CODETTE LAKE PLANNING PROGRAM VOLUME II - DEVELOPMENT PLAN

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1.0 INTRODUCTION

The Rural Municipalities of Nipawin and Torch River have, in the past, demonstrated co-operation in response to mutual needs and concerns in their geographic areas. This has taken the form of participation in inter-municipal planning activities, in addition to their respective zoning bylaw activities. Because of the Nipawin hydroelectric development in close proximity to each rural municipality, increasing co-operation to address mutual concerns is necessary.

The most recent development requiring this co-operative effort is the construction of the Nipawin Hydroelectric Project and the creation of Codette Lake. Both the concerns of the Rural Municipalities and of the Provincial government must be addressed in terms of potential changes in land use, environmental impacts and socioeconomic issues. It can be expected these concerns will arise due to increased public and private development proposals for areas in proximity to Codette Lake.

This Development Plan provides a concept for recreational development and identifies policies that will guide the R.M.'s in making development decisions. The concepts and policies are based on the information provided in Volume I - The Technical Report (accompanying document).

2.0 THE CORRIDOR RECREATIONAL SYSTEM

The linear nature of Codette Lake provides an opportunity for recreational development within the conceptual framework of a "corridor recreational system". This system is appropriate because the lake forms a continuous ribbon connecting potential recreation nodes located along the reservoir. This section provides an explanation of the way corridor systems function theoretically. The next section applies this concept to Codette Lake.

A corridor recreational system consists of several interacting components forming a unified whole and may include definable parts such as hunting areas, ski hills, water access points. For the system to function properly, the location of the various components must be spatially and temporally located along the corridor in such a manner that no need is ignored or in such a manner that no one need is over represented in a particular location. Three broad categories of recreation use are likely to occur or be in demand along the corridor. These are are outlined below and illustrated on Figure 1.

- o Extensive Environmentally Based Recreation such as cross-country skiing, wildlife viewing, snowmobiling. Wilderness or backcountry recreational uses may be included in this category (e.g. backcountry camping or hunting).
- o Intensive Facility Based Recreation such as downhill skiing, beaches, campgrounds, boat launches.
- o Heritage Interpretation Based Recreation (e.g. natural and human heritage interpretive sites or centres).

It is important that a balance be reached when providing recreational opportunities throughout the corridor; the system does not function optimally without a balance due the linear nature of the reservoir. In an economic perspective, an efficient system will also be easier to promote and profit from. As such, goals and objectives for the system are required. These are suggested below.

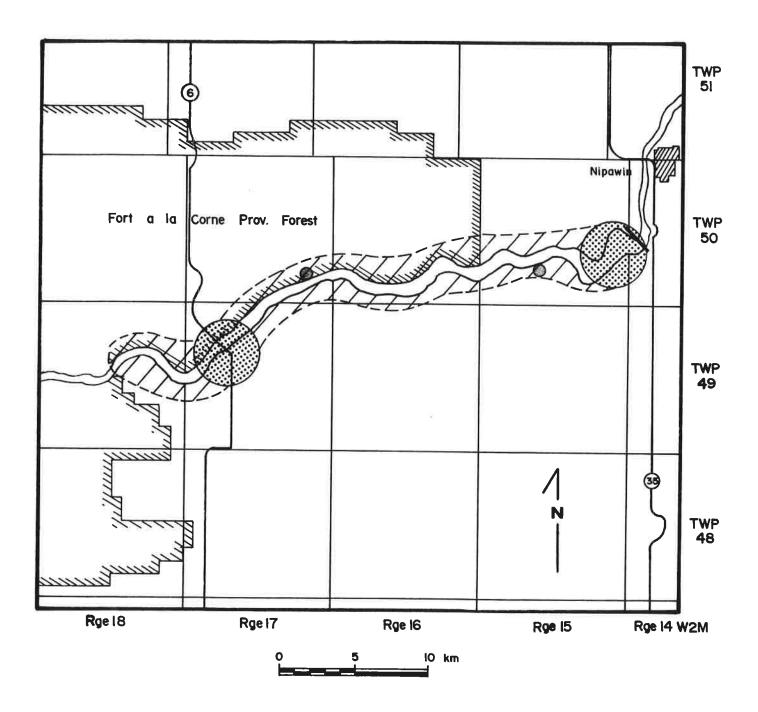


Figure 1. RECREATIONAL CONCEPT FOR CODETTE RESERVOIR



Goals

To provide a variety of outdoor recreation opportunities on, and adjacent to, Codette Lake and to perserve significant natural, cultural and recreational environments.

Objectives

These are reflected in the Policy Plan presented later in this document; however, important objectives are highlighted below:

1. Recreation Objective

To provide a regional population with a variety of water-based and natural environment based outdoor recreation opportunities, ranging form high intensity day use to low intensity wilderness experiences.

2. Environmental Protection Objective

To preserve or protect significant natural components of the Codette Lake environment, including important wildlife habitat and sensitive slopes or terrain.

3. Heritage Resource Objective

To provide opportunities for the exploration appreciation and understanding of the natural and human heritage of the Codette Lake region.

4. Tourism Objective

To provide outdoor recreation opportunities to potential users living beyond the regional boundary.

2.1 THE CONCEPT FOR CODETTE LAKE

In applying the recreation corridor concept to Codette Lake two nodes become important; an eastern node near Nipawin which includes Bushfield's Flats and the Pit 13 Site, and a western node which includes the Wapiti Regional Park and the Wapiti Campground. These nodes are both located adjacent to major access routes; they are situated approximately at the periphery of the Reservoir; they are very attractive areas; and siting of facilities within the nodes appears to be possible with a minimum of environmental impacts. These nodes provide, or have the potential to provide, intensive facility based recreation opportunities. As discussed in the technical report, facilities, in addition to the existing ski hill and campground, may include boat launch ramps, stores, rental accommodations, and others. These significant areas will provide the much needed day-use and weekend use facilities which will attract regional users to the reservoir.

For a system to function properly, components must be connected. Codette Lake provides the connection which allows movement from site to site and from node to node. The ability to move, in association with the numerous, yet undeveloped recreational opportunities between nodes, forms the basis of the corridor concept for Codette Lake. Either identified node may function independently from the other or, if appropriate complementary developments exist, may interact with the other. The concept of interaction is important and is discussed below.

Nodal interaction depends upon the development of recreational opportunities within the hinterland region between the eastern and western reaches of the reservoir. The Fort-a-la-Corne Forest, numerous small flooded coulees, and the terraces adjacent to the lake provide the undeveloped recreation potential.

Potential sites which could be used as picnic areas, campgrounds, rest areas, boat launches or marinas have been identified in the Technical Report. These are illustrated on Figure 2. Of these, Canoe Cove and River House are two very attractive sites which could provide a water based "wilderness" linkage between the two nodes at the east and west end of the Reservoir. They are isolated, convey the wilderness atmosphere and are appropriate for parties seeking a non-commercialized

experience. Most other sites can be accessed by road and provide recreation areas or boat launches for the more vehicle-oriented recreationists.

Most of the sites are located on terraces where environmental concerns are not as pronounced as those along the valley walls. The Bushfield's Flats site, however, is located on the upland region, back from the banks that are prone to gullying. This site along with the other three sites within the two primary development nodes are dealt with in greater detail in the next section.

Trails between sites and nodes provide a second form of linkage especially north of the reservoir where trails already exist.

In summary, the recreation corridor concept for Codette Lake envisions two primary nodes, one at each end of the reservoir. These nodes provide the intensive recreation facilities demanded by a majority of users. They also provide embarkation and destination sites for canoeists, hunters, cross-country skiers, boaters, and snow-mobilers wishing to take advantage of the extensive environmental-based recreation attractions and the heritage attractions of the Codette Lake environment.

The recreation corridor units should function interdependently and should provide a four season range of recreation opportunities. Because the environmental conditions often produce long recreation shoulder seasons, no one development can feasibly accommodate all uses, or rely solely on one use. Therefore, it is envisioned that intensive facilities will co-operate to provide a hunting experience, a family-oriented skiing experience, a nature interpretation experience, and a variety of water-based experiences.

This concept of development and use must be qualified in terms of time. A realistic timeframe for development is probably in the order of 10 to 15 years based on knowledge of other reservoir developments in Saskatchewan and the prairies (Goode, 1981). The development of Codette Lake will probably evolve at a fairly slow pace with interest and activity growing as new facilities and beaches become available, water quality (potentially) improves, and tourism promotion increases.

A phasing of development, based on Beak's site evaluation, (Appendix A - Technical Report) is as follows. The Wapiti Node is the most likely development for the first phase; that is, the near future. Bushfield's Flats is recommended for the second phase of development following the removal of the rock crushing operation. The site is particularly suited to private developers, offering both tourists and the local populations a variety of recreation services. The Pit 13 site has high potential for future development, however, the need to upgrade the road and the required removal of a large gravel stockpile places this site into a third or long term development phase.

These conclusions and recommendations do not preclude development at other sites. There is a recognized opportunity for small scale country residential or cottage development which could be proposed by individuals at any time in the future development of the reservoir.

3.0 SITE USE AND DEVELOPMENT

The four sites which rated the highest in Beak's evaluation (see Technical Report Appendix A) were further analysed in terms of possible siting for identified facilities. These sites are within the two primary nodes discussed in the previous section. Appendix B in the Technical Report summarizes the approach to evaluation of site use and the review of shoreline erosion rates. The following sections include recommendations for possible site use and development. Figure 3 identifies the locations of the development sites discussed below.

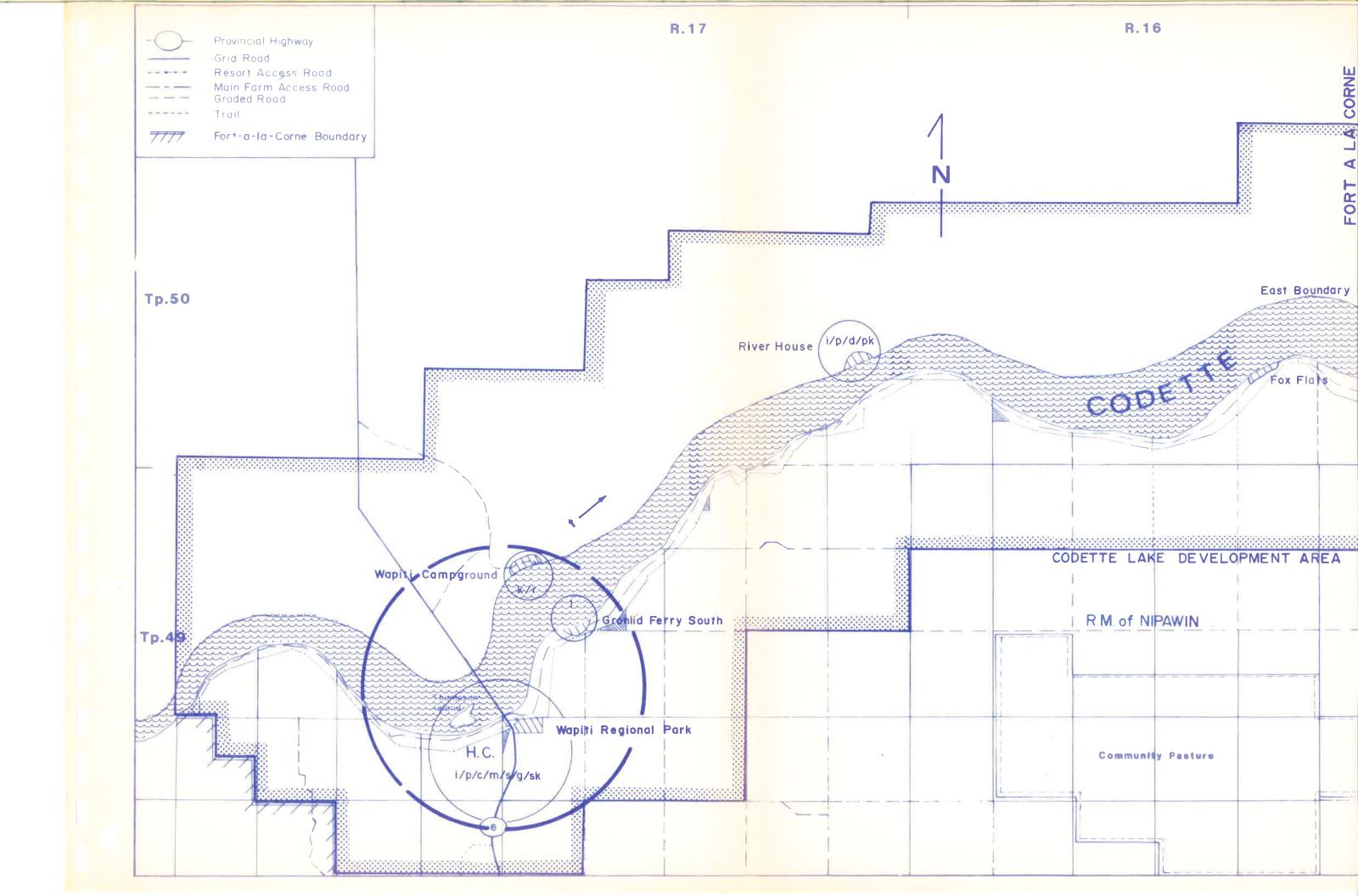
The following evaluation and maps utilize the concept of a safe horizontal setback line for permanent structures. Such a line was used prior to filling the reservoir and was the basis for purchasing land for SPC's buffer zone. The setback line established on the maps in this section is a re-evaluated line established from air photos taken after the reservoir was filled. In some cases, the recommended setback is greater than previously identified, in others it is closer to the reservoir. It is apparent at Bushfield's Flats and Pit 13 that SPC has purchased land in excess of that needed to preserve the environmental integrity of the riverbank. Siting of permanent structures at these locations, therefore, often includes areas within SPC's purchase line.

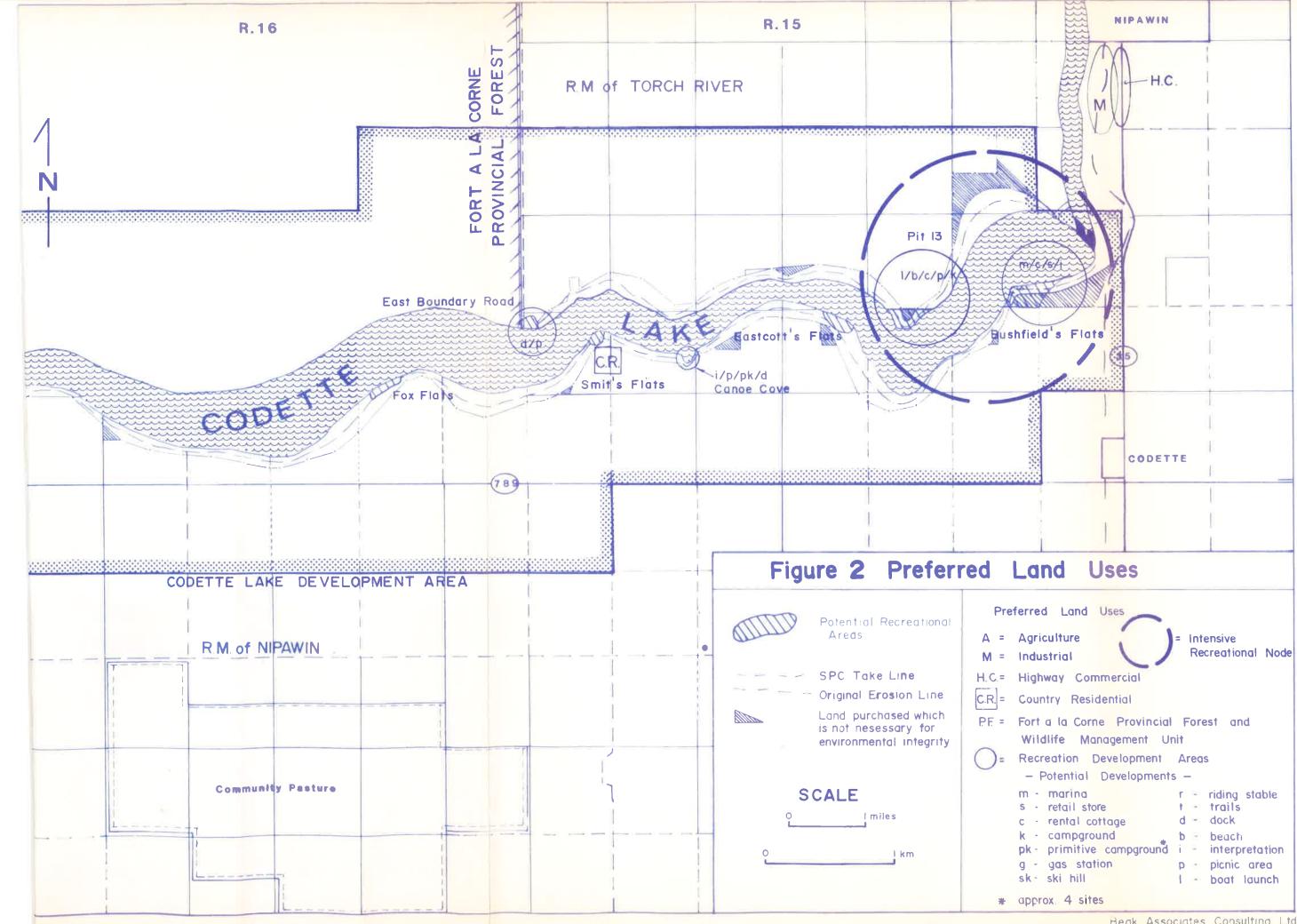
Area 1: Development Site North of Pit 13

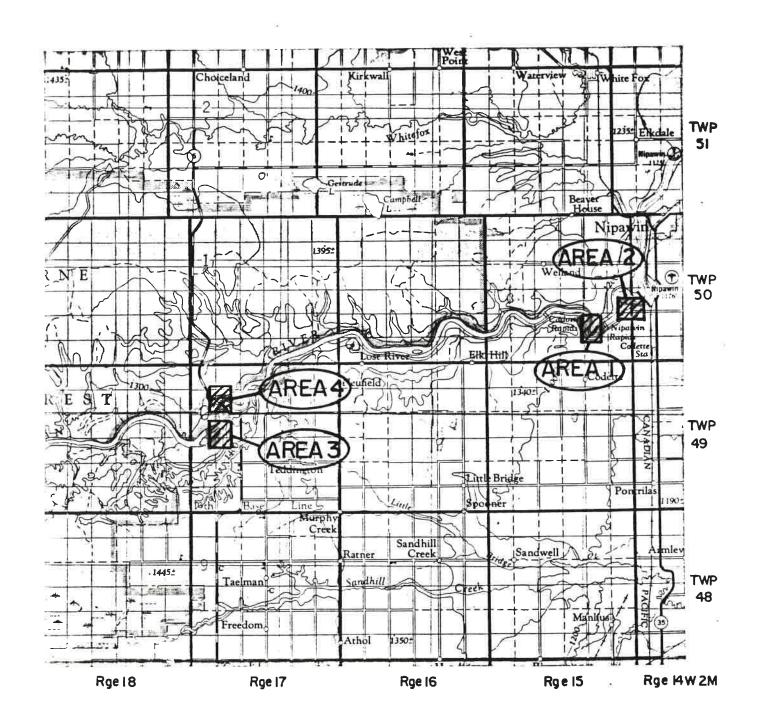
This development site, detailed on Figure 4, is located on a promotary of land that projects into Codette Lake. As a result, the point is subject to greater erosion than takes place in bays and along straight reaches of shoreline.

Area A (Figure 4) is considered suitable for cottage development, however, this will place some of the better cottage development area inside and some of it outside the SPC purchase line. The large stockpiles of gravel between SPC's purchase line and the recommended safe building line setback for permanent structures is an impediment to development in the near future unless the gravel is hauled away.

Location B is preferred for a swimming (if water quality improves) and campground area, although some foreshore and backshore earthwork will be needed to prepare



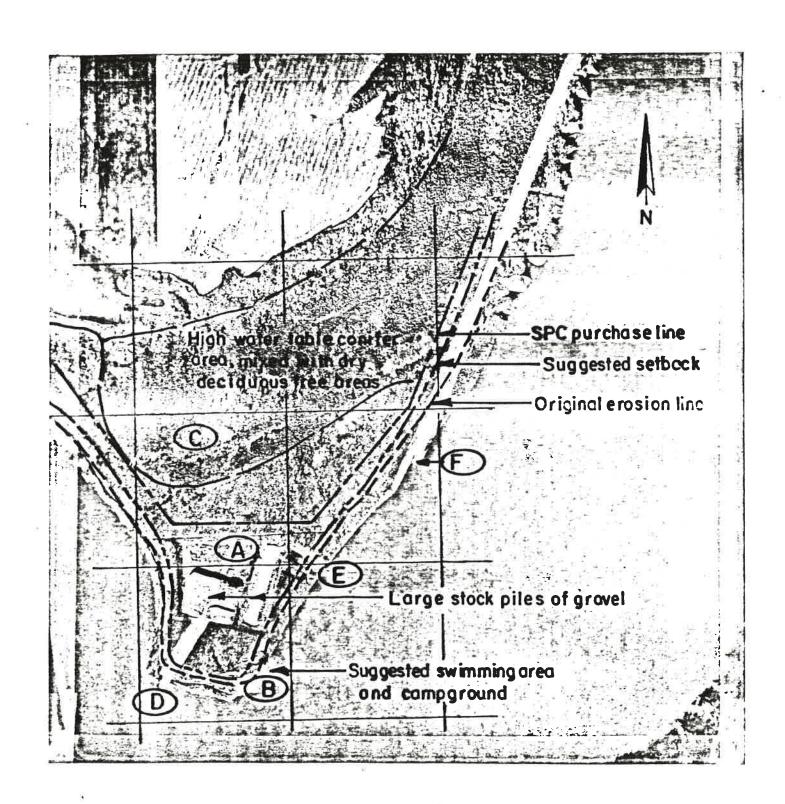


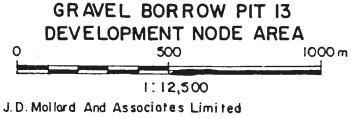


KEY LOCATION MAP SHOWING PROPOSED DEVELOPMENT NODE AREAS



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suitable sites. The trees have already been removed over part of the shoreland area. In the photos, the nearshore zone at B appears shallower than it is elsewhere. Therefore, nearshore soundings are recommended to check on the bathymetry.

The area around B (Figure 4) is subject to a certain amount of longshore sediment accretion, with the sediment originating along the north lake shore to the east. The rate of sediment accumulation is difficult to predict because the stratigraphy along the shoreline is not known in detail. This appears to be the best area available for the proposed campground and potential swimming areas.

A large area of channelled terrace surface occurs to the north of the dry treed area. This area is marked C on Figure 4. The high water table (wet) areas here may require drainage measures and perhaps local fills, if the area is developed extensively for purposes of cottage rental.

Three alternative areas are noted for a boat launch site. They are marked D, E and F (Figure 4). None of the sites are as protected from wind, wave and ice action, as is desirable. Also, all three alternatives require earthwork (excavation and fill).

Area 2: Bushfield Flat Terrace Area

Geologically, this area (Figure 5) is different from Pit 13 in that a thick layer of deltaic sand overlies a thin gravel (or boulder) layer that overlies till. The contact of granular material over till is situated very close to full supply level (FSL). As a result, discharge from springs and the formation of horseshoe-shaped spring alcoves from groundwater sapping are concerns that require field checking at points along the shoreline.

The original erosion and SPC land purchase lines are plotted on Figure 5 and the shore zone has been re-examined for erosion potential.

A new erosion line is presented on Figure 5. It is fairly close to the old one. The new erosion line is 50 metres back from the top of terrace face. Where waves erode till, the erosion rate will be less than where they erode sand. That is, shoreline recession

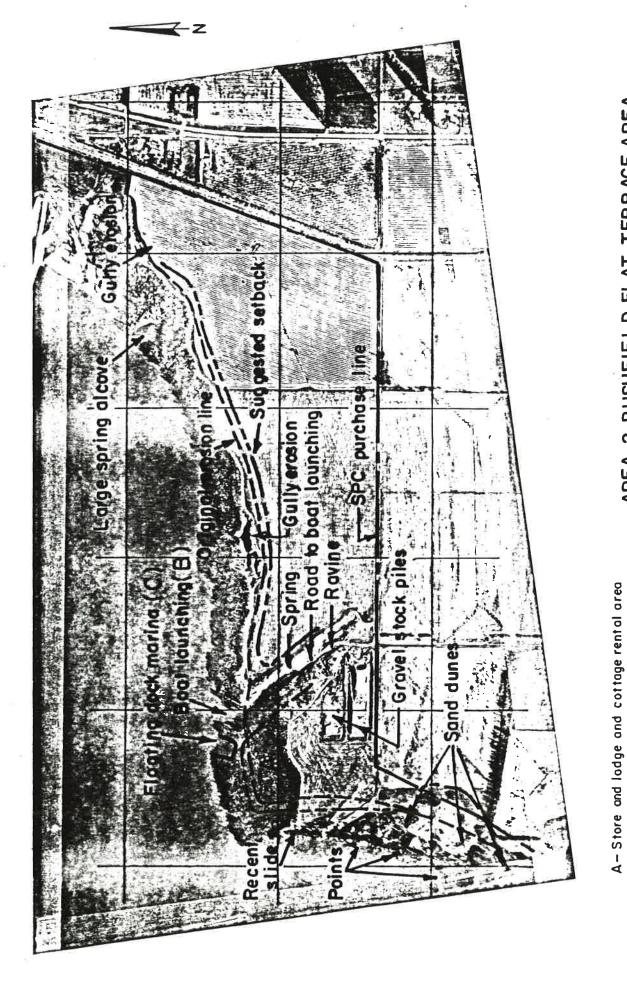
will be faster where sand forms the shoreline. The elevation of sand over till should be plotted because the contact is thought to vary locally and be located close to the full supply level of 348 metres.

The area on the wooded terrace west of the ravine that is available for development is considerably reduced because of long-term erosion and sloughing potential. However, the smaller area should be adequate for a store and a lodge as well as several cottage sites. The adjoining upland area extends considerably the developable area that is available on the terrace surface. Once again, gravel stockpiles reduce the neighboring area on the upland.

Development on the densely wooded valley side located east of the ravine is thought to be hazardous. East of the ravine a deep recently formed gully indicates convincingly how susceptible these sandy and silty sand soil deposits are to gully erosion, once the erosion starts. To the southwest of the ravine, a large area of wooded sand dunes (Figure 5) indicates just how susceptible these sands are to wind erosion on bare (denuded) valley sides. Thus, manmade removal of trees must be carefully undertaken so as not to instigate gully erosion, or wind erosion.

The most logical place for a protected boat launch site is where water enters the ravine mouth. This is marked 'B' on Figure 5. Here again, local earthwork and engineering will be required.

The best place for a marina is in the small alcove area west of a small point and west of the proposed boat launch site. The point of land that separates the proposed boat launch site B from the proposed marina site A will likely have to be protected by riprap. The alcove at the suggested marina site should be examined on the ground for evidence of spring discharge, past sloughing, and gully erosion. Reasonably good access and moderate protection from winds and waves offer advantages. The trees here are so dense and so tall that the ground surrounding the proposed marina location cannot be seen in the air photos. Because ice-push can easily damage marinas and boat launch sites, locations at recessed shorelines are favourable. High steep valley side, recent sloughing, and exposure to wind and waves on the west side of the terrace at A are unfavourable for a marina site.



AREA 2 BUSHFIELD FLAT TERRACE AREA

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FIGURE 5.

C-Floating dock marina

B - Boot lounching

Area 3: Wapiti Regional Park

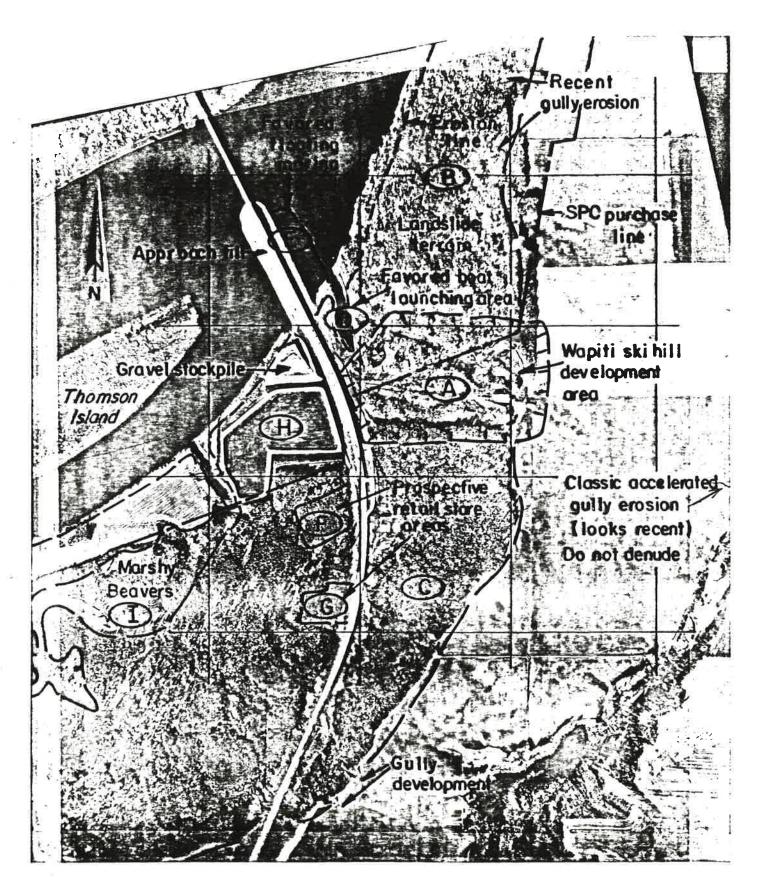
Wapiti Regional Park is illustrated on Figure 6. The Ski Hill area at A as well as areas to the north (B) and to the south (C) are located on landslide terrain whose susceptibility to future movement is considered marginal. That is, any major change in the present system of forces acting on the slope could initiate movements in the future even without the adverse effect of extensive toe erosion from wave action (see Mollard 1982 for more detail). Geotechnical studies indicate that the area east of Highway No. 6 (C on Figure 6) is suitable for cottage development.

A boat launch site location east of the highway approach fill at location D is recommended. Again, soundings will be required as well as earthwork to provide a suitable area for cars to turn around on dry ground. The approach area will require a gravel surface since the launch area will be muddy during wet weather.

A potential floating dock marina is located at E. Dominant wind directions are from the northwest and northeast. During the open water season the wind blows for an average of 30 hours at speeds greater than 40 kilometres per hour from the northeast and from the northwest. The straight stretch to the northeast is a little over one kilometre. The long approach fill acts as protection from northwest winds. Because of the protected nature of the area at E, it is suggested that a floating dock marina is possible on the east side of the approach fill, which is well riprapped. Thus, the proposed boat launch site at D and a proposed marina site at E would be located very near each other.

Two possible alternative sites for a retail store and lodge have been selected at F and G on the west side of Highway No. 6. Here again, careful development is required because of the tendency for exposed clay subsoils on steep slopes to erode deep gullies very quickly.

This interesting manmade feature at H is a fish pond that SPC built for Department of Parks and Renewable Resources. Gravel in the stockpile just north of the fish pond was harvested from Thomson Island, located to the west of the approach fill.



WAPITI REGIONAL PARK C.G. WILLIS BRIDGE SOUTH SIDE OF LAKE

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FIGURE 6.

A marshy area here would be interesting for a wildlife preserve, since beavers use the area now. It is also likely to be infested with mosquitoes during the summer.

Area 4: C.G. Willis Bridge North Side of Codette Lake

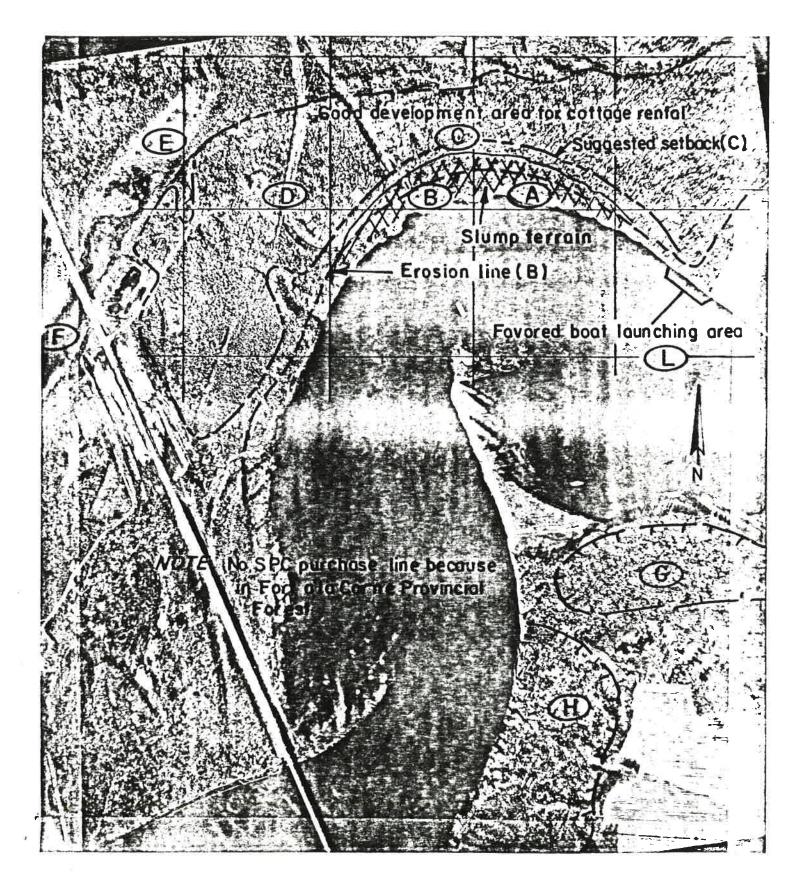
The proposed development site (see figure 7) on the north side of Codette Lake east of the C.G. Willis Bridge is located above a formerly actively undercut bend in the Saskatchewan River. Lateral river erosion at the base of this slope produced a multiple retrogressive slide consisting of several slump blocks (see crossed area at A).

The erosion line determined from an original study (Mollard 1983) is shown at B, and the suggested setback line at C.

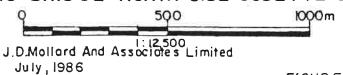
The wooded upland at D is an elevated terrace of the Saskatchewan River. It is well drained and well treed. It is anticipated that the soil materials here will consist of thin silt (1 to 2 metres) over sand and gravel that rests on glacial till. An abandoned back channel of the Saskatchewan River can be seen at E but is partially obliterated to the east of here. The channel is marshy, with a small oxbow remnant at F. Area D is an excellent area for a campground and riding stable. It is also a good area for rental cottages. It is considered to be the best of any at the four proposed developments nodes. However, the area is located in the Fort-a-la-Corne Provincial Forest, and therefore will almost certainly not be available for cottage development. A primitive campground and picnic area may be possible.

The boat launch site at L has been selected because the bank height above the lakeshore here is significantly less than it is west of the slide area. The proposed boat launch area is also dry and well treed, and the site is reasonably well protected against wind and waves.

Area G is located on the south side of the Codette Lake. It is a possible area for rental cottage development on the south side of Codette Lake. Access to this site exists, since the area adjoins the west side of the old road down to the Gronlid ferry crossing. Although area G is located on old landslide terrain, slope movements here appear much older and therefore more stable than they do to the west in area H.



WAPITI CAMPGROUND C.G. WILLIS BRIDGE NORTH SIDE CODETTE LAKE



4.0 PLAN POLICIES

Section 51 of the Planning and Development Act (1983) states that the purpose of a Development Plan is to serve as a framework whereby the municipality may be guided in making development decisions, to identify the factors relevant to the use and development of land, and to identify the critical problems and opportunities concerning the development of land and the social, environmental and economic effects of that development. The plan therefore sets out the desired timing patterns and characteristics of the future physical, social and economic development of the municipality and determines the probable consequences of that development, establishes and specifies the programs and actions necessary for the implementation of the development plan, and outlines the methods whereby the best use and development of land and other resources in adjacent municipalities, or affected areas immediately abutting thereto, may be co-ordinated.

A Development Plan focuses on three key elements of municipal planning: issues, objectives and policies, as follows:

Issues: These are matters of concern to a municipality, that affect the future development of the municipality. They are identified by local administrators, the public, and through background reports prepared by planners.

Objectives: These are statements of what a Council is trying to achieve in the long term. Each objective has a single aim or desired result and is attainable within the municipalities natural and financial resources.

Policies: These are statements of what a Council intends to do to achieve the stated objectives. The intent of a policy is to guide Council in its decisions and to guide the public on what factors will be considered in the decision. In some cases an objective may require several policies to achieve the objective, dealing with both short and long term actions. Policies are implemented through zoning bylaws, subdivision approvals or other actions of council. In addition, capital work programs must, generally, be prepared in conjunction with development plans unless this requirement is waived by the Minister. A capital works program is a separate document, describing the capital

projects that will assist in the implementation of plan policies. The program, when required, must be adopted by a separate bylaw that allows for its annual review and updating.

Because Codette Lake represents the common boundary between the R.M. of Nipawin and the R.M. of Torch River, Zoning Bylaws and the Development Plan Bylaws must be adopted by each Rural Municipality in order to implement the policies presented in the Development Plan.

The following sections of the development plan include overall goals for Codette Lake, and objectives and policies for each issue that relates to Codette Lake. The policies and bylaws apply to the area presented in Figure 2 - the Preferred Land Use Map.

5.0 GOALS OF THE PLAN

Presented below are the overall goals that the Rural Municipalities of Torch River and Nipawin have adopted in order to direct the formulation of policies for the development and planning of Codette Lake and the area around it.

- 5.1 To ensure that the primary purpose of Codette Lake is power generation.
- 5.2 To maintain the agricultural land use adjacent to the reservoir, within the buffer zone and adjacent to proposed development nodes.
- 5.3 To maintain the natural conditions of the Fort-a-la-Corne Provincial Forest and Wildlife Management Unit primarily for the conservation of wildlife and forest resources, until such time that government policies for this area change or a specific management plan for this area is prepared.
- 5.4 To establish development safeguards with regard to hazard shorelines affected by slumping or wave action.
- 5.5 To establish policies regarding the creation of development nodes, the associated transportation networks, and the servicing and budgeting requirements of the Council.
- 5.6 To develop land use policies which will govern commercial developments and cottage subdivisions adjacent to the reservoir and within the buffer zone.
- 5.7 To develop policies which assure that land, particularly the potential recreation sites and development nodes, is developed in an orderly, safe and efficient manner.
- 5.8 To develop policies regarding adjacent or regional developments, particularly the recreation areas on Tobin Lake, and the Nipawin and Wapiti Regional Parks.

The next sections include more detailed objectives and policies to be used by the Council to implement the plan.

6.0 CODETTE LAKE AND SASKATCHEWAN POWER CORPORATION

6.1 OBJECTIVES

6.1.1 To ensure that power generation remains the primary use of the reservoir.

6.2 POLICIES

6.2.1 Power generation will be the dominant use of Codette Lake. All development proposals adjacent to the Reservoir must be approved by Saskatchewan Power Corporation. Council shall not approve any development, zoning amendment, or land use change which will have a detrimental effect on the use of Codette Lake for power generation.

7.0 AGRICULTURE

7.1 OBJECTIVES

- 7.1.1 To promote continuation of the farming industry and to ensure that agriculture remains the primary land use in the Rural Municipalities.
- 7.2.2 To conserve agricultural land wherever possible for continuing productive agricultural land use.
- **7.2.3** To minimize the adverse impact of non-agricultural land uses on agriculture.

7.2 POLICIES

- 7.1.1 If conflicts arise between non-noxious extensive agricultural use (specifically excluding intensive live stock operations) and proposed recreational development, agriculture will maintain priority.
- 7.1.2 Agriculture will be the dominant municipal land use, except at identified recreation nodes or country residential uses as identified by this plan and approved by Council and administered by the Zoning Bylaw.
- 5.1.3 The subdivision and fragmentation of agricultural land will not be permitted except in conformance with the Zoning Bylaw and the intent of this plan.

8.0 INTENSIVE AGRICULTURE

8.1 OBJECTIVES

- **8.1.1** To encourage intensive agricultural activities in areas where impacts on the environment are negligible.
- **8.1.2** To ensure intensive live stock operations do not impact on the quality of water in the reservoir or in any underlying aquifers.

8.2 POLICIES

- 8.2.1 Intensive agricultural (excluding intensive live stock) operations, such as nurseries, greenhouses, seed farms and market gardens will be permitted on agricultural land outside the buffer zone, providing that environmental conditions are not adversely affected and that they will not potentially adversely affect development of the recreation sites or tract systems identified in this plan.
- 8.2.2 Intensive live stock operations will be permitted on agricultural land outside the buffer zone with Council's approval. Such operations shall conform to all Provincial Health and Environmental Standards. On aquifers draining into the reservoir, a geotechnical report prepared by a professional engineer shall be provided to the Council.
- 8.2.3 Prior to issueing a development permit for an intensive livestock operation, Council shall give notice to a proponent that a permit under the Pollution (By Live Stock) Control Act and Regulations thereunder is required.

9.0 COUNTRY RESIDENTIAL

9.1 OBJECTIVES

- **9.1.1** To discourage country residential use on high value agricultural land.
- **9.1.2** To ensure country residential developments are prohibited from environmentally hazardous areas.
- 9.1.3 To ensure that country residential developments do not require excessive additions to municipal services or extensive improvements to existing services.

9.2 POLICIES

- **9.2.1** No country residential developments will be allowed within Saskatchewan Power Corporation's buffer area.
- **9.2.2** Country residential developments will be restricted to areas other than those identified for intensive recreation.
- **9.2.3** If conflicts arise between existing agricultural use and proposed country residential use, agriculture will maintain priority.
- 9.2.4 Country residential developments will be subject to a servicing agreement between the Council and the applicant(s). The servicing agreement will outline responsibility for the provision of services, on the basis that they will not place any undue burden on the municipality.
- **9.2.5** Country residential uses shall be allowed on but not be restricted to the site designated on the Preferred Land Use Map.

9.2.6 Any future sites designated as country residential must conform with the policies set out in this development plan.