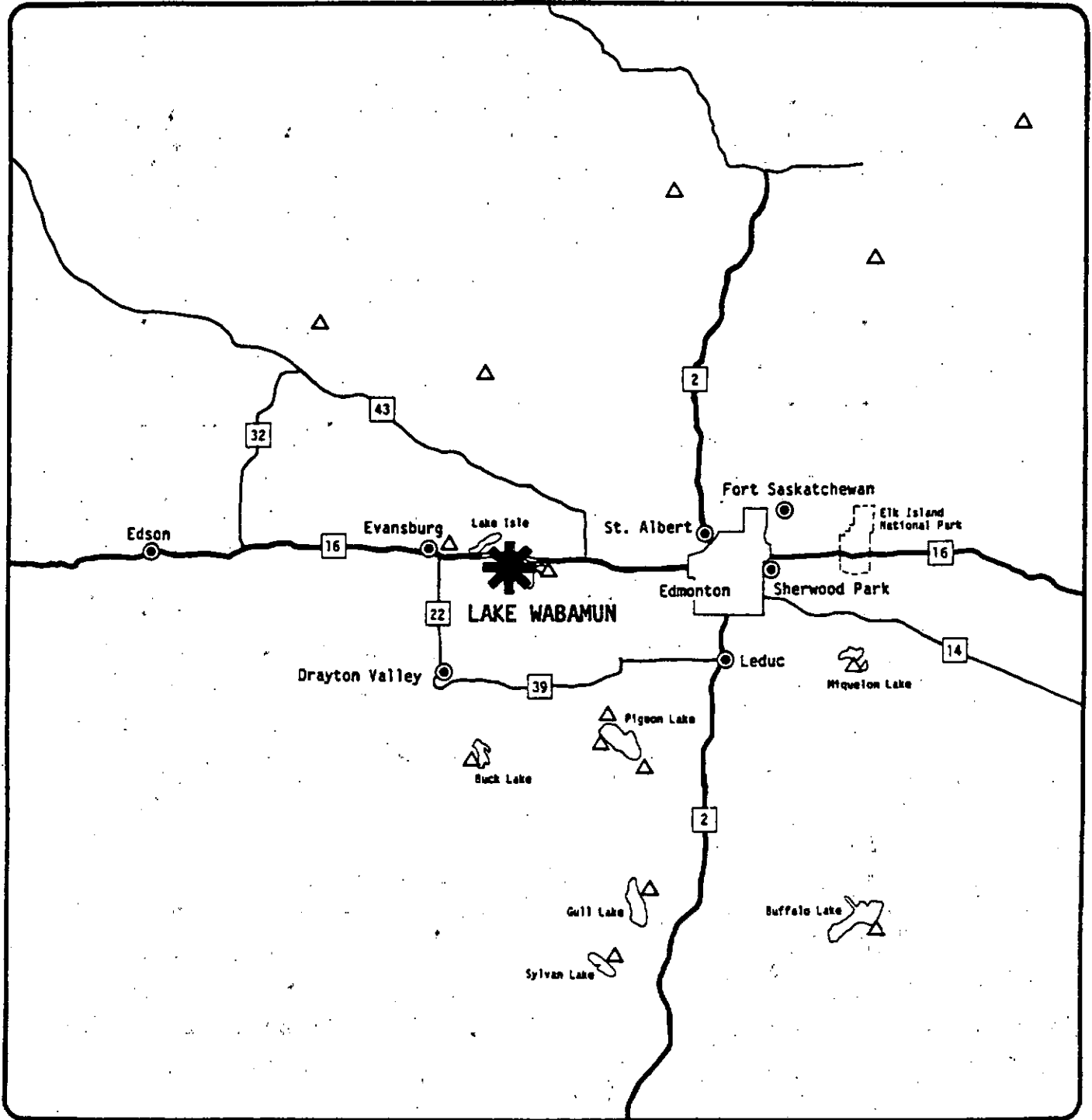
the watershed and presented conclusions and recommendations to address these issues. One of the recommendations was that a Lake Management Plan be prepared and implemented to guide future land use and development, as well as to address surface water use on Lake Wabamun.

In October 1983, the Yellowhead Regional Planning Commission, in conjunction with the County of Parkland, the Village of Wabamun, and the Summer Villages of Betula Beach, Kapasiwin, Lakeview, Point Alison, and Seba Beach commissioned the consulting firms of Marshall Macklin Monaghan Western Limited and ICL - Interplan Consultants (A Division of IEC Beak Consultants Ltd.) to work with them to prepare the Lake Wabamun Management Plan. The project extended over the course of a year in order to maximize public involvement throughout its duration.

1.1 Regional Setting

Lake Wabamun, located within a one hour drive west of Edmonton, is one of the most popular recreational lakes in central Alberta. Highway 16 and the regional road system provide convenient access to 950,000 regional residents within a one and one-half hours driving time (Map 1). Being situated near this interprovincial corridor creates further demands for summer recreational uses by the travelling public.

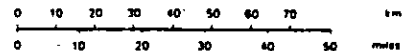
Within the watershed, there are seven municipal jurisdictions: the County of Parkland, Village of Wabamun, five summer villages: Betula Beach, Kapasiwin, Lakeview, Point Alison and Seba Beach. The Yellowhead Regional



Regional Setting

1

△ Provincial Parks



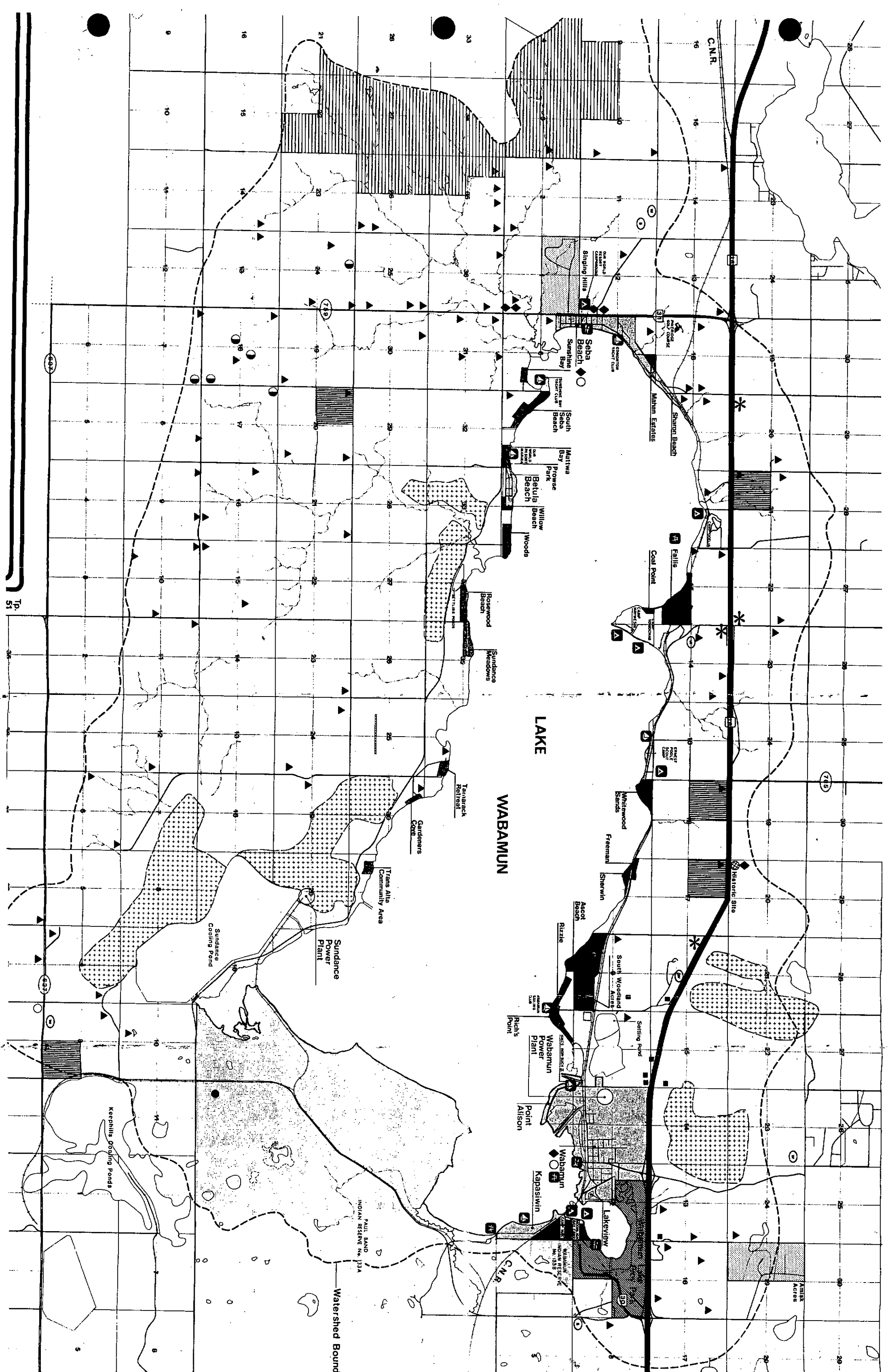
Planning Commission provides regional planning services to the municipalities. In addition, the Wabamun Indian Reserve, home of the Paul Indian Band, is located within the watershed on the eastern shoreline.

The existing types and levels of development are presented on Map 2. Upon review, it is evident that Lake Wabamun, particularly the north and west shores, are extensively developed. A detailed analysis is provided in the Technical Report and is summarized in Appendix A.

1.2 Planning Process

A systematic and comprehensive work program was employed to prepare the Lake Wabamun Management Plan. The key tasks, completed in the three phase planning process and summarized in Figure 1.1, include:

- identification of local issues and concerns;
- a meaningful and effective public involvement program;
- assessment of environmental resources, land use, and infrastructure;
- formulation and evaluation of alternative management strategies; and
- preparation of the Lake Wabamun Management Plan and implementation program.



C.N.R.

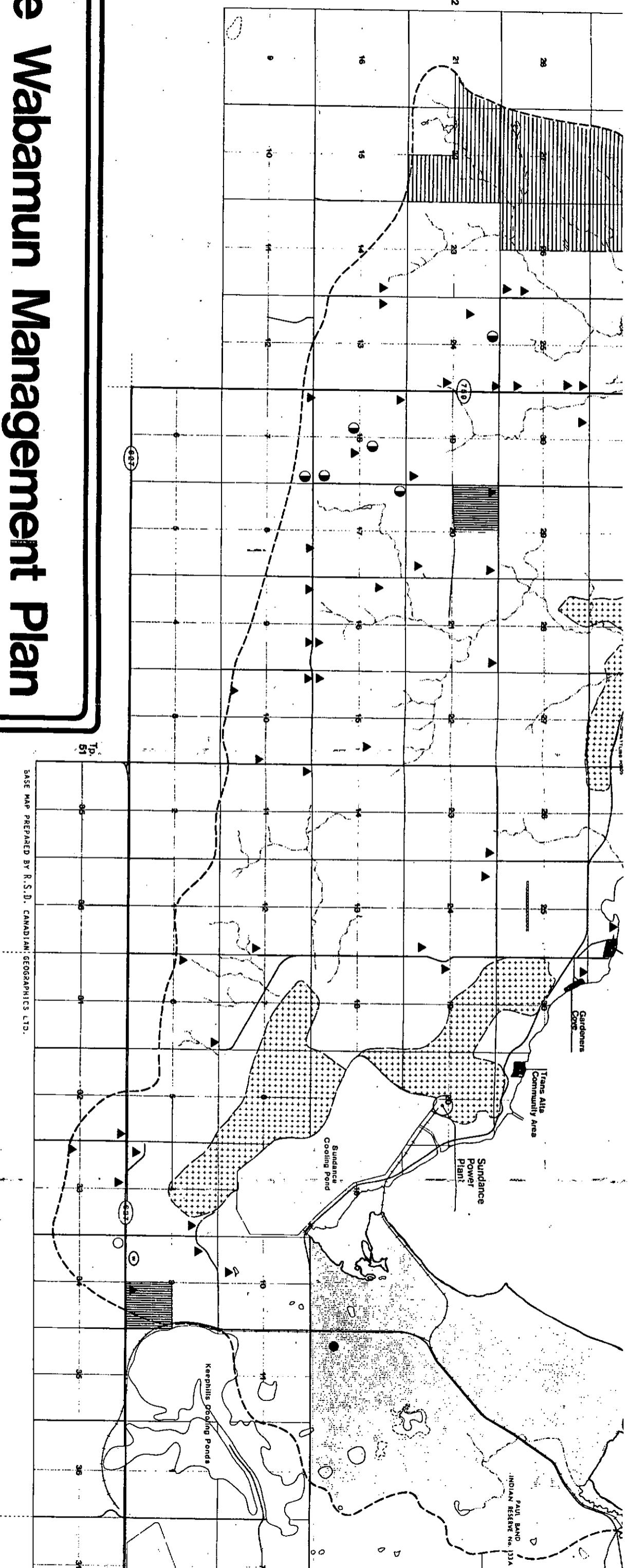
WABAMUN LAKE

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PAULI BAND INDIAN RESERVE No. 117A

Watershed Bound

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BASE MAP PREPARED BY R.S.D. CANADIAN GEOGRAPHICS LTD.

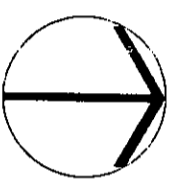
Lake Wabamun Management Plan

Yellowhead Regional Planning Commission

EXISTING LAND USE



Yall Macklin Monaghan Western Limited
CL Interplan



- AGRICULTURE**
 - Intensive Livestock Operation
 - Jackpine Grazing Reserve
- RESIDENTIAL**
 - Farm Dwelling/Building
 - Village or Summer Village
 - Cottage Subdivision
 - Country Residential Development
- RECREATIONAL**
 - Institutional Facilities
 - Provincial Park
 - Boat Launch/Pier
 - Municipal Recreation Areas
 - Sailing and Boating Facility
- INDUSTRIAL**
 - Industrial Operation
- COMMERCIAL**
 - Local Highway
- INSTITUTIONAL**
 - School, Church, etc.
- INDUSTRIAL/RESOURCE EXTRACTION**
 - Gravel Pit
 - Completed Oil Well
 - Completed Gas Well
 - Active/Disturbed Coal Mining Area
- INDIAN RESERVES**
- WASTE MANAGEMENT**
 - Sewage Lagoon
 - Solid Waste Disposal
- ROADS**
 - Airstrip
 - Yellowhead Route
 - Primary Highway
 - Secondary Road

The evaluation of the environmental resources, such as soil conditions and vegetation, were based upon the data compiled for the Wabamun Lake Management Plan Phase One: Information Collection and Preliminary Evaluation Study (Pedology Consultants and R.S.D. Canadian Geographics Ltd. 1983). Refinements of certain data, such as the existing land uses, slopes and agricultural lands, were undertaken to supplement the Phase 1 report.

1.3 Public Involvement Program

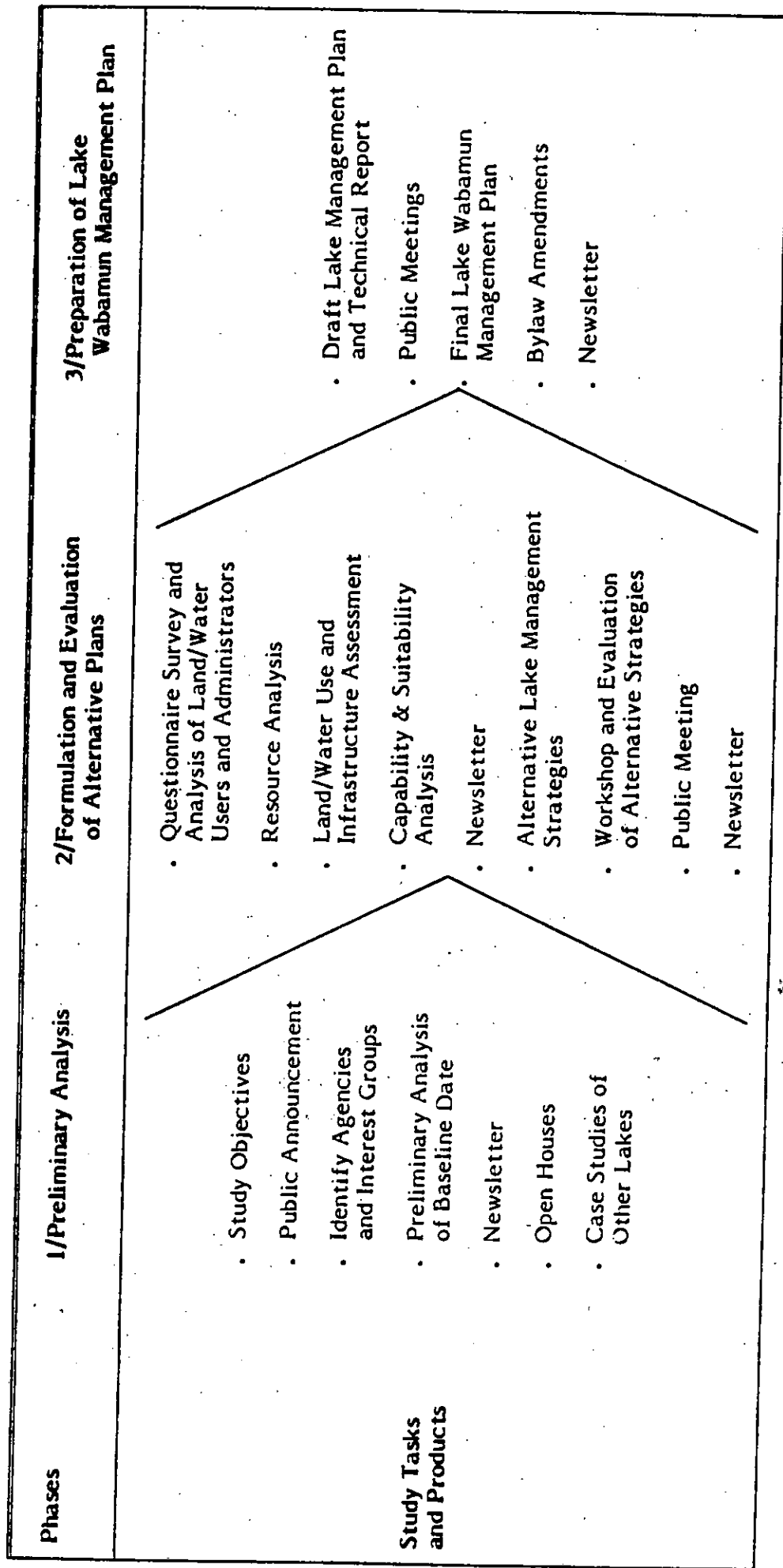
A public involvement program was conducted in conjunction with the preparation of the Lake Wabamun Management Plan. The program combined six different mechanisms to ensure that property owners, lake users, and interest groups had sufficient opportunity to provide meaningful input to the formulation of the plan and to review suggested policies and the implementation program. These mechanisms are described in the following six steps.

1. Open house meetings were held in Edmonton and the Village of Wabamun, at the commencement of the planning process, to acquaint people with the purpose of the plan and to talk to them about lake management issues and concerns. Although attendance at these meetings was very low, the participants identified a number of important issues to be considered in the plan.
2. A mail back questionnaire survey was sent to all property owners in the Lake Wabamun watershed. The questionnaire had two purposes; first, to obtain

factual information about land ownership, land uses, infrastructure, and present and future use; and second, to obtain a cross-section of opinions regarding issues and potential management practices. Over 1600 questionnaires were mailed, and the response rate was 48%, which is considered quite high for a general mail back survey.

3. At the outset of the plan preparation stage, personal interviews were held with representatives of government agencies and interest groups active at the lake. The government agencies were requested to provide policy information, use statistics, and reports or data relevant to the Lake Wabamun Management Plan. The interest groups were asked to provide level of use statistics, plans for future development, and opinions regarding issues and management practices. Ongoing contact was maintained with these groups throughout the plan preparation.
4. A one-day workshop session was held at the Village of Wabamun to discuss and evaluate the draft management strategy and suggested policies for Lake Wabamun. The workshop was well attended, with thirty-five representatives of provincial, federal, and municipal governments and interest groups in attendance. Many of the suggestions arising out of the workshop were incorporated in the policies of the Lake Wabamun Management Plan.
5. Two public meetings were held to review the draft plan. At the first, draft policy statements were presented to

Figure 1.1 Summary of Work Program: Lake Wabamun Management Plan



about 90 people for their review and comment. Many useful suggestions were made, and as a result, refinements were made to the draft policy statements. At the second meeting, discussion focused on the implementation of the plan and specific policies. About 100 people attended the second series of meetings, which were held in both the Village of Wabamun and the Summer Village of Seba Beach.

6. Four newsletters were sent out to property owners, interest groups, and government agencies during the year that the plan was being prepared to keep them aware of the progress of the plan. A mail back section was used by many people to submit comments or suggestions to the Steering Committee.

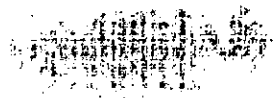
1.4 Organization of the Study Results

There are two reports resulting from the study: the Technical Report and the Lake Wabamun Management Plan. This document, the Lake Wabamun Management Plan, presents the goals and objectives for the management and development direction, specific policies, and an implementation program to guide the development and use of the land and water resources of Lake Wabamun over the next 10-20 years. A summary of the resource land use and present and potential level of use analysis is also included in the Appendix.

The Technical Report, bound under a separate cover, should be referred to with the Lake Wabamun Management Plan for detailed assessments. It provides the background analyses

which were used as building blocks in the preparation of the lake management plan. In particular, the results of the resource and land use analysis are fully presented, ratepayer questionnaire results are documented, and the alternative management strategies are described and evaluated.

Goals and Objectives of Plan



2.0 GOALS AND OBJECTIVES OF THE LAKE WABAMUN MANAGEMENT PLAN

The purpose of the Lake Wabamun Management Plan is to provide clear overall short and long term direction concerning the scope and degree of management and development desired within the Lake Wabamun Watershed. The strategy addresses the interests of the people who use the lake, as well as the inherent physical constraints and opportunities of the environmental and man-made resources.

The following section describes the goals and objectives of the Lake Wabamun Management Plan which establishes an overall framework for the management and development policies outlined in Section 3.0. In addition, the issues and directions taken in the Plan are highlighted. The land use district descriptions and future land use map provide a graphic representation of the plan.

2.1 Goals of the Lake Wabamun Management Plan

The Lake Wabamun Management Plan is the synthesis of a variety of often conflicting forces concerning the future management of the watershed. Generally, the local rate payers preferred that only limited additional residential and recreational developments be permitted around Lake Wabamun and expressed a strong desire that action be taken to maintain or improve the physical quality of the lake itself (i.e. water quality, lake levels, wildlife and fisheries and aesthetics). In contrast, there is a significant large public demand for recreational facility and residential

cottage development because of the strong appeal of Lake Wabamun as a regional recreational resource. This demand is considered to be much greater than the lake resources could accommodate physically and socially, while maintaining or improving the quality of the lake and its resources. Thus, the culmination of the direction received from the Lake Wabamun Steering Committee, local interest groups, the general public and the Advisory Group has resulted in goal statements which define the best balance of all these complex forces.

The goals of the Lake Wabamun Management Plan are twofold.

First, the Plan strikes at the heart of resource management issues and problems facing Lake Wabamun residents and regulatory agencies. It calls for stronger and more effective management of the natural environmental resources in the watershed with the aim to improve, in the long term, the overall quality of the lake through actions such as nutrient control measures.

Second, the Plan allocates lands within the watershed for suitable and complementary developments (e.g. recreational and residential) in a systematic and controlled manner. The final result is a balance between effective resource management and controlled growth in recreational and residential land development.

2.2 Objectives of the Lake Wabamun Management Plan

The overall goals can be defined more specifically as a series of objective statements. Embodied in these objectives are the critical issues that result from the complex and competing forces facing municipalities, local residents, industry and government agencies concerning the management of Lake Wabamun. Information was obtained and analyzed regarding the natural resources, existing land and water uses, infrastructure and future demands for recreation. Considerable data were provided by special studies by Alberta Environment on lake levels and nutrient loading. These data, when considered in the light of suggestions, advice, and recommendations from the various interest groups, Advisory Group and general public, led to the development of the following objectives for the management of Lake Wabamun.

- 1. Allocate areas for specific lake surface uses to alleviate user conflicts and increase the enjoyment of area residents and the general public;**
- 2. Increase the overall knowledge of area residents regarding Lake Wabamun and its management.**
- 3. Guide, in terms of type, scope and location, limited growth of residential and recreational developments in order to meet some of the public demand for recreation and alleviate user conflicts and maintenance problems.**
- 4. Provide policies to guide the implementation of the Lake Wabamun Management Plan, and to monitor its effectiveness as development and management controls are instituted.**

5. Allocate land and water uses within natural environment constraints and social considerations as defined by natural resource and land use evaluations and public input into the planning process.
6. Define major issues and prepare relevant policies within the context of a legally adopted and enforceable Lake Management Plan and associated federal and provincial enabling legislation.

2.3 Summary of Critical Lake Management Issues and Direction

The Lake Wabamun Management Plan defines a path to follow to best manage and develop the resources of the Lake Wabamun Watershed over the short and long terms. It addresses each of the twelve issues important to residents and establishes policies to effectively resolve them. These are summarized below.

1. Water Quality

A specific level of water quality is required to meet the minimum expectations and health requirements of the residents and other users of Lake Wabamun. The lack of strict enforcement of multiple provincial legislation concerning water pollution and approvals of sewage disposal systems, combined with a limited number of enforcement officers, has resulted in numerous violations. As a result, water quality problems are very important concerns to local residents and users of the lake; thus, the management plan must show awareness of and concern for this issue.

The Plan outlines policies regarding nutrients, thermal and other pollution sources which impact on the water quality of Lake Wabamun. Further, the Plan recommends actions to be taken by local residents, farmers, recreationists, industry and regulatory agencies to reduce the possibility of nutrients and contaminants entering the lake. The overall intent of the Plan, therefore, is to maintain and improve the water quality of Lake Wabamun for future generations.

2. Weed Control

The natural aging process of Lake Wabamun is characterized by weed growth. It has been accelerated by uncontrolled nutrient loading of the lake and is one of the most important management issues. The focus of the Plan is to regulate, on a voluntary or legislative basis, land uses to reduce nutrient impact in order to attack the problem at the source. Recommended policies are also provided concerning the management of the effects of weed growth by means of an appropriate and co-ordinated weed harvesting and removal program with provisions to protect important fisheries habitat. Finally, shoreline modifications are to be strictly monitored in order to eliminate nutrient rich materials entering the lake. In many instances, local residents must work together with regulatory agencies to minimize the nutrient loading problem which accelerates growth.

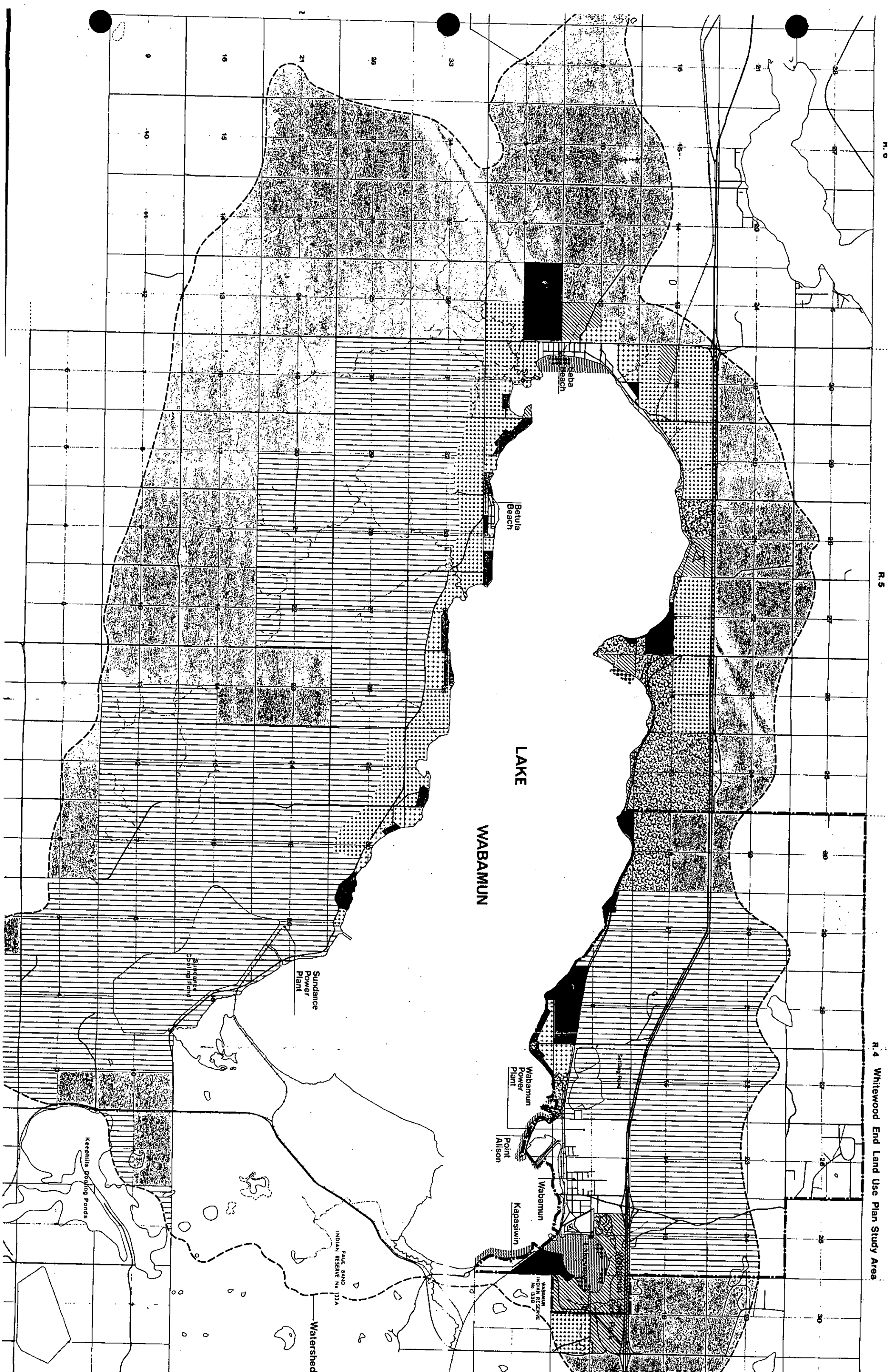
3. Lake Level

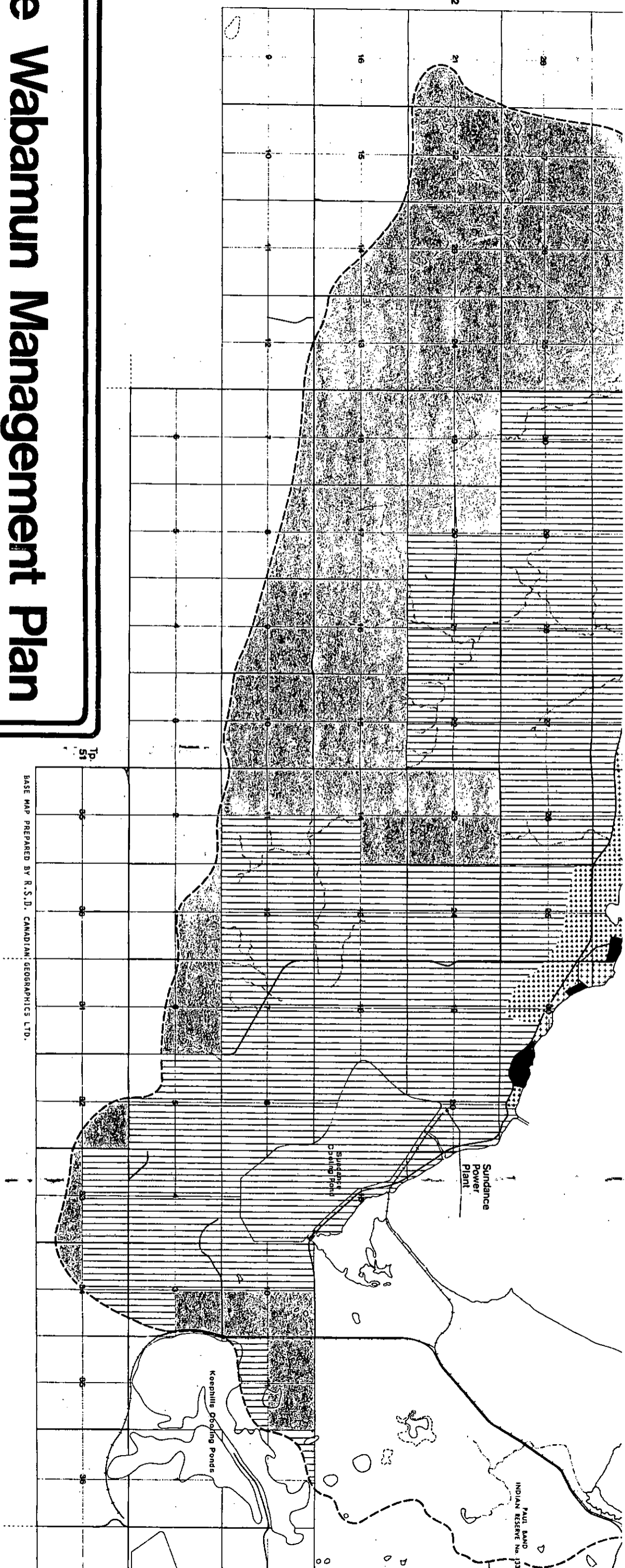
Fluctuating lake levels have been identified by local

residents as a major issue. In 1982, Alberta Environment commissioned the Wabamun Lake Level Advisory Committee to examine the feasibility of regulating the lake. The Committee concluded that it is not possible to significantly compress the one-metre total range of lake level fluctuation. A fixed weir could provide limited influence on lake levels by reducing the duration, frequency and, to some extent, the maximum elevation of high levels at the expense of increasing the frequency and duration of low levels and, to some extent, reducing the minimum elevation of low levels of the lake. The Committee identified the 1976 lake levels as being the most desirable to attain and prepared a preliminary design for a weir on Wabamun Creek to meet this objective. However, Wabamun Creek is located on the Paul Band Indian Reserve, and the Paul Band will not give permission to survey the creek until their Aboriginal Land Claim is settled with the Federal Government. The Plan recommends, as does the Wabamun Lake Level Report, that a public awareness program be undertaken to inform local residents about the reasons for lake level fluctuations, the limited degree of control that would be provided by a weir, and the effect of a weir on high and low lake levels. This would allow residents to account for water level fluctuations when designing and developing offshore and onshore structures.

4. Lake Surface Use and Public Lake Safety

Lake Wabamun is one of Alberta's most important water resources for swimming, sailing, motor boating, waterskiing, and a variety of other water-based activities. Conflicts among recreationists are becoming more common in recent years, and there is a general



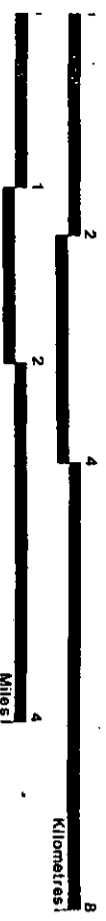


BASE MAP PREPARED BY R.S.D. CANADIAN GEOGRAPHICS LTD.

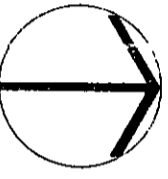
Lake Wabamun Management Plan

Yellowhead Regional Planning Commission

FUTURE LAND USE



hall Macklin Monaghan Western Limited
 CL Interplan



1. AS DESIGNED BY THE ERCB MINING PERMIT AREA ALL LANDS MAY NOT BE MINED
2. THE LAKE WABAMUN MANAGEMENT PLAN HAS NO LAND USE CONTROL WITHIN THE PAUL BAND WABAMUN RESERVE EVEN THOUGH ANY RECREATION AND TOURISM DEVELOPMENT WILL HAVE A SIGNIFICANT IMPACT ON THE LAKE AND POLICIES OF THE PLAN.
3. REFER TO POTENTIAL DEVELOPMENT AREA MAP FOR ALTERNATIVE LOCATIONS FOR RECREATIONAL FACILITIES, ETC.
4. REFER TO WHITWOOD END LAND USE PLAN FOR DETAILED LAND USE DESIGNATIONS.

- Urban Municipalities (Villages/Summer Villages)
- Urban Development District (Existing Subdivision)
- Residential Expansion District
- Resource Mining District (Mine Permit Area and Ind
- Agricultural Land Use District
- Recreational Management District 2,3
- Agricultural - Natural Environment District
- Natural Environment - Recreational District
- Registered Swimming Area
- Registered Boat Restriction Area (12km Boat Speed)

Note: It is suggested that an annual newsletter be distributed to ratepayers in the spring to increase the residents' awareness of water and air quality, and lake level monitoring program results. The Review Committee should monitor these information newsletters to ensure they are prepared and distributed.

6. that the Water Quality Control Branch of Alberta Environment, in co-operation with TransAlta Utilities, develop improved licensing standards and obtain continued compliance by TransAlta Utilities to reduce nutrient loading of the lake. This would include actions such as:

- . continue to comply with license standards for treatment of ash lagoon effluent;
- . diversion of Pit 02 sedimentation pond effluent into the cooling pond,
- . control of dust on mine haul roads and exposed berms, and
- . where feasible, diversion of agricultural runoff from the south side into the cooling or sediment ponds.

3.2 Weed Control Policies

Background

Generally, weed growth is a component of the natural aging process of any lake. However, weed growth can be accelerated by uncontrolled nutrient loading of the lake (i.e. excessive

2. that Alberta Environment release and publish the results of the Lake Wabamun Eutrophication Study for public distribution. In conjunction with Policy 3, a public awareness program be developed to inform ratepayers of the conclusions and recommendations of the study.
3. that the existing public information and education program conducted by Alberta Environment, on the nature of Alberta lakes and how the public can assist in maintaining or improving water quality, be encouraged for greater public distribution;
4. that Alberta Environment and the ERCB continue to enforce the conditions of TransAlta's thermal discharge agreement of 1981; and

Note: The conclusions of ERCB hearings indicated that TransAlta Utilities Ltd. would be permitted to discharge their heated wastewater and the proponent would be required to monitor and report discharge conditions to Alberta Environment. Weed control policies are discussed in Section 3.2.

5. that the Pollution Control Division of Alberta Environment, in conjunction with TransAlta Utilities Ltd., disseminate the results of the water quality monitoring program and weed harvest program as information to local municipalities and residents on an annual basis;

2. that the Stony Plain - Lac Ste. Anne Health Unit continue to monitor, on a weekly minimum basis from mid June to early September, the water quality at "public commercial bathing" areas on the lake, in accordance with the Commercial Bathing Places and Man-Made Beaches Regulations, to ensure health hazards are avoided; and

Note: "Public commercial bathing areas" are defined under the legislation as these areas where a fee is charged for use of the area.

3. that the Stony Plain - Lac Ste. Anne Health Unit be requested by individual municipalities to monitor water quality at "public non-commercial bathing" areas (e.g. Seba Beach) on a two-week minimum basis.

Note: The Health Unit will submit water samples to the laboratory for bacteriological analysis if they are delivered to their office.

Alberta Environment, Alberta Energy Resources Conservation Board and TransAlta Utilities Advisory Policies

The advisory policies to be adopted by Alberta Environment, the Alberta Energy Resources Conservation Board and TransAlta Utilities are:

1. that the existing regulations under the Agriculture Chemicals Act controlling the use and disposal of pesticides, herbicides, and other agricultural chemicals be enforced within the watershed by Alberta Environment;

fertilizer on residential lots within 0.8 km of the lake or a water course entering Lake Wabamun;

9. that, by bylaw, any harvested aquatic and terrestrial vegetation within 0.8 km of the lake or water course be removed and hauled to solid waste management sites;

Note: See Section 3.2, Policy 2.

10. that local farmers be encouraged to consult with Alberta Agriculture and Alberta Environment concerning the proper use of fertilizers in terms of:

- . appropriate season of use,
- . application rates,
- . application techniques, and
- . appropriate low or phosphorus free fertilizers; and

11. that, by bylaw, importation of fill to replace erosional areas be carefully monitored, and possibly restricted and enforced in consultation with Alberta Fish and Wildlife Division of Alberta Energy and Natural Resources.

Stony Plain - Lac Ste. Anne Health Unit Advisory Policies

The advisory policies to be enforced by the Health Unit are:

1. that no pit toilets in new subdivisions or undeveloped lots (at the time of adoption of the Plan) be permitted by the Stony Plain - Lac Ste. Anne Health Unit within 0.8 km of the lake or water course, unless an approved sealed holding tank design is used;

3. that all proposed methods of sewage disposal be designed to accommodate both grey and blackwater wastes and that residents be encouraged to dispose of grey water through these systems;
4. that the municipalities support the fullest enforcement of the conditions pursuant to the Planning Act, Subdivision Regulations, Water Resources Act, Public Health Act, and Plumbing and Drainage Act Regulations concerning sewage disposal and lot size for new developments; and
5. that a sewage pump-out system for deep-draft and cabin vessels be developed in conjunction with the federal pier or commercial marina;

Note: Potential locations of these facilities are identified in Policy Area 3.4:

Lake Surface Use and Public Lake Safety, point 4.

6. that, by bylaw, restrict cattle from watering at the lake or from stream courses;

Note: See Policy 1d, Section 3.6.

7. that all livestock producers in the watershed be encouraged to seek advice from the Alberta Agriculture and Alberta Environment concerning appropriate manure handling methods as outlined in "Code of Practice" - Certificate of Compliance Program;
8. that, by bylaw, prohibit the use of phosphorus

- . the amount of landscaping to be done on property, the type of vegetation, techniques to be used, and vegetation which is to be preserved,
 - . the use of off road vehicles,
 - . the devices to be installed to control or remove sediment from runoff due to changed soil surface conditions during and after construction, and
 - . the amount of land that should be exposed at any time during the development.
2. that each municipality, with the advice and direction of the Stony Plain - Lac Ste. Anne Health Unit, initiate a request for a water quality monitoring program of all subdivisions within an area of 0.8 km from the lake with emphasis on lake frontage properties, properties abutting water courses and drainage areas. The purpose of the program is to determine whether there are any contraventions of the Alberta Plumbing and Drainage Act Regulations relating to the provision of water, location of water wells, and sewage disposal systems. (The municipality should request the Stony Plain - Lac Ste. Anne Health Unit investigate, pursuant to the Public Health Act, known and potential problem areas and ensure that appropriate measures are completed to resolve the problems. The municipality should ensure that inspection is carried out by the appropriate authority.);

Policy Objective

The objective of the water quality policy is to maintain and improve the water quality of the lake through the proper management of thermal, nutrient, and other pollution sources, both on the water and surrounding the lake.

Policies for Municipalities

The management policies to be adopted and enforced by the municipalities are:

1. that municipalities should be encouraged to pass or amend land use bylaws and enter into agreements under Section 69 of the Planning Act authorizing the development control provisions. The Development Approval Authority should require each applicant submitting such a development proposal to enter into an agreement with the Municipality as a condition to the approval of the development permit. At the discretion of the Municipality, some or all of the points listed below may be waived in the agreement. The agreement may include the following conditions:

- . the location, operation and rehabilitation of resource extraction activities,

- . the grading required to be done on the property with special attention being given to minimizing the discharge of storm water drainage into Lake Wabamun,

- . the alignment of roads or reconstruction of access onto all major roads,

the Subdivision Regulations under the Planning Act. The Plumbing and Gas Safety Services Branch of the General Safety Services Division of Alberta Labour oversees the approval and installation of sewage disposal systems in accordance with the Alberta Plumbing and Drainage Act Regulations. The approval and installation of pit toilets or privy-vaults are under the jurisdiction of the Local Board of Health. The Health Unit responds to complaints concerning water pollution problems under the legislative authority of the Public Health Act. A municipality may, by bylaw pursuant to the Municipal Government Act, provide for control of sewage disposal systems.

Alberta Environment, under the Agricultural Chemicals Act, Pesticide Application Licensing Regulation, and Pesticide Sales, Use and Handling Regulation regulates herbicide and insecticide use via permits but only for areas within 30 m. of a water body. Enforcement, however, occurs only when a complaint has been registered.

There are no regulations concerning fertilizer use; however, Alberta Environment and Alberta Agriculture are providing information to farmers and residents about fertilizer use.

Finally, with respect to the monitoring of water quality at swimming areas, the Local Board of Health operates under the conditions of the Commercial Bathing Places and Man-Made Beaches Regulations under the Public Health Act. The Health Unit must monitor commercial bathing places and man-made beaches (i.e. those areas where a fee is charged) under the above provisions. However, public beaches where no fee is charged are not monitored unless requested.

followed by the advisory policies for Federal, Provincial and local regulatory agencies (e.g. Alberta Environment, Stony Plain-Lac Ste. Anne Health Unit).

The twelve policy areas are as follows:

1. water quality management,
2. weed control,
3. lake level management,
4. lake surface use and public lake safety,
5. wildlife and fisheries management,
6. nature conservation and aesthetics,
7. air and noise quality,
8. agricultural land use,
9. transportation,
10. recreation management and development,
11. residential development, and
12. implementation and monitoring.

3.1 Water Quality Management Policies

Background

Local residents and other users of Lake Wabamun perceive that the water quality of Lake Wabamun is a prime concern. There are several government agencies responsible for the review, inspection, installation and monitoring of sewage disposal systems. The Standards and Approvals Division and Pollution Control Division of Alberta Environment review all new subdivision applications under the Water Resources Act as part of the referral process pursuant to the provisions of

3.0 LAKE WABAMUN MANAGEMENT AND DEVELOPMENT POLICIES

The following policies were prepared based upon the assessment of the biophysical opportunities and constraints, and the issues and concerns expressed by area residents. The specific management and development policies reflect the intent of the Lake Management Plan Goals and Objectives.

The management and development policies provide guidelines for future land and water use within the Lake Wabamun Watershed. They reflect the objectives of the plan, which are to manage the current level of land and water use activity within the Lake Wabamun Watershed, and to guide the future decisions of the local planning authorities concerning the most appropriate type, scope, and location of development.

The management and development policies have been divided into twelve policy areas. The organization of these policy areas is not intended to reflect any priority or emphasis, but rather the first policy areas are generally oriented to the management of the natural environment and the latter policy areas are directed to guide the future forms of development. Because of the complexity of the issues, some policies are presented in two or more policy areas.

Each policy area is discussed under four general headings. A brief description of the enabling legislation and the responsible authority is included as background to each policy area. The key objectives of the policy areas are presented. Then, policies directed towards the municipalities within the watershed are outlined. This is

*Lake Wabamun
Management and Development Policies*

one area. Boating activity of all kinds is heavy in a 100 - 200 m wide band all along the waterfront at Seba Beach, and

- for the "boat speed control zone" at Seba Beach, Point Alison, and Kapasiwin, the limits on power-driven boats and swimmers are designed to avoid conflict between all types of boats using this narrow area of the lake surface.

The establishment of these new zones, as well as others which may be requested in the future, on Lake Wabamun requires a request to amend the regulations under the Canada Shipping Act. Presently, three "swimming only" areas located within Moonlight Bay and a power-driven boat speed limit area located throughout all of Moonlight Bay.

Any request should include a map, to scale, indicating the precise area to be regulated using recognized survey marks on the shore as boundaries. The request should also include a brief explanation as to why the request is being made. A municipal council resolution would be in order signifying the municipality's agreement.

Uses

The zones recommended for Lake Wabamun are:

- . two new "swimming only" areas designated, one at Seba Beach and the other on the east side of Coal Point, and
- . three new speed limit zones designated off Seba Beach, Point Alison, and Kapasiwin.

The specific areas for each of these zones would be determined by the local municipality working with local residents or interest groups, and with Alberta Energy and Natural Resources, Fish and Wildlife Division. Other areas may be determined by the individual municipalities at some future date.

The rationale behind these three recommended areas are:

- . for the "swimming only" areas to provide protected space off a public (Seba Beach) and private (Coal Point) beach for swimming,
- . the "swimming only" areas allow for some organized supervision on relatively popular public and private beaches,
- . prohibit, in the case of Seba Beach, boating activity in

activity is becoming hazardous and dangerous. The limitation on speeds that power-driven vessels can travel is designed to reduce the element of risk in these areas.

Control over the lake surface is through the Boating Restriction Regulations which are "Federal regulations enacted by the Ministry of Transport under the authority of the Canada Shipping Act at the formal request of the province".

The Province has established an Alberta Boating Regulation Review Committee which considers recommendations received from municipal governments, regional planning commissions and regional representatives of governing departments.¹ The recommendations would include a request for a specific control zone. In the case of Lake Wabamun, a request for areas:

- . prohibiting all vessels (ie. swimming only areas), and
- . prohibiting the operation of a power driven vessel at a speed in excess of 12 km (8 miles) per hour.

1) Applications and inquires are made to Alberta Energy and Natural Resources, Fish and Wildlife Division, Bramalea Building, 9920 - 108 Street, Edmonton, Alberta, Canada, T5K 2M4.

The intent of this new district is to provide protection to local and significant biophysical and aesthetic features around the lake, while at the same time permitting, where appropriate, extensive recreational opportunities, such as cross-country ski and walking trails, local bird watching areas, and historical areas.

Uses

All uses would be discretionary:

- . cross country ski trails,
- . trail systems, and
- . historic sites registered or classified under the Alberta Historical Resources Act.

Lake Surface Controls

Two lake surface zones are recommended. They are:

- . a "prohibition of all vessels" zone, and
- . a "prohibition on operating power-driven vessels at a speed in excess of 12 km/hour (8 mph)" zone.

Intent

The intents of these two zones are to provide:

- . protection around specified swimming areas limiting all boat traffic through the area specified, and
- . protection in certain crowded lake areas where boat

Recreational Management District

Intent

The intent of this district is to permit the development of public or private intensive or extensive recreation facilities. This would include such uses as the institutional uses found around the lake, the Provincial Park, sailing clubs and commercial recreational developments such as Our World Resort Marina Village Campground near Seba Beach.

Uses

Permitted uses should be a golf course, a picnic ground or public day use area, a trailway and a registered historic site.

Discretionary uses should be an archery club, provincial park, sailing club, marina, institutional recreational facilities, a cross-country ski resort, a single family dwelling unit, a school, church, or other religious structure and a commercial campground or park.

Natural Environment-Recreational District

Intent

It is recognized that some recreational activities can be developed on land that otherwise would be viewed as environmentally sensitive (i.e. steep slopes (greater than 15%), significant vegetative areas, wildlife habitat, streams, low lying and wet areas).

Resource Mining District

Intent

The active mine permit area registered with the ERCB permits holders to extract mineral and natural resources. The purpose of this district is to reflect the area covered by the mine permits for both the Whitewood and Highvale coal mines. While not all the area is likely to be mined, it is necessary to identify the limits of potential mining covered by both the Mine Permit and the Proposed End Land Use Plans for these areas.

The mine permit holders and the County of Parkland No. 31 are currently preparing End Land Use Plans which will designate specific Land Use Districts.

Uses

As an interim measure and because the future end land uses are not yet defined, the permitted uses within this district should be:

- . the extraction of coal, gas, oil, sand, gravel, peat and timber, and
- . the development of facilities for use in conjunction with any of the above.

Residential Expansion District

This district is a holding district. A number of areas around the lake have been identified as potential development areas for country residential and cluster subdivisions. The intent of this district is to limit development in these areas such that when development is proposed, it can be physically achieved with as few impediments as possible. The interim development of land in this district would be limited to uses that require larger lots or parcels on which to operate.

At the time of development for urban or cluster subdivision purposes, the land would need to be redesignated to allow for cluster subdivisions, such as described for the Urban Development District (Existing Subdivision).

Uses

The permitted uses in this Residential Expansion District should be:

- . single family dwelling,
- . cereal crop farming,
- . forage crop farming, and
- . native pasture and grazing.

It is not proposed to limit the parcel size for a permitted use to minimum of 160 acres (64.75 ha) as none of the proposed residential expansion areas are greater than this minimum. The Development Officer shall be given the discretion to determine whether the proposed interim use would limit future development.

Intensive livestock operations should be prohibited within the district.

Urban Development District (Existing Subdivisions)

Intent

The intent of this district is to recognize that numerous cluster subdivisions have been developed around the lake within the County of Parkland No. 31. Only the most recent applications have met the current standards set by the County of Parkland No. 31 Land Use Bylaw.

As these subdivisions have already been approved and the roads developed, it would be appropriate to continue with the present land use district controls approved when the subdivision was approved.

Uses

Permitted uses include single family development where each dwelling is on a separate parcel of land; a school or a registered historical site. In cluster developments, the minimum lot as parcel size should be 1860m² (20000 square feet).

Discretionary uses would be an isolated single family dwelling unit, a mobile unit, a use specified in the Agricultural Land Use District, an accessory building, a home occupation, or a public utility building, plant or facility.

steep slopes (greater than 15%), heavily treed areas, wetlands and creeks that provide habitat for fish and wildlife. None of these areas require total protection because of a unique natural feature, but they do require sensitive handling when development is proposed. Thus, the intent of this new district is to permit the development of farming and agricultural activities, while at the same time protecting those local areas within this district that have biophysical or aesthetic qualities.

Uses

Permitted and discretionary uses would be the same as for the "Agricultural Land Use District" described above.

In addition, an applicant may be requested by the Subdivision Approving Authority to show how the natural environment may be impacted by the proposed development and what mechanism will be employed to mitigate these impacts. The subdivision approving authority may refer the proposed development application to Alberta Energy and Natural Resources, Fish and Wildlife Division, for consultation and technical assessment of any resulting impact. Development proposals should give consideration to the following:

- . steep slopes (greater than 15%),
- . permanent and seasonal wetland areas,
- . groundwater recharge areas,
- . major vegetative cover areas,
- . on and off shore characteristics,
- . terrestrial and aquatic habitat areas,
- . areas of historical or archaeological interest, and
- . affect on sub surface drainage.

Uses

Permitted uses would be, for extensive activity, cereal crop farming, forage crop farming, the raising of livestock, ranching, native pasture and grazing, and isolated single family dwelling units. Intensive activities would include tree farming and nurseries, and market gardening.

Discretionary uses would be recreational uses as set out under the "Recreational Management District" below, a cemetery, a church or chapel, a kennel for the boarding and/or breeding of dogs, a commercial greenhouse, a drive-in theatre, an institutional use, an apiary, a dairy farm and a use permitted under the "Resource Mining District".

Application of discretionary powers to uses listed as discretionary uses within this district should recognize the problem of pollution and increasing nutrient loading within the watershed, and therefore, seek to oppose all uses that may create a problem unless the applicant for development can take appropriate steps to prevent pollution or nutrient loading of the lake.

Agricultural-Natural Environment District

Intent

It is recognized that the intent of the Agricultural Land Use District as described above could be applied to this district. However, it is also recognized that within this district there are natural environment areas that require protection and sensitive handling. These areas consist of

areas would be established through their individual Land Use Bylaws and other statutory plans when prepared.

Uses

Uses generally would be:

- . single family residential cottages,
- . public facilities such as marinas, parks, public buildings, boat launches, swimming areas,
- . institutional uses such as service and religious group camps and other similar organizations,
- . natural environment areas that provide an urban reserve area, or natural buffer with other uses, and
- . recreation areas such as public parks.

In addition, some municipalities also permit commercial and industrial uses within their bylaws. The Lake Wabamun Management Plan provides the general criteria which will assist these municipalities to approve developments.

Agricultural Land Use District

Intent

The primary intent of this land use district is to permit farming and agricultural activities associated generally with the production of crops, livestock, dairy products and pastureland. It is also necessary because of the location within the Lake Wabamun Watershed to limit uses that could add nutrient and chemicals to the lake.

This plan defines a framework for co-operative efforts by all parties to secure a more balanced and orderly management and development of the Lake Wabamun Watershed.

2.4 Land Use Designations

The Future Land Use Map (Map 3) depicts the strategy intent and allocates land in accordance with interpreted boundaries from airphotographs and the defined watershed boundary. The map and descriptions presented below will form the basis or criteria which will assist those approving development in the area to determine permitted and discretionary uses appropriate for each district. Adjustments could be made to the land use bylaws for the County of Parkland and, where appropriate, other municipalities within the Lake Wabamun Watershed. The Future Land Use Map shows eight land use districts (zones) and two water surface zones. Each of these districts is described in the following section.

Urban Municipalities (Village/Summer Villages)

Intent

The intent is to identify the specific urban municipal boundaries. Each municipality has its own specific controls which apply to that jurisdiction alone. While the intent of the Lake Wabamun Management Plan is to unify the nature of controls and policy directives in all municipalities, each jurisdiction can only enact their own bylaws to administer the management plan. The uses permitted in these municipal

Plan is its implementation and general monitoring of goals, objectives and policies. Clearly, the Lake Wabamun Management Plan will only be as effective a planning tool as is the commitment of the municipalities, local residents, industry and respective federal and provincial government agencies to implement the lake management policies. This document is developed within the context of the implementing legislation: namely, each Municipality adopts the Lake Wabamun Management Plan as an Area Structure Plan under the provisions of the Planning Act. It also places the recommended policies within the framework of existing Provincial and Federal enabling legislation.

The policies set out in this plan are to be monitored, re-evaluated, and amended as economic and social conditions change. Consequently, a three year major review is recommended in the Plan and a responsible co-ordinating Lake Wabamun Review Committee be formally established to monitor the implementation progress of the Plan.

The future management and development of Lake Wabamun and its environ falls within the direct jurisdiction of the various municipalities working together towards a common goal. Various regulatory agencies and industry are directly involved in enforcing policies, yet the overall effectiveness of the Plan requires co-operation and action at the local level. Thus, individuals such as the cottage owner, farmer, permanent resident and day use recreationalist must make every effort to co-operate and adhere to the policies and implement these actions.

the existing informal use is heavy and to upgrade the existing and develop a new deep-keel boat launch and associated sewage pump out system. The Plan, in recognizing the concerns of existing users and the competition for these scarce resources, does not encourage the development of any other major recreational and tourism facilities.

11. Residential Development

Providing an adequate supply of affordable and physically suitable residential lots is one of the most serious challenges to the management of Lake Wabamun. Residential development on the north side of the lake has been allowed to extend to almost all of the lakeshore properties which are physically developable. On the south side, several potential development areas with lake frontage are still available but are not extensive because of environmental issues such as a high groundwater table and soils with low permeability. There is a large surplus of undeveloped lots where development may be directly promoted before additional subdivisions are approved. The Lake Wabamun Management Plan recommends that future development occur within existing subdivisions prior to the approval of new subdivisions. In addition, direction is provided concerning subdivision development in specific areas around the lake, with the aim that these subdivisions complement the existing residential land use pattern and be located in areas physically suitable for development.

12. Implementing and Monitoring the Plan

A critical issue central to the successful use of the

The Plan suggests no major changes to the system except for further evaluation of the need and costs associated with upgrading warning systems at vehicle and pedestrian crossings of the CN railway.

10. Recreation

Lake Wabamun is regionally recognized for its high quality recreational opportunities. This is exemplified by the intensive use received at Wabamun Lake Provincial Park, the five sailing and boating club facilities, and the six institutional facilities around Lake Wabamun. Recent major facilities such as Our World Resort, Marina Village campground and the proposed four-season tourism destination resort by the Paul Indian Band reconfirm the strength of this public demand for recreation.

Special interest groups, local residents and government agencies, however, have expressed the sincere concern that only limited complementary major recreational developments be approved in specified areas in order to minimize user conflicts, to avoid increased pressure on already congested areas of the lake and to retain the lake's aesthetic appeal. The Lake Wabamun Management Plan contains both policies directed at resolving existing management problems and in designating areas where recreational developments could be accommodated that complement the overall goals and objectives of the Lake Wabamun Management Plan. More specifically, the policies include recommendations to guide the type and location of a major recreational facility, to develop formal lake access day use recreational sites where

7. Air and Noise Quality

Air and noise pollution, although of minor concern generally in the watershed, are to be minimized through voluntary compliance by industry, local municipalities, and monitoring by Alberta Environment.

8. Agriculture

Agriculture land uses are dominant in the watershed areas, with the primary activities being cattle grazing and production of cereal crops. Agricultural practices such as excessive fertilization, cattle watering in stream courses, pesticide usage near water courses, and inadequate manure handling systems could contribute to increased nutrient levels in the lake.

The Lake Wabamun Management Plan outlines policies for agricultural activities and suggests that regulatory agencies continue to work closely with the farm operators to eliminate those practices which have the potential to pollute Lake Wabamun. Such actions include encouraging voluntary compliance by farmers for inspection of animal waste disposal systems and promoting the adherence to fertilizer use guidelines. The Plan encourages necessary steps to ensure a stable agricultural base.

9. Transportation

The transportation network satisfies the demand for easy and safe access to the developments around Lake Wabamun.

concern about water safety. Although enabling legislation to manage lake surface use is available, the implementation procedures are not clear.

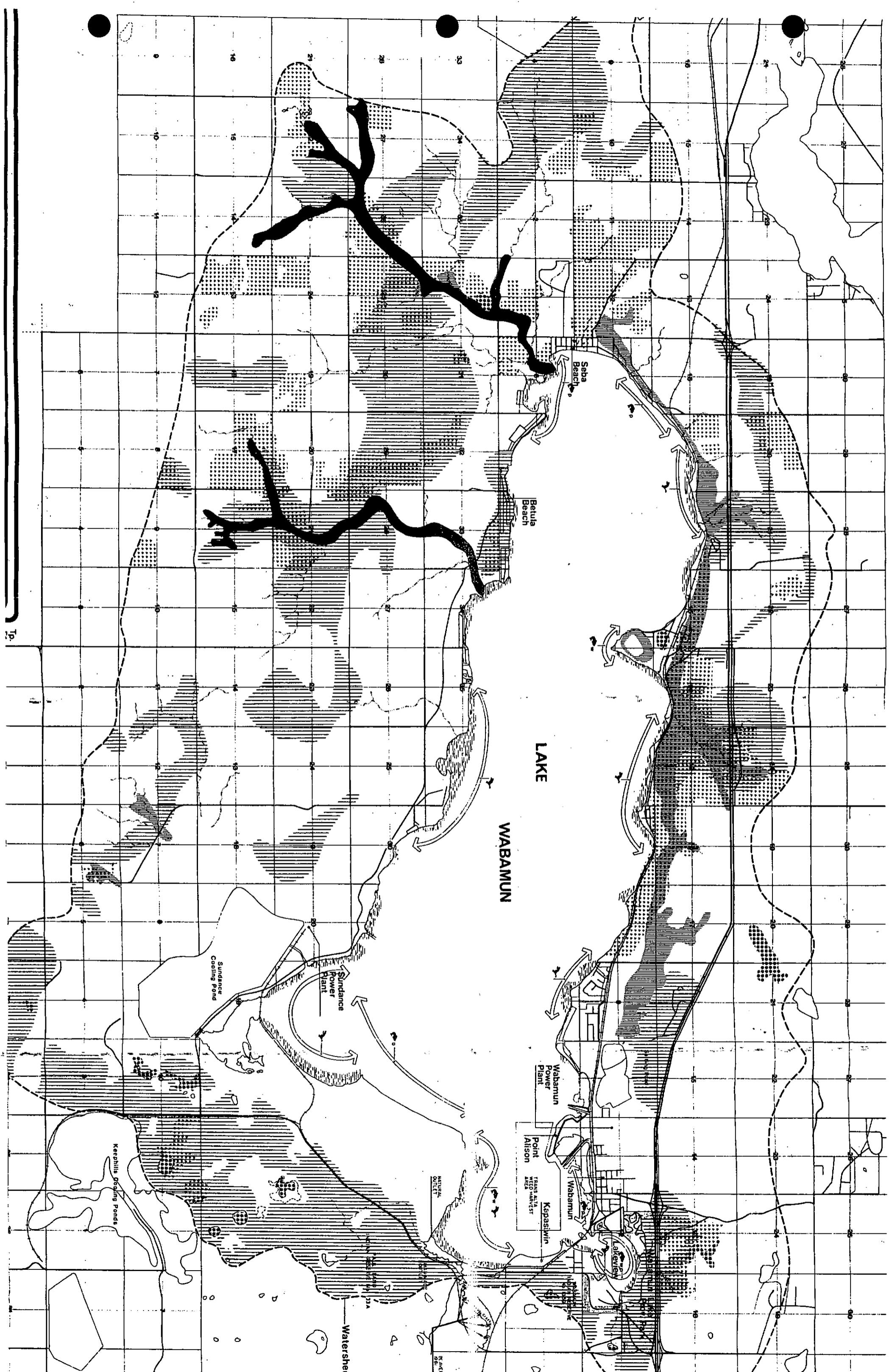
The Lake Wabamun Management Plan clearly identifies the mechanisms for designating swimming and restricted boat use areas and suggests advisory policies to enforcement agencies and to all lake users to co-operate in keeping Lake Wabamun as a safe recreational lake.

5. Wildlife and Fisheries Management

Sport and commercial fisheries, as well as other wildlife resources (e.g. waterfowl), are valuable natural resources of the watershed which have economic and recreational benefit. Also, they are necessary to sustain the quality of life at Lake Wabamun. Advisory policies are directed to maintaining and enhancing these vital resources by supporting the existing provincial programs for sport fisheries and wildlife management.

6. Nature Conservation and Aesthetics

The Lake Wabamun Watershed possesses an abundance of natural and scenic resources, vegetation stands important to local wildlife populations and interesting topographic features (e.g. Coal Point and adjacent steep slopes). The Lake Wabamun Management Plan contains policies which are designed to protect and enhance these features by adopting guidelines for subdivisions and development approvals that are sensitive to the natural environment.



WABAMUN LAKE

Sundance Power Plant

Wabamun Power Plant

Point Alison TRANS. & A.P. AREA WABAMUN

Kapasikwin

Wabamun

Wabamun

Wabamun

Sundance Cooling Pond

Kephille Cooling Ponds

Watershe

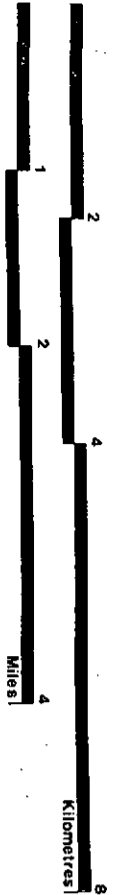
NATURAL OUTLET

LAKE

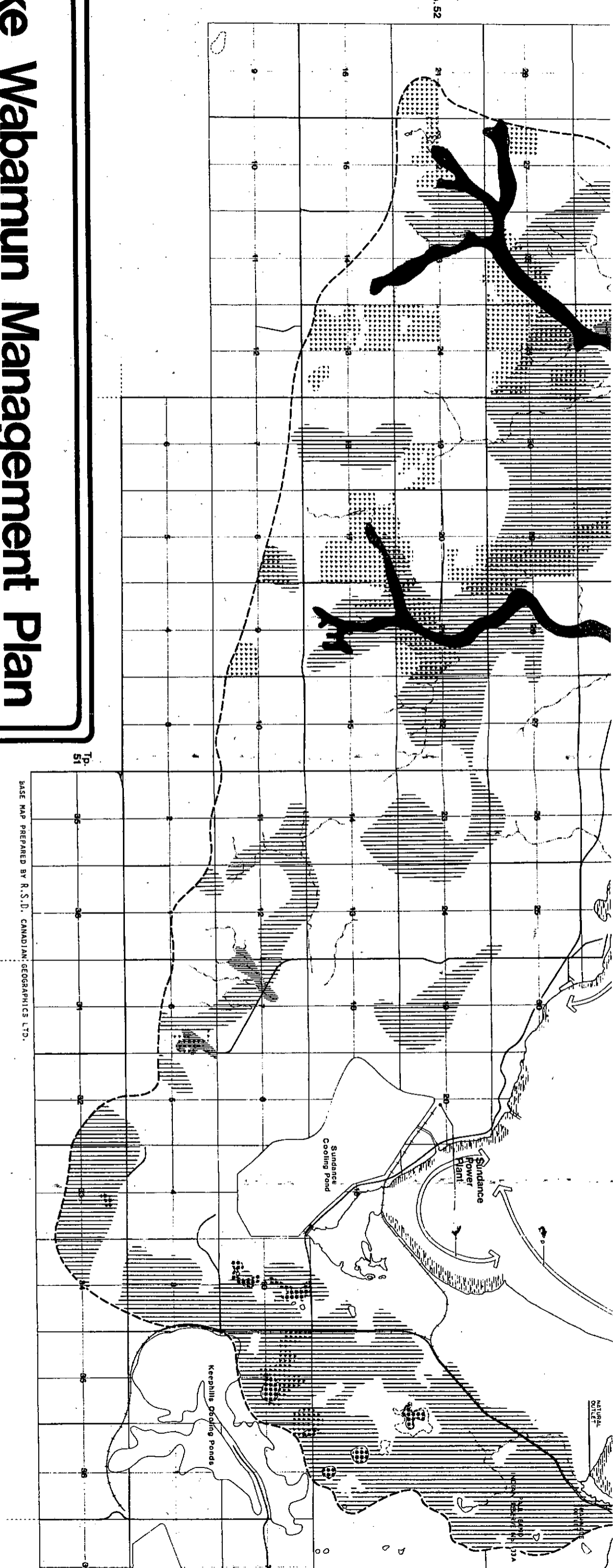
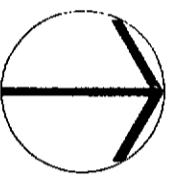
Lake Wabamun Management Plan

Yellowhead Regional Planning Commission

ENVIRONMENTAL RESOURCE EVALUATION: SUMMARY



W. J. Macklin Monaghan Western Limited
 CL Interplan



BASE MAP PREPARED BY R. S. D. CANADIAN GEOGRAPHICS LTD.

- | | |
|--|---|
| <p>Lake Resources</p> <p>FISH SPAWNING HABITAT</p> <ul style="list-style-type: none"> ☉ Northern Pike ☉ Lake Whitefish <p>➔ WATERFOWL/WATERBIRD NESTING AND REARING HABITAT (Known)</p> <p>▨ EMERGENT VEGETATION</p> | <p>Land Resources</p> <p>SLOPE CONSTRAINTS</p> <ul style="list-style-type: none"> ▨ Severe Limitation to Development (15 - 30%) ▨ Slope Hazard (Rough and Broken Ground) ▨ MODERATE CAPABILITY FOR UNGULATES ▨ MODERATE CAPABILITY FOR WATERFOWL ▨ BEAVER-MUSKRAT HABITAT/ UNGULATE MOVEMENT CORRIDORS |
|--|---|

use of fertilizers) resulting in reduced enjoyment of the lake. From a positive perspective, emergent vegetation could also be significant fisheries habitat.

All offshore development must have approval under the Canada Shipping Act, which is administered by Alberta Energy and Natural Resources, Public Lands Division, for Canada Fisheries and Oceans. These applications are usually referred to the Wildlife and Fisheries Division of Alberta Energy and Natural Resources.

The Fish and Wildlife Division of Alberta Energy and Natural Resources is responsible for the protection and enhancement of fisheries and their habitat under the provisions of the Fisheries Act. The approval of physical developments, such as boat docks and beaches, which could impact fisheries and their habitat, are the responsibility of the Canada Department of Fisheries and Oceans.

Since 1972, TransAlta Utilities has established a weed harvesting program for a defined area of the lake adjacent to the thermal discharge from the Wabamun Plant. Harvesting commences around May 15 until the end of August each year.

Policy Objectives

The prime objectives of the weed control policies are to manage the effects of weed growth, to monitor shoreline modifications/developments such that the recreational enjoyment of the lake is improved and to better manage the land activities in the watershed in order to reduce nutrient loading of the lake.

Policies for Municipalities

The management policies to be adopted and enforced by the municipalities are:

1. that the current agreement, between the Province, the municipalities, and TransAlta Utilities Ltd. for weed control be maintained or expanded;
2. that where desired and agreed upon by various municipalities, a weed control program be implemented by both municipalities and private groups on a user-pay basis, and it should be co-ordinated by the Lake Wabamun Review Committee (the program should have the prior agreement of, and be carried out in consultation with, Alberta Fish and Wildlife Division and Public Lands Division of Alberta Energy and Natural Resources, in accordance with the Fisheries Act and the Canada Shipping Act.);

Note: Weed control is currently carried out off the Village of Wabamun (Map 4) and inquires about the renting of cutting machines can be made to TransAlta Utilities Ltd., Special Projects, Wabamun Plant.

3. that no offshore modification such as dredging, beach development, fill importation be undertaken unless prior approval has been given by the local planning authorities who have referred an application to Alberta Environment, Alberta Fish and Wildlife Division, and Public Lands Division of Alberta Energy and Natural Resources, and through them to Canada Fisheries and Oceans; and

4. that the water quality management policies defined in Section 3.1, to reduce nutrient loading of the lake, be adopted and enforced. This will have the effect of stemming the weed growth problem at its source.
5. that the municipalities encourage ratepayers to control the removal and destruction of weeds in order to reduce its impact on water quality.

3.3 Lake Level Management Policies

Background

Lake Wabamun has a history of problems associated with high and low water levels. In 1982, Alberta Environment commissioned the Wabamun Lake Level Committee, made up of representatives of local authorities, industry and provincial agencies to study the feasibility of regulating the lake. The study, completed in 1984, concluded that the most significant influences on the level of the lake are precipitation and evaporation, which are beyond control. Thus, it is not possible to compress significantly the one-meter total range of lake level fluctuations. A fixed weir could provide limited influence on lake levels by reducing the duration, frequency and, to some extent, the maximum elevation of high levels at the expense of increasing the frequency and duration of low levels of the lake. The Committee identified the 1976 lake levels as the most desirable to attain and a preliminary design for a weir to meet this objective was prepared. However, the Paul Indian Band, whose reserve encompasses Wabamun Creek, has refused

the request of the Committee to conduct a survey of the creek, without which it is impossible to conduct further technical work.

Alberta Environment has the authority to protect the lake resources and can recommend the prohibition of certain developments within the floodplain under the provisions of the Water Resources Act and the Planning Act.

Policy Objective

The objectives of the lake level management policies are to support the recommendations of the Wabamun Lake Level Advisory Committee and to ensure that future development is protected, as far as practical, from fluctuating levels of the lake.

Policies for Municipalities

The following policies reflect the above objective:

1. that no new permanent habitable building be permitted within the floodplain, that is an area located below 725.42 metre asl elevation as determined by survey (i.e. 1:100 year recurrence interval); and
2. that lakeshore developments be designed to take into account lake level fluctuations of 1 metre.

Note: Between 1970 and 1982, the lake levels ranged from a low of 724.0 metres to a high of about 725.0 metres.

Alberta Environment Advisory Policies

The following advisory policy should be adopted and enforced:

1. that a public awareness program be considered to explain the conclusions of the Wabamun Lake Level Advisory Committee study (the publication should discuss the characteristics and causes of natural lake level fluctuation and the implications of an outlet control structure);

Note: It is suggested that Alberta Environment be responsible for the awareness program in co-operation with the Lake Wabamun Review Committee.

2. that Alberta Environment review, adopt, and implement the recommendations of the Wabamun Lake Level Advisory Committee.

3.4 Lake Surface Use and Public Lake Safety Policies

Background

Control over the lake surface falls under the Canada Shipping Act enacted by the Federal Government. The administration of these controls is undertaken by agreement with Alberta Energy and Natural Resources, Fish and Wildlife Division, Alberta Boating Restriction Review Committee. The enforcement of the rules and regulations is the responsibility of the R.C.M.P. Alberta Fish and Wildlife Division officers, and Alberta Parks and Recreation officers may act in some cases, but are restricted to specific areas of jurisdiction. Local

municipal law enforcement officers have no jurisdiction at all over lake surface.

The Small Crafts Harbour Program under Canada Fisheries and Oceans is responsible for the development, expansion, and upgrading of Federal piers and associated boat launches.

Policy Objectives

The objectives of these policies for Lake Wabamun are to ensure that the use of the lake surface is available to all recreationists, to resolve conflicts between users to reduce overcrowding, and to maintain public safety on the lake.

Policies for Municipalities

The various municipalities should institute the following policies:

1. that specific offshore areas associated with public recreational facilities or residential developments be designated, and marked accordingly, as swimming areas to prohibit all motorized vessels under the provisions of the Canada Shipping Act (the Lake Wabamun Review Committee should be made aware of all applications by municipalities to the Alberta Boating Restriction Review Committee, Alberta Energy and Natural Resources);

Note: Three such "swimming" areas have already been designated in Moonlight Bay under the Boating Restriction Regulations of the Canada Shipping Act Chapter 1407, as amended. Two additional

recommended areas include off the shore of Seba Beach and off the east shore of Coal Point (map 3). Refer to Section 3.10 for recommendations concerning public lake access areas.

2. that specific offshore areas be designated as restricted boating areas, where restriction on operating a motor craft at speeds in excess of 12 km/hour is in effect. These areas should be zoned accordingly under the provisions of the Canada Shipping Act (the Lake Wabamun Review Committee should be made aware of all applications from municipalities to the Alberta Boating Restriction Review Committee, Alberta Energy and Natural Resources);

Note: One area of Lake Wabamun (Moonlight Bay) has already been restricted under the Boating Restriction Regulations of the Canada Shipping Act Chapter 1407, as amended. Three additional areas recommended include areas off the shore of the Summer Villages of Seba Beach, Kapasiwin, and Point Alison.

3. that municipalities request the Canadian Coast Guard through the Alberta Boat Restriction Review Committee to mark navigational hazards by buoys and/or signs;

Note: The marking of navigational hazards is the responsibility of the Canadian Coast Guard under the Canada Shipping Act. The importance of providing identification of navigational hazards has to be determined by the various users of the

lake. The information should be transmitted through the various municipalities, or the RCMP, to Alberta Fish and Wildlife, Alberta Boating Restriction Review Committee for consideration and action.

4. that municipalities jointly request to Alberta Environment and Canada Fisheries and Oceans that pump-out systems and sealed holding tanks, appropriate for safe and convenient sewage disposal by deep-draught cabin vessels, be developed at a marina or pier at both the east and west ends of Lake Wabamun;

Note: The Federal pier at the Village of Wabamun would be appropriate for the east end. An engineering feasibility study should examine the appropriateness of the Seba Beach federal pier and the Marina Village marina, if agreeable to by the Our World Resort Ltd.

Refer to Section 3.10 for policy concerning the development of a deep draught boat launch.

5. that a co-ordinated emergency plan for on-water search and rescue be prepared as a co-operative venture through the municipalities, subdivision groups, sailing and yachting clubs, Canada Rescue Squadron, institutional facilities and the local RCMP detachment; and

Note: The Lake Wabamun Review Committee could initiate the preparation of a plan and ensure that the procedure is updated annually. A practice rescue

training course could be held annually, and a centralized emergency telephone number could be posted around the lake.

6. that signs identifying rules and regulations of public boat safety, ice hazards, and courtesy be erected at all public boat launching sites and public access points around the lake by the municipalities or agencies responsible for the site.

RCMP, Alberta Recreation and Parks, and Alberta Fish and Wildlife Division Advisory Policies

The following policies should be adopted and enforced:

1. that co-ordinated, year-round law enforcement on Lake Wabamun by the RCMP, Alberta Recreation and Parks, Alberta Fish and Wildlife Division be encouraged to reduce public safety hazards associated with ice thaw, boating, and other associated water and ice-related recreational activities; and
2. that the law enforcement responsibilities of the RCMP, over the lake surface (including monitoring indiscriminant discharge of sewage from boats) fall under one jurisdiction of either the Stony Plain or Evansburg RCMP detachments.

Advisory Policies Pertaining to All Lake Users

The following policies should be supported by all users of Lake Wabamun:

1. that clubs, institutions, and residents be encouraged to police their own members and fellow area residents to ensure boat safety and courtesy are maintained; and
2. that the Federal, Provincial and Municipal agencies, as well as the clubs and institutions located on the lake, continue to support water safety courses and exercises at Lake Wabamun in an attempt to increase general public awareness.

Note: The Northern Alberta Sailing School, the Earnest Poole Scout Camp and the Canadian Power Squadron all conduct courses in boat handling, water safety, and search and rescue. Other organizations should be encouraged to supplement these programs.

3.5 Wildlife and Fisheries Management Policies

Background

All shoreline development such as boat docks and boat houses into the lake must have approval under the Canada Shipping Act, which is administered by Alberta Energy and Natural Resources, Public Lands Division, for Canada Fisheries and Oceans. These applications are usually referred to the Wildlife and Fisheries Division of the same department. However, in practice, this policy has not been strongly enforced because of the lack of staff and the large number of applications.

The Fish and Wildlife Division of Alberta Energy and Natural Resources has the legislative authority under the Fisheries Act to monitor and control modifications to shoreline and offshore of the lake to ensure the protection of fish habitat.

Generally, subdivisions are governed by the Planning Act under the administration of the Yellowhead Regional Planning Commission and County of Parkland. Applications for some subdivisions are referred to the Public Lands Division of Alberta Energy and Natural Resources and subsequently to the Fish and Wildlife Division for their review and comments.

Policy Objectives

The objectives of these policies are to recognize the importance of wildlife and fisheries resources of the watershed and to ensure that they are maintained or enhanced for the enjoyment of local users. Conservation of significant and large vegetated areas will also maintain the visual appearance and aesthetic attractiveness of the lake.

Alberta Energy and Natural Resources, Fish and Wildlife Division, Advisory Policies

The existing policies of the Fish and Wildlife Division should continue, such that:

1. the commercial fishing practices at the lake be continued as deemed appropriate by Alberta Fish and Wildlife Division;

2. the sport fishery be improved, developed, and controlled, as deemed appropriate, by Alberta Fish and Wildlife Division to meet the high demand experienced by Lake Wabamun;
3. that the existing hunting regulations be continued by Alberta Fish and Wildlife Division in order to maintain a balanced wildlife management program; and
4. that, in order to ensure fish and wildlife habitat are protected, the existing referral process to Alberta Energy and Natural Resources be continued for all subdivision applications within 0.8 km of a waterbody (Planning Act), and for water development permits and applications for license of occupation under and the Canada Shipping Act.

3.6 Nature Conservation and Aesthetics Policies

Background

The "environment reserves" and "municipal reserves" referred to in the policies are in reference to their provisions under the Planning Act. Prior to 1977, "public reserves" were designated for environmental protection as well as public recreation and open space; the policies also apply to these reserves. Generally, the identification and designation of environmental and municipal reserves are established under the provisions of the Planning Act by the Yellowhead Regional Planning Commission and the County of Parkland. The individual municipalities have the authority under the Municipal Government Act to create, by bylaw, specific land use controls and policies related to these

reserves provided they conform to the general intent of the Planning Act.

Policy Objective

The objective of these policies is to ensure that areas are protected and enhanced in order that their environmental attributes or scenic values are conserved for wise and efficient use.

Policies for Municipalities

The policies of the management plan to be adopted and enforced by municipalities are:

1. that stream, wetland, and lakeshore vegetation be protected through the following means:
 - a) For subdivision applications, the area under question is generally covered by an Environmental Reserve Dedication, and, while the Planning Act (Section 98(d)) recommends 6 m, Alberta Environment generally requests a 30 m (100 ft) setback. The amount of dedication is dependent upon soil conditions, location of the 1:100 year recurrence interval flood line, or on the stability of the bank.
 - b) For development within existing parcels, setbacks from streams, wetlands, and lakes is established through the Land Use Bylaw. Recommendations include the inclusion of a clause which established

the rear yard lots abutting onto the lake to be 10 m. (35 ft).

- c) The maintenance of natural vegetation, particularly adjacent to streams, shorelines and on steep slopes can be achieved by requiring a development permit for their removal and a site plan showing the location of mature forest cover and how it will be affected by any proposed development.

Note: Refer to Section 3.1, Policy 1.

- d) by encouraging public projects, such as fencing of stream banks, to protect the streams and steep areas (greater than 15%); and

Note: Financial assistance is potentially available to municipalities and individuals under the Alberta Fish and Wildlife Division's "Stream Bank Protection Program" funding by "Buck for Wildlife".

- e) by permitting and co-ordinating appropriate multiple uses of environmental and municipal reserves, such as trails, flood control, and wildlife management;

2. that public reserves predating the implementation of environmental reserves under the Planning Act (1977) be protected for their functional, ecological, and scenic values;

Note: Reserves - Under the Planning Act, municipal reserve is provided as a part of each subdivision application unless the reserve requirement is either deferred or money is provided in lieu. In addition, specific areas that are environmentally sensitive can be declared Environmental Reserves. It is the intent that areas designated for either these two types of reserve be utilized to improve the overall access to the lake and to provide recreational opportunities for local residents, as well as for visitors. An evaluation of the areas designated as reserve parcels was undertaken. These are:

(i) Lakeview

- a) These reserves should be retained for use by local residents.
- b) There may be a need to either develop the road system in accordance with the approved subdivision or arrange for the cancellation as part of the reserve (abutting parcel A) and converting this area to be a public road.

(ii) South Seba

- a) These reserves should be retained for use by local residents.

b) If public use of the lake access point on the section road between Section 5 and Section 6-53-5-5 is ultimately desired, then the development of a specific lake access facility and day use picnic area would be the responsibility of the County of Parkland.

(iii) Kapasiwin

a) There are no public reserve parcels in this municipality; nor are there any public reserve parcels in the area north of the CNR tracks.

(iv) Whitewood Sands and Freeman

a) These reserves should be retained for use by local residents.

(v) Betula Beach

a) These reserves should be retained for use by local residents.

(vi) Rosewood Beach and Sundance Meadows

a) These reserves should be retained for use by local residents.

(vii) Seba Beach

a) These reserves should be retained for use by local residents.

(viii) Gardener's Cove

a) These reserves should be retained for use by local residents.

(ix) Ascot Beach

a) These reserves should be retained for use by local residents.

(x) Point Alison

a) These reserves should be retained for use by local residents.

In future subdivisions, the development of an interlocking system of environmental reserve and municipal reserve should be aimed at by the designers of subdivisions and by those charged with the responsibility to approve subdivisions. The intent, where large areas of environmental reserve are designated, is to provide opportunities for walking, equestrian and cross-country ski trails, while at the same time protecting the natural environment.

3. that the subdivision approval authorities co-operate with the public and private sectors to designate public

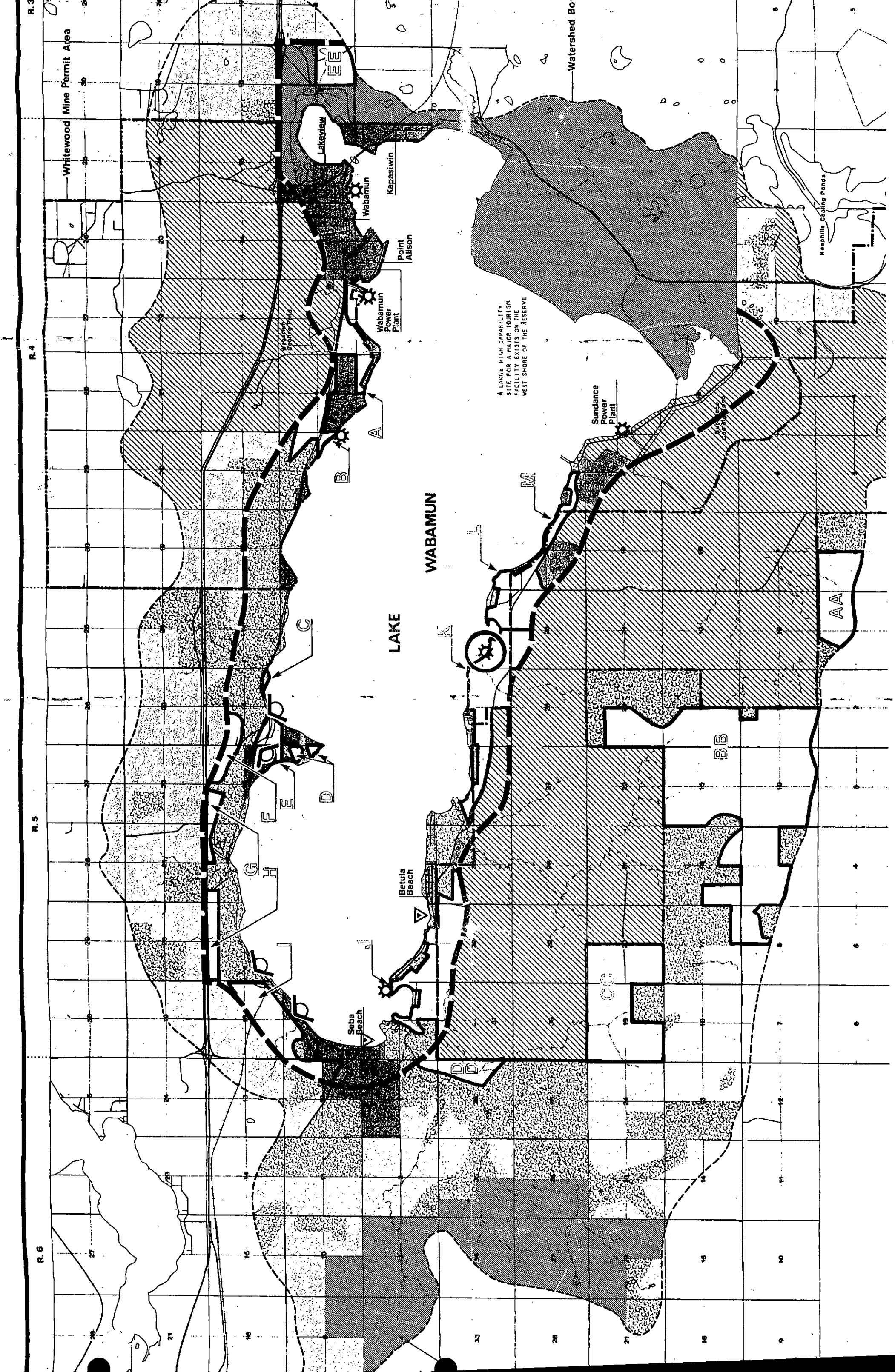
and environmental reserve areas for the protection of the natural environment;

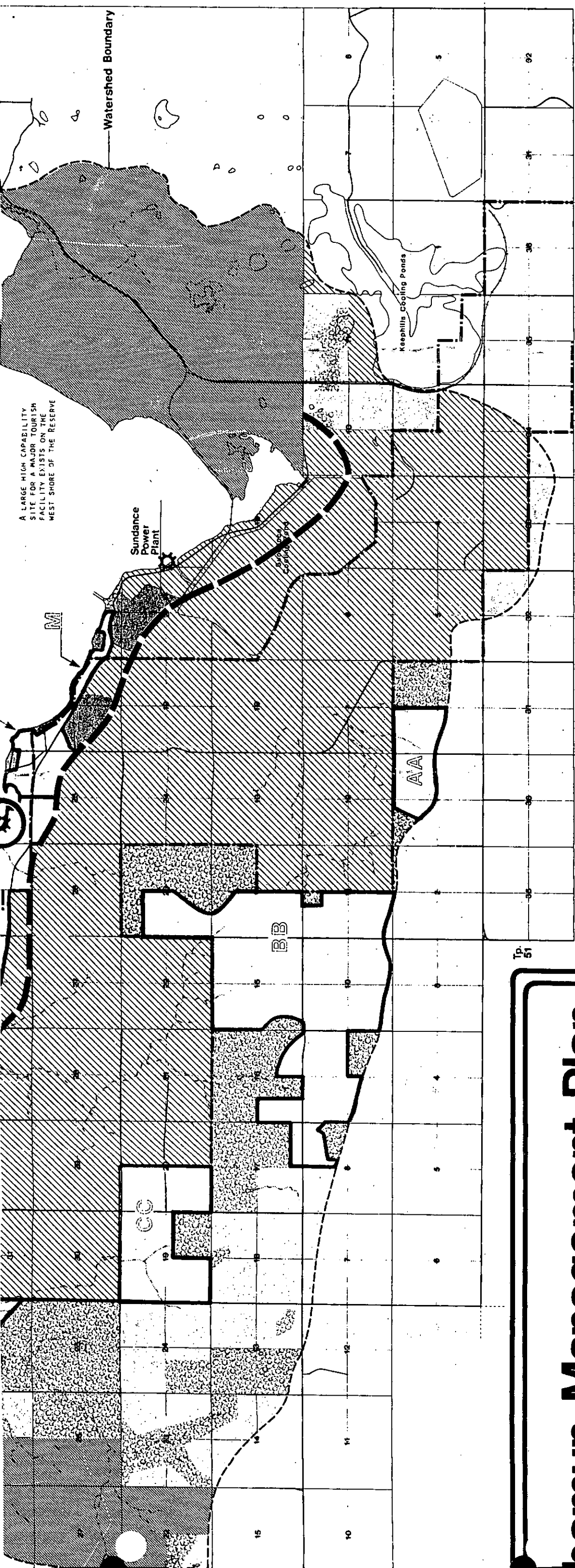
Note: It is recommended that for new subdivisions a minimum of 6 m buffer abutting the bed or shore of the lake from the mean lake level be designated as Environmental Reserve. Lands shall include all areas within the floodplain, or a minimum of 6 m from the mean lake level.

4. that at the subdivision and development approval stages, all reasonable steps be taken to mitigate potential adverse environmental and aesthetic effects of new developments (i.e. industrial, commercial, and residential);
5. that unobstructed views of the lake from along Longshore Drive on the north side of Lake Wabamun, and on high points of land elsewhere, should be given some consideration in any designs for subdivision approval and in the location of roads.

Note: A number of such viewpoints exist (Map 5). Consideration should be given to formally establishing points such that local residents and visitors to the lake can take advantage of these attractive viewpoints. Establishing such viewpoints is a part of the subdivision design process.

6. that the reclamation of land following mining be continued by TransAlta Utilities Ltd. in co-operation





A LARGE HIGH CAPABILITY SITE FOR A MAJOR TOURISM FACILITY EXISTS ON THE WEST SHORE OF THE RESERVE

Sundance Power Plant

Keephillis Cooling Ponds

BASE MAP PREPARED BY R.S.D. CANADIAN GEOGRAPHICS LTD.

Highvale Mine Permit Area

Joamun Management Plan

Regional Planning Commission

DEVELOPMENT AREAS



ghan Western Limited

POTENTIAL DEVELOPMENT AREAS

- Potential development areas within 0.8 km (0.5 mi) of the lakeshore
- Potential development areas in the watershed

LIMITATION TO DEVELOPMENT

- Active mine permit areas or active industrial properties¹
- Environmental²
- Existing development
- Moderate potential for agriculture³
- Provincial parks, Indian reserve & Grazing reserve lands
- Boundary of Lakeshore area (0.8 km from shoreline)
- < 725.42 metres asl floodplain (1:100 yr recurrence interval)

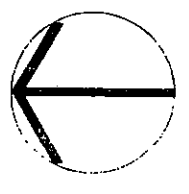
¹ ONLY ACTIVE MINING AREAS GREATER THAN 0.8 KM FROM THE SHORELINE ARE SHOWN, EXCEPT NEAR THE SUNDANCE POWER PLANT.

³ BASED ON C.L.I. CLASS 3 FOR AGRICULTURE AND CURRENT AGRICULTURAL PRACTICES (CODY, DISTRICT AGRICULTURAL IST., 1984)

² BOUNDARIES HAVE BEEN GENERALIZED TO QUARTER SECTIONS IF 75% OF THE PROPERTY POSSESSES MAJOR ENVIRONMENTAL LIMITATIONS.

View points

- Potential area for major recreational development
- Potential area for formal lake access day-use recreation
- Potential areas for deep-draught boat launch (subject to technical feasibility)



with Alberta Environment to maintain or improve the quality of the environment; and

Note: The End Land Use Plans prepared by the County of Parkland and TransAlta Utilities Ltd. shall be the legal planning document to guide reclamation and future land uses within the Whitewood and Highvale mine areas and shall conform to the intent and policies of the Lake Wabamun Management Plan. Other municipalities within or adjacent to the area covered by the End Land Use Plan should be consulted as to any potential impact.

7. that all future industrial expansions and development be planned and developed in consideration of and co-operation with existing and future residential and recreational developments.

3.7 Air and Noise Quality Policies

Background

Alberta Environment has the legislative authority to monitor and enforce the provisions of the Clean Air Act. Currently, industries can monitor air emissions from their plants and report these records to Alberta Environment. Alberta Environment licenses industries by allowing limited air emissions.

Noise quality control is a relatively new issue and consequently, there are few legislative mechanisms available.

Under the Municipal Government Act, a municipality can enact a bylaw to set noise level standard. The most common example is the noise bylaw related to airports.

Policy Objectives

The objectives of these policies are to ensure that the safe limits for air and noise quality are maintained. The management policies are directed generally towards industry.

Alberta Environment Advisory Policies

The following policies should be adopted and enforced by Alberta Environment:

1. that the Pollution Control Division of Alberta Environment shall continue to enforce the provisions of the Clean Air Act;
2. that Alberta Environment, in conjunction with TransAlta Utilities Ltd., provide the results of the air and noise monitoring program as information to the local residents on an annual basis; and
3. that TransAlta Utilities Ltd. be encouraged to co-operate with local residents and continue to schedule the "blow-down" operations at the Wabamun and Sundance Plants at mutually convenient times.

Note: Local residents should be aware that unscheduled "blow-down" operations are necessary in emergency situations.

TransAlta Utilities Advisory Policies

The following policies should be adopted and implemented by TransAlta Utilities :

1. that TransAlta Utilities continue to control dust from haul roads using a dust abatement product, which is environmentally acceptable.

3.8 Agricultural Land Use Policies

Background

Alberta Environment, Alberta Agriculture, Alberta Labour and Local Board of Health co-operate to ensure that agricultural operations conform to the provisions of the Water Resources Act, Agriculture Chemicals Act, the Alberta Plumbing and Drainage Act Regulations, and the Public Health Act. Local municipalities (i.e. County of Parkland) are responsible under the Planning Act for approving agricultural operations within the Watershed.

Policy Objectives

The objectives of these policies are twofold: first, to encourage where possible the continuation of good agricultural or intensive livestock practices; and second, to ensure that nutrient or contaminants resulting from agricultural operations do not enter Lake Wabamum or its watercourses.

Policies for County of Parkland

The policies of the management plan to be adopted and enforced by the county are:

1. that future intensive livestock operations should not be permitted under the Planning Act by the Development Approval Authority within the Lake Wabamun Watershed;

Note: Alberta Agriculture and Alberta Environment defines an intensive livestock operation, in the report entitled Confinement Livestock Facilities Waste Management Code of Practices (1982, P.3), as an operation with a housing density of more than one animal unit per 300 square metres and be occupied at least 90 consecutive days per year (i.e. an operation of more than 54 cattle in an open feedlot).

2. that sizeable areas of agricultural land be maintained to achieve the economic stability necessary for those wishing to conduct agricultural operations, including:
 - a) the County of Parkland encourages the conservation of large agricultural holdings in lieu of small piecemeal subdivisions.
 - b) establishment of a stable land use pattern in the watershed in which farmers may be assured that investment in an economic agricultural program can be justified and maintained; and

Note: Under the present policy of the County of Parkland, all better quality agricultural land will be preserved. Better quality agricultural land is defined by the County as C.L.I. classification 1 and 2 and Class 3 with farmland assessment ratings of 40%, which primarily reflects areas capable of supporting annual crops. There are only 5 quarter-sections which meet these criteria in the Lake Wabamun Watershed (i.e. NW 1/4 of 18, N 1/2 of 19, W 1/2 of 20, Township 52, Range 5) (Map 5). In the Watershed, however, the predominant agricultural use is perennial forage and improved pasture. Thus, additional consideration should be given to maintain areas which have a moderate potential for agriculture -- moderate potential being defined by the District Agriculturalist as:

- . a mixture of annual crops and perennial forage; and
- . a mixture of perennial forage, improved pasture and annual crops, more non-arable Class 1 land, and potential further agricultural development by clearing arable treed areas.

These areas of moderate potential for agriculture are identified on Map 5. Where agricultural land of a lower CLI classification exists in the Lake Wabamun Watershed, then the size of the agricultural holdings and the adjacency to other holdings becomes important under this policy.

3. that local farmers be encouraged to consult with Alberta Agriculture and Alberta Environment concerning proper fertilizers, pesticide, and manure handling to reduce nutrient loading; and

Note: Refer to Section 3.1, Policy 10.

4. that the County encourage all existing intensive agricultural livestock operations in the watershed to achieve the guidelines outlined in the Code of Practice under the "Certificate of Compliance Program" regarding animal waste disposal systems.

Note: the Certificate of Compliance is voluntary only.

Alberta Environment and Alberta Agriculture Advisory Policies

The following policies should be adopted, encouraged or enforced by the respective regulatory agencies:

1. that existing livestock operations within 0.8 km of the lake or along any stream course entering Lake Wabamun, be monitored by Alberta Environment and Alberta Agriculture for pollution problems and ensure any problem is rectified in co-operation with Alberta Labour and the Local Board of Health.

3.9 Transportation Policies

Background

Alberta Transportation is responsible for the development and maintenance of provincial highways and primary highways. The municipalities are responsible for other public road networks. The Canadian Transport Commission is responsible for approval of railway crossings. If and when the CNR main line north of Lake Wabamun is twinned, then the warning systems will be upgraded in consultation with the respective municipalities.

Policy Objectives

The objectives of these policies are to ensure that adequate and safe access to the lake and areas surrounding the lake is maintained, while recognizing at the same time that some highways have, as their main function, a regional and provincial function. In addition, it is important that co-operation among municipalities is further encouraged.

Policies for Municipalities

The policies of this management plan to be adopted and enforced by the municipalities are:

1. that municipal bylaws and provincial statutes be followed when establishing building setbacks from local municipal roadways, secondary and primary highways, Highway 16, and railways;

2. that where residential subdivision is proposed to be located adjacent to a railway track that an appropriate noise buffer be incorporated into the subdivision. The buffer can take the form of either an appropriate setback, earth berm, or solid barrier.
3. that highway commercial development only be permitted along Highway 16.

Note: Alberta Transportation proposes that new development be encouraged to locate adjacent to existing highway commercial developments in order to provide a consolidation of these uses at specific points. Only two intersections are recommended -- Ascot Beach Road and Seba Beach Road. It is proposed that the long term development of Highway 16 will call for interchanges at the Darwell and Fallis corners. Existing commercial development is incompatible with these plans.

County Of Parkland and Alberta Transportation Advisory Policies

The following policies should be adopted and enforced by the County of Parkland and Alberta Transportation:

1. that a road system around Lake Wabamun continue to be maintained and, when necessary, improved or developed to provide convenient and safe access to existing and proposed developments; and

2. that signs identifying public facilities should be erected by the appropriate municipality and/or the Province; and
3. that signs around the lake used to identify public facilities should be consistent in their design, nomenclature and symbolism.

Note: It may be necessary to seek the co-operation between various municipalities and Alberta Transportation to approve where such signs are needed. At the present time, Alberta Transportation has a sign program and policy manual which provides signs and/or symbols, cost free or cost-shared. However, the municipalities around the lake may wish to co-ordinate such a program.

Canadian Transport Commission and Canadian National Railway Advisory Policies

The following policies should be adopted and enforced by the Canadian Transport Commission as they affect Canadian National Railway.

1. that signs identifying the public safety hazards when crossing the railway line be erected by CN Railway in co-operation with municipalities;
2. that, where necessary for improved safety and access to the lake, upgrading the warning systems at the CN

railway crossings be considered by the respective municipalities and, if desired, application should be made to the Canadian Transport Commission;

Note: Specific crossings which may require upgrading are: Village of Wabamun and the federal pier area, Point Alison, Ascot Beach (two), Fallis, and on the Seba Beach road. The future twinning of the line along the north shore of Lake Wabamun may result in the upgrading of warning systems although this would be dependent upon the level of use at the individual crossings. The twinning of the line is scheduled for some time after 1990, although the exact time frame is very much dependent upon the economy.

3.10 Recreation Management and Development Policies

Background

It is the mandate of Alberta Recreation and Parks to develop and manage Wabamun Lake Provincial Park as part of a provincial park delivery system and to identify and develop new public recreational areas as demand and finances permit.

The responsibility for the management and development of public/municipal/environmental reserves at the local and regional level is vested with each individual municipality. Municipalities such as the County of Parkland and the Villages or Summer Villages could take an active role, individually or jointly, in the development and management of public parks or recreation areas around the lake.

Policy Objectives

The objectives of these policies are to reduce the problems associated with overuse of lake access sites, to eliminate or reduce conflicts among recreationists and cottagers, to satisfy some of the demand for recreation by the general public, and, as required, to develop new facilities.

Policies for Municipalities

The policies of this management plan to be adopted and enforced by the municipalities are:

1. that as required by public demand and available capital development and maintenance financing, formalize and upgrade existing heavily-used lake access/day-use areas including facilities for picnicking, boat launching, beach activities and ice fishing;

Note: Some recommended areas are: southeast of the Sundance Power Plant, west of Gardener's Cove, South Seba, Ascot Beach - Rizzie, and west of the intake canal to the Wabamun Power Plant. Refer to Map 5, Potential Development Areas for these alternative areas.

2. that all the municipalities through the Lake Wabamun Review Committee jointly assess the options for the development and management of public lake access areas;

Note: The County of Parkland, Parks and Recreation Department has a mandate to develop and maintain

regional parks but staff resources and fund limitations restrict their ability to deliver these services. However, under joint agreements with senior levels of government, other municipalities and the private sector, options for funding may be available (i.e. Provincial Recreation Areas Program).

3. that, when desired by local residents, the various municipalities should be encouraged to consolidate and develop public municipal reserve areas for local community recreation, and to provide access to the lake for residents of back lots;
4. that future recreational facilities serving the public at large be separated from existing residential developments along the shoreline;
5. that the recreational and nature conservation uses of Coal Point be encouraged to continue under the existing co-operative arrangement with the YoWoChAs Centre, Camp Maywasin, and the local landowners (if, in the future, any of these parties no longer wish to use Coal Point for the above purposes, a suitable recreational or natural environmental use should be sought);
6. that when required, the establishment and development of a major recreational area (i.e. campground, marina, rental cabins, group sports field, etc.) for public use be developed on Lake Wabamun, preferably away from either the extreme east end (Moonlight Bay to Kapasiwin) or the extreme west end of the lake (this

area should offer recreation opportunities for water and land based day-use and short-term visitation); and

Note: Depending on the nature of facilities, programs, and location, the development of tourism and recreation facilities within the Wabamun Indian Reserve could satisfy the objective to provide recreational opportunities for the general public. Thus, a development, as outlined in Point 6, may not be needed.

7. that either private commercial organizations, or senior levels of government involvement be encouraged to develop and manage the recreational area outlined in Policy 6 above.

Canada Fisheries and Oceans Advisory Policies

The following policies should be adopted and enforced by Canada Fisheries and Oceans:

1. that a deep-draught boat launch and a convenient and safe sewage pump out system for cabin vessels be developed at the west end of Lake Wabamun (refer to Section 3.4: Lake Surface Use and Public Lake Safety, Policy 4);

Note: The site for such a launch facility and pier should be determined by appropriate engineering and planning studies, which will evaluate the following:

- . substrate materials on and off shore,

- . depth of water,
- . shoreline contours,
- . prevailing wind direction,
- . land acquisition and municipal jurisdiction,
- . planning and boating impact,
- . sewage pump-out facility suitability,
- . capital development costs,
- ... additional engineering considerations and constraints,
- . timing, and
- . others, as deemed necessary.

At this time, it is recognized that two locations be investigated although better locations may be found during a detailed study. These two locations include:

- . the present federal pier at Seba Beach, and
- . combining the facility with Our World Resort Marina Village marina at Mattwa Bay (west of Betula Beach).

2. that the deep-draught boat launch at the Federal pier at the Village of Wabamun be repaired and improved to be more functional at low lake levels (refer to Section 3.3, Policy 2 and Section 3.4, Policy 4); and
3. that the Federal pier and adjacent site be upgraded and expanded to provide for formalized parking lanes, a picnic/day use area with appropriate servicing (the redevelopment of this area should be undertaken in co-operation with the Village of Wabamun).

3.11 Residential Development Policies

Background

The Yellowhead Regional Planning Commission and the County of Parkland are the subdivision approval authorities. Under the provisions of the Planning Act, Subdivision Regulations the individual municipalities have responsibility for development approval authority within their individual jurisdictions.

Policy Objectives

The objectives of these policies are twofold. The first objective is to ensure that residential development or redevelopment is physically suitable for permanent habitation, and second, to ensure that new development is compatible with environmental conditions surrounding the lake. In addition, this policy area also covers development of commercial locations and use of institutional areas.

Policies for Municipalities

The policies of this management plan to be adopted and enforced by the municipalities are:

1. that infill of existing subdivisions be encouraged prior to approving new subdivisions;
2. that some expansion of residential development be permitted when the current inventory of vacant lots in the immediate vicinity of that expansion area has been

reduced to a 2-year potential market level;

Note: Determination of 2 year supply - There are two agencies that could determine whether there is a 2 year supply of lots available.

- a) The subdivision approving authority can request the applicant to include with his application a justification for the development (i.e. the number of lots vacant in the immediate area, the rate at which they are being developed, and the likelihood of the new development being sold), or
- b) The subdivision approval authority can carry out the same projection.

The advantage of the subdivision approval authority doing this projection is that:

- a) they can set the boundary of the area to be reviewed, and
- b) they have the records and, therefore, should be able to carry out the investigation

Without investigating economic and market conditions, projection could be based on an analysis of:

- a) the number of vacant lots existing in an area, divided by,

b) number of lots being developed in the previous 12 months. This number can be defined to mean:

- (i) the average/year taken from figures covering 3-4 years, or
- (ii) projecting from figures covering 3-4 years whether the next year will be higher or lower than the year just completed.

In determining the number of vacant lots available in an existing subdivision, one should assume that all vacant lots are potentially available for sale, including those apparently being held by existing residents for whatever reason.

A greater degree of sophistication may be desirable, but this could be determined by the approving authority.

Two years was selected as this is generally the time required to plan, design, approve and develop a subdivision to the point of providing a product for the market.

3. that new clustered subdivisions be encouraged to locate in or adjacent to existing municipalities, as opposed to linear, strip developments;

Note: The intent is to consolidate residential development and not encourage riparian shoreline development.

4. that if any building is modified or if any new building is built, it should meet the standards set out by local

land use development or building bylaws or, where such do not exist, the Alberta Building Code and/or any local building bylaw;

5. that sewage disposal systems (grey and black water) for all new and existing residential developments conform with the Public Health Act, the Alberta Plumbing and Drainage Act Regulations under the Alberta Labour Act, and the policies of the Lake Wabamun Management Plan (refer to Policy Area 3.1, Stony Plain - Lac Ste. Anne Health Unit Advisory Policies, Policy 1); and
6. that opportunities should be provided for the development of local commercial outlets (corner store) where the local municipality has:
 - a) assessed the possible impact on adjacent development, and
 - b) re-designated the site for the permitted use.

3.12 Implementation and Monitoring Policies

Background

The Lake Wabamun Management Plan is as effective as the implementation mechanisms to accept, adopt and put into action these policies. Under the provisions of the Planning Act, each municipality can adopt the Lake Management Plan, by bylaw, as Area Structure Plans. The following policies contain recommendations to implement and monitor the Lake Wabamun Management Plan.

Policy Objectives

The objectives of these policies are to establish an implementation system consistent with the Planning Act and acceptable to each municipality, and to monitor development over the period of the plan in order to ensure that the planning objectives are maintained.

Policies for Municipalities

The policies of this management plan to be adopted and enforced by the municipalities are:

1. that each municipality adopt a legislative instrument that recognizes the validity of the Lake Wabamun Management Plan policies;
2. that each municipality exercise land use and development control within their municipality in accordance with the policies agreed to in the Lake Wabamun Management Plan and their own local bylaws; and
3. that a Lake Wabamun Review Committee be established, under the authority of the Yellowhead Regional Planning Commission, consisting of representatives of the County of Parkland, the Village of Wabamun, each of the Summer Villages of Betula Beach, Kapasiwin, Point Alison, Lakeview and Seba Beach, and the Yellowhead Regional Planning Commission;

Note: The prime purposes of the Committee should be:

- a) to provide a forum for discussion and communication

between those who have jurisdiction over the land surrounding the lake, and

- b) to provide a forum to discuss and manage major changes to the Lake Wabamun Management Plan, local plans or area structure plans approved specifically to manage the lake.

As optional tasks, the Review Committee could co-ordinate the following programs by requesting appropriate municipalities and government agencies to adopt and initiate these programs:

- a) to monitor and provide input to Alberta Environment concerning the weed control program;
- b) to monitor and provide input into the development of a public awareness program by Alberta Environment on the characteristics and causes of lake level fluctuations;
- c) to request municipalities and/or interest groups to prepare a water search and rescue emergency plan;
- d) to monitor and provide input to Alberta Environment concerning the development of an awareness program directed at ratepayers, on the possible effects of pollution and nutrient loading on the lake through the proper use of pit toilets, septic tank fields, fertilizers, and the indiscriminate discharge of effluent into the lake from sewers or boats;

- e) to monitor public and private land development within the watershed to ensure that the policies of the Lake Wabamun Management Plan are followed; and
- f) to co-ordinate the distribution of an annual newsletter to all ratepayers, interest groups, managers of recreational facilities and relevant government agencies on the activities of the Review Committee;

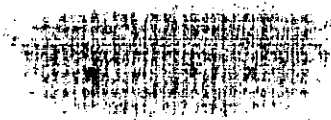
Note: The operation of the Review Committee should include:

- . meetings at least twice a year, if necessary to review progress and management of the lake and its watershed; and
- . to receive and/or obtain advice and direction from agencies who are responsible for major activities on or around the lake:
 - ie. - RCMP on boating safety;
 - Alberta Fish and Wildlife Division on wildlife and fisheries;
 - TransAlta Utilities Ltd. on Future End Land Use Plans and development of the two mines;
 - Alberta Environment and Stony Plain
 - Lac Ste. Anne Health Unit on water quality and weed growth;

- Alberta Recreation and Parks on the demand for public access to the lake; and
- the various municipalities concerning the implementation and management of the plan.

4. that the Lake Wabamun Management Plan be reviewed by the Review Committee every 3 years and modified when necessary as factors influencing the management of the Lake Wabamun Watershed change;
5. that the implementation of the policies be phased over the life of the plan; and
6. that the Yellowhead Regional Planning Commission be responsible for Plan Co-ordination until such time that a Review Committee, as outlined above, is considered to be necessary.

Implementation.



4.0 IMPLEMENTATION OF THE LAKE WABAMUN MANAGEMENT PLAN

The effectiveness of the Lake Wabamun Management Plan rests heavily with the implementation program. First, the policies and future land use map must be legally adopted or accepted by all municipalities. Second, the various municipalities and regulatory agencies must continue to enforce existing policies and adopt and enforce new policies of the Lake Wabamun Management Plan. The municipalities must regularly monitor and review the land and water activities within the watershed and mutually modify and amend the Plan accordingly. Finally, the municipalities must act co-operatively on the specific recommended programs identified in the Lake Wabamun Management Plan. This section identifies the necessary steps to implement the Plan.

A challenge presents itself to all the municipalities, government agencies, industry, interest groups, property owners, and other users who take an interest and care about the future of Lake Wabamun -- the challenge of implementing the Plan. In order for the Lake Wabamun Management Plan to be successful, it requires co-operation and action by everyone -- the individual, property owner, industry and government. The Lake Wabamun Management Plan can be achieved over time by starting immediately and working together.

4.1 Legislative Recommendations

It is recommended that:

1. the Yellowhead Regional Planning Commission should

recognize that the Lake Wabamun Watershed area is an area subject to special regulations and directives;

2. the various municipalities should adopt the Lake Wabamun Management Plan as an Area Structure Plan Bylaw, as a legislative device for land use control over future development within their respective jurisdictions;
3. individual municipalities should amend or adopt land use bylaws consistent with the Lake Wabamun Management Plan; and
4. individual municipalities should seek co-operation of regulatory agencies to adopt in principle and enforce advisory policies of the Lake Wabamun Management Plan particularly when it affects water quality, fisheries, nature conservation and lake surface use.

4.2 Authority of the Plan

The authority for the plan rests in a number of legislative acts.

1. The Planning Act provides the authority to include reference and legislative control through the Regional Plan.
2. The Planning Act provides the authority to establish a General Municipal Plan Area Structure Plan and/or an Area Redevelopment Plan and to amend Land Use Bylaws of the various municipalities to exercise land use and

development control within the provisions of these Plans.

3. The Municipal Government Act provides an alternative legislative mechanism to adopt by resolution the Lake Wabamun Management Plan as a guide to planning and development within each municipality.
4. The Canada Shipping Act and Navigable Waters Protection Act provide the authority to exercise control over water surface activities on the lake. This legislation is exercised by the Federal Government through the RCMP and Alberta Energy and Natural Resources.
5. Subdivision approval within the County of Parkland and incorporated municipalities within the Lake Wabamun Management Plan area is the responsibility of the County of Parkland and the Yellowhead Regional Planning Commission, respectively.
6. Land use and development of land and buildings are the responsibility of each local municipality, usually exercised through a land use bylaw.
7. Councils should encourage the provincial and federal governments to have regard for the provisions of this Plan in the development of Crown Land, in the formulation of Provincial and Federal legislation, policies and programs, in the issuance of any permits within the planning area, and in exercising their right to control air, water and noise pollution emanating from industrial, agricultural, and other activities

within the Plan area.

4.3 Phasing and Monitoring

The Lake Wabamun Management Plan policies will be phased based upon specific programs and the monitoring/review process. The Plan establishes the time frame of the plan and the legislative reviews. In addition, the implementation program identifies immediate tasks to be undertaken by municipalities and the programs that should be reviewed by the Lake Wabamun Review Committee as part of the three-year review process.

4.3.1 Time Frame

The Lake Wabamun Management Plan is to guide and control land use development and to manage resources in the watershed area over the short and long term. Regular updating of the plan and effective monitoring and modification will ensure the Plan is effective over this period of time.

4.3.2 Initiation of Immediate Actions

There are specific tasks which can be initiated in the short term by municipalities, or by government agencies at the request of municipalities. All of these implementation actions correspond to the policies defined in more details (e.g. agency responsibility) in Section 3.0. The section number and policy number have been provided for easy cross-referencing.

Section Number	Jurisdiction	Policy Number	Implementation Action
3.12	Municipalities	3	Establish the Lake Wabamun Review Committee and determine its role, responsibilities, authority and composition within the Yellowhead Regional Planning Commission.
3.1 & 3.3	Alberta Environment		Request Alberta Environment to release the Lake Wabamun Eutrophication and the Lake Level Studies, and request that the Department develop an appropriate public information package for distribution to those persons living within the watershed and those using the lake.
3.1	Municipalities	2	Encourage all municipalities to continue communication with the Stony Plain - Lac Ste. Anne Health Unit for the purpose of responding to potential problem sewage disposal systems.

Section Number	Jurisdiction	Policy Number	Implementation Action
3.1	Health Unit	2	Encourage all municipalities to request that the health Unit establish a water quality testing program in the public swimming area and elsewhere as required. The results should be forwarded to the Review Committee for information and action.
3.10	Municipalities	6	Continue to maintain a co-operative communication system with the Paul Indian Band in order to review and to have some input into proposed development of recreation and tourism facilities that may impact on lake resources or existing communities.
3.4	Municipalities	1,2,4	Initiate by respective municipalities, in cooperation with the appropriate authorities, the amendment of regulations to establish managed swimming areas and speed restriction
3.10	Canada Fish-eries & Oceans	1,2	

Section **Jurisdiction** **Policy**
Number **Number**

Implementation Action

areas for power boats.
Precise definition of these areas should be determined by the adjacent municipality and property owners. In addition, a detailed engineering feasibility study of potential sites for the development of a deep-draught boat launch and dock at the west end of the lake should be requested to be undertaken by appropriate authorities. The dock facility should include appropriate sewage pump-out facilities for boats using the lake.

3.10 Municipalities 2,3

Initiate by the County of Parkland, in cooperation with the other municipalities and Alberta Recreation and Parks, a review of funding and administrative options for the development and management of public access points to the lake.

Section Number	Jurisdiction	Policy Number	Implementation Action
3.4	Municipalities Canada Coast Guard	3,5,6	Initiate co-operatively by all municipalities and interest groups a request to Canadian Coast Guard an investigation into identifying navigation hazards and public winter hazard areas, a public emergency rescue response program.
3.4	Municipalities	6	Initiate a program to install signs to advise the public of winter (ice) hazard areas.

4.3.3 Monitoring Program

To effectively implement the policies of the Lake Wabamun Management Plan and to monitor the various programs, a Lake Wabamun Review Committee may be established. Their responsibilities, as presented in Section 12, are threefold:

- . to co-ordinate, for the municipalities as a whole, specific management programs;
- . to act as a liaison among government, industry and Lake Wabamun residents; and
- . to be a facilitator to initiate management programs as recommended in Section 3.0.

The Lake Wabamun Review Committee will require technical support and would formally request assistance from the appropriate authorities as the need arises. The Review Committee is not intended to conduct any studies, but rather to request and co-ordinate studies through appropriate agencies. Administrative support for the Review Committee will also be required.

The Review Committee will meet based upon a mutually agreed upon annual schedule by the municipalities and Yellowhead Regional Planning Commission. The schedule will be flexible depending upon the extent and types of developments proposed. It is recommended that in three years, the progress of implementing the policies of the Plan be reviewed by the Review Committee in co-operation with the appropriate government agencies and groups.

At the end of three years, a major review of the status, effectiveness and overall future requirements of the programs should be evaluated and reported to the Review Committee. This assessment could be undertaken by the Yellowhead Regional Planning Commission and responsible government agencies on behalf of the Lake Wabamun Review Committee.

The following programs which should be evaluated during the 3-year review program are:

1. An assessment by Alberta Environment of public information programs concerning:
 - lake levels,
 - water quality, and
 - weed control.

The information should provide a statement concerning the current status of any program, the problems encountered, and progress made to overcome these problems.

2. Status of the implementation of the Whitewood End Land Use Plan from the County of Parkland and TransAlta Utilities.
3. Problems identified related to the mining activities in the watershed, and report on the status of their resolution by the County of Parkland and TransAlta Utilities.
4. Effectiveness of policies as assessed by appropriate regulatory agencies as they relate to:
 - sewage disposal systems,
 - agricultural activities,
 - mining operations,
 - fish and wildlife resources,
 - noise and air pollution problems, and
 - Surface water use and safety.-
5. Monitor municipal legislation and provide a status report on how policies of the plan have (or have not) been adopted or enforced.
6. Review, with the assistance of the municipalities and the Yellowhead Regional Planning Commission, the Plan, and identify:
 - how and where development has occurred,

- how the plan has been amended, and
- what changes in demand for residential use have occurred (existing supply, expansion area development and where additional expansion areas should be allowed), and
- what changes in demand for recreation facilities have occurred at such areas as the Provincial Parks, Our World Resort Marina Village, and the proposed Paul Band tourism resort development and institutional facilities. The intent of this review is to identify additional residential areas for development, additional public recreational facilities needed, the utilization levels and status of public access points and the need for new public swimming and boat restriction areas.

7. Review the role, authority, responsibility and composition of the Lake Wabamun Review Committee and ultimately the need for its continuation.

Appendix



*Preparation of
Lake Wabamun Management Plan*

APPENDIX A

PREPARATION OF THE LAKE WABAMUN MANAGEMENT PLAN

The preparation of the Lake Wabamun Management Plan involved drawing together the key conclusions from the assessments of the natural resource, land use and infrastructure conditions, opinions of property owners, demand trends, and existing policies and programs. These conclusions are summarized in this section as supporting material to the recommendations presented in the Plan. In addition, the Existing Land Use Map (Map 3, see after page 14) Environmental Resource Evaluation Map (Map 4, see after page 32), and Potential Development Area Map (Map 5, see after page 45) are included for reference.

The Lake Wabamun Watershed area has a diverse pattern of resource features and land uses which pose both environmental and development concerns and opportunities. From the resource perspective, water quality, steep slopes, weed growth, fisheries and wildlife habitat are key environmental issues. From the land use perspective, the sometimes conflicting pressures for agricultural conservation, expansion of industrial mining, and the increasing demand for recreation and residential development all must be balanced in a future management plan for Lake Wabamun.

Resource Analysis

The Lake Wabamun Watershed encompasses 340 square kilometres of land which drains into Lake Wabamun. The lake drains by way of Wabamun Creek into the North Saskatchewan River.

The bedrock of the study area is bentonite, shale, and coal. The coal is mined at several locations in the watershed to provide feedstock for the Wabamun and Sundance Power Plants. Throughout most of the study area, the bedrock is overlain by a mantle of glacial till and some small pockets of gravel outwash. Upland vegetation consists of aspen poplar, balsam poplar, and white spruce, while wetland forests are comprised of poplar, black spruce, and willow. Emergent vegetation along the shore is generally bulrush and cattail.

The key conclusions drawn from the analysis of Lake Wabamun watershed resources are presented below and are identified on Map 4.

Slope Analysis

- . The steep eroding slopes along the north shore of the lake are too steep and unstable for development (Map 4).
- . The steep slopes identified south of the lake are too steep for conventional development. A site evaluation should be conducted for any proposed developments along the lake shore. The steep areas in the TransAlta Utilities Ltd. lease will likely be disturbed by strip mining activities.

Soil Limitations to Development

- . Much of the Lake Wabamun watershed, particularly those areas along the shore, have severe limitations for single family dwellings. This is based on mapping and airphoto interpretation of general areas, and is not accurate on a site specific basis. Nevertheless, the interpretation suggests that site specific soil testing should be conducted in all areas rated as moderate or severe, before

subdivision and/or development approval. Many of the limitations, including poor drainage, salinity and steep slopes, can be overcome by appropriate construction.

- . Much of the Lake Wabamun Watershed, particularly around the lake shore, was given a severe limitation for sewage disposal based on interpretation of soil type.
- . The soils of the Lake Wabamun Watershed have very few limitations for extensive or intensive recreational use.

Groundwater

- . Both groundwater yield and quality are acceptable for potable use; however, wells should be tested regularly by the local Board of Health.

Water Quality

- . Respondents to the questionnaire survey felt that water quality issues are important to the management of land and water uses at Lake Wabamun.
- . Water quality testing has shown that Lake Wabamun is well within the acceptable limits for contact recreation.
- . Based on the nutrient loading, Lake Wabamun is classified as a mesoeutrophic lake. The lake will naturally become eutrophic, but if nutrient loads increase, this natural process will be accelerated even more.
- . Monitoring by Alberta Environment has shown that the major contribution of nutrient was from land use practices in the watershed and that sewage from shoreland developments was a small percentage of the overall phosphorus loading of the lake. However, it was recognized that there may be

some localized problem areas. Respondents to the questionnaire felt that a program to increase awareness of land and water users about nutrient loading to the lake could be useful, and that inspection and voluntary upgrading of sewage systems should be promoted. In addition, respondents were in favour of nutrient control measures being required for all new construction and resource extraction projects in the watershed.

Weed growth is related to a variety of factors, including water level, water temperature, and nutrient loading. Mechanical harvesting is felt by the Lake Wabamun Advisory Committee to be the best management method at the present time. The responses to the questionnaire survey showed no consensus of opinion regarding increasing the weed harvest program on a user pay basis.

Water Levels

The level of Lake Wabamun fluctuates continually based on the balance of precipitation, evaporation, groundwater flow, and outflow through Wabamun Creek. Beaver dams along Wabamun Creek can exacerbate the effects of high water levels. Studies by Alberta Environment have shown that regulation at the lake outlet will only reduce fluctuations by about 10%. The recommendations of the Lake Wabamun Water Level Committee's investigations should be reviewed and incorporated into the Lake Management Plan when they are made available.

Respondents to the questionnaire survey showed no consensus of opinion regarding lake stabilization. Fifty-six percent favoured lake stabilization and 44% did not favour stabilization.

Fish and Wildlife Habitat

- . Lake Wabamun supports a whitefish commercial fishery and a domestic and sport fishery for whitefish and pike (Map 4). The lake has been stocked with walleye recently to diversify the sport fishery. Creel census data from Alberta Fish and Wildlife indicate that the lake is nearing its capacity for commercial and sport fishing. Questionnaire respondents felt that fish stocking programs at Lake Wabamun should be increased.
- . Lake Wabamun is an important staging and production area for waterfowl. Good habitat is found in the emergent vegetation along the lakeshore.
- . Upland forested corridors in the Lake Wabamun watershed provide cover and habitat for ungulate species and furbearers.
- . Respondents to the questionnaire felt that wildlife protection areas should be designated. However, there are no areas at Lake Wabamun that are significant enough, from a wildlife point of view, to be designated as a provincial sanctuary. However, locally significant natural environment areas can be designated in the land use bylaw for scenic purposes and wildlife habitat.

Noise and Air Pollution

- . The types of noise pollution concerns identified by watershed residents were related to haul trucks, blow downs at the power plants and power boats on the lake.

- . Dust from traffic on haul road and generally on the road network was considered a minor issue.

Land Use Assessment

The Lake Wabamun Watershed is comprised of a relatively complex land use pattern including agricultural, recreational, residential and industrial resource extraction activities (Map 3). When comparing land uses by area, industrial land uses account for approximately 27% of the watershed, whereas incorporated municipalities and unincorporated subdivisions represent less than 5%. In contrast, however, lake frontage property, the five summer villages and the Village of Wabamun take up 19% of the lake front. Almost 16% of the shoreline is owned by TransAlta Utilities Corporation. The Paul Indian Band owns approximately 27% of the shoreline, which represents some of the best developable property around the lake.

The key conclusions drawn from the analysis of existing land uses are presented below:

Agriculture

- . Areas possessing CLI for Agricultural Classes 3 and 4 (over half of the watershed area) are important for pasture, hay and cattle grazing and should be retained in an agricultural land use.
- . The five existing intensive livestock operations (100-400 head) appear to pose no existing water pollution problems to the lake, although these operations should be inspected by Alberta Agriculture and Alberta Environment.

- . Any intensive livestock operation is considered a potential pollution problem because of the small size of the Lake Wabamun Watershed.

Incorporated Residential Development

- . There is a surplus of registered lots (31% or 379) in incorporated municipalities where infill could occur, although only 5% (or 18 lots) are lakeshore properties. Some vacant lots held by adjacent owners or municipalities may not be available for development at present, due to current personal or municipal policy decisions. To the majority of property owners, the issue of development of lakefront versus backlots was very important, particularly those respondents from the north shore.
- . There are certain incorporated municipalities where over 75% of the available lots are developed, and where other adjacent expansion areas should be considered (e.g. Seba Beach).
- . There are certain incorporated municipalities such as Lakeview, Point Alison, and Kapsiwin, where natural resource constraints limit residential expansion opportunities.
- . Country residential subdivisions in the back watershed area are in low demand. Only 3.8% of available lots are developed.

Unincorporated Residential Development

- . There is a significant lot surplus (42% or 455 lots) available, particularly in more recently developed subdivisions where infilling could occur.

- . Only 57 or 12% of the undeveloped lots have lake frontage.
- . Several of the older subdivisions, such as Gardener's Cove and Freeman, are over 80% developed and adjacent expansion areas should be considered. However, in certain areas such as Fallis, natural resource constraints limit residential expansion opportunities.
- . There was no consensus of opinion by property owner respondents concerning the encouragement of clustered cottage development.

Recreational Development

- . Wabamun Lake Provincial Park will continue to be a generator of regional recreation and tourist travel. Upgrading and improving the opportunities at the park should be supported to meet these market requirements.
- . Expanding day-use opportunities is required at the provincial park, as well as in other areas around the lake. Over 45% of the respondents were in favour of a regional park program, but many respondents (35%) were undecided.
- . With upgrading, expansion and new marketing programs, the six institutional facilities could significantly increase the recreational opportunities on Lake Wabamun.
- . Lake Wabamun is the most important regional and provincial lake for sailing and boating (based upon the questionnaire survey, there are over 2,900 boats owned by ratepayers); thus, the support facilities and services (i.e. boat launches, adjacent day-use areas, and sewage pump out

- systems) should be upgraded, developed and properly managed. Over 58% of the respondents agreed/strongly agreed that public docking/launching and lake access points should be developed.
- . Areas of heavy recreational use occur in the Lakeview - Kapasiwin area and at the extreme west end of the lake; consequently, any future development should be directed away from these areas;
 - . Informal lake access areas are in high demand, but maintenance problems such as litter, congestion, and water pollution are evident. The development or formalizing of specific lake access sites for public recreation could alleviate these problems.
 - . The four-season destination resorts proposed for the Wabamun Indian Reserve will satisfy some recreational demand but, depending upon the location, could impact seriously on existing adjacent cottage developments (e.g. Kapasiwin). Approximately 50% of the respondents were not in support of encouraging commercial recreation development on the lake.
 - . Winter recreational activities, such as ice fishing and cross-country skiing, are popular. Facilities to support these activities (e.g. lake access points, garbage cans) should be provided.

Municipal Servicing

- . There are reported problems of potential malfunctioning sewage disposal systems, such as pit toilets and septic tile fields, in certain lakeshore areas which require investigation and correction. Over 70% of the respondents

were in favour of a program of voluntary compliance for inspection and upgrading of existing sewage disposal systems.

- . There are five landfill sites within the Lake Wabamun Watershed. Alberta Environment has recommended that these sites be closed and restored, and that they should be replaced by transfer stations and a regional waste management system.
- . There are no sewage pumpout facilities for the estimated 100 cabin vessels using Lake Wabamun. There is a need for a convenient, safe pump-out system to ensure that sewage is not illicitly pumped into the lake.
- . Over 85% of the surveyed agreed/strongly agreed that an increased awareness program concerning nutrient loading of the lake should be implemented.

Industrial Development

- . The reclamation and End Land Use Plans for the Whitewood and Highvale active mine permit areas will guide the future land uses in these areas. These plans should conform to the general intent of the Lake Wabamun Management Plan.

Transportation

- . The CN Railway main line poses a major constraint to potential development along the north shore, but will not be relocated because of extreme high costs. Twinning the line is expected to be after 1990, which will further limit access to the north shore.