



SYLVAN LAKE

Public Access Study

FINDINGS & RECOMMENDATIONS REPORT

Prepared For:

**Lacombe County, Red Deer County,
Town of Sylvan Lake, Summer Village of Birchcliff,
Summer Village of Half Moon Bay, Summer Village of Jarvis Bay
Summer Village of Norglenwold, Summer Village of Sunbreaker Cove**

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1	BACKGROUND	1
1.1	SYLVAN LAKE PUBLIC ACCESS STUDY - BACKGROUND REPORT	1
1.2	STUDY CONTEXT	1
1.3	ENVIRONMENTAL CONTEXT	2
1.4	LAND USE CONTEXT	3
1.5	MANAGEMENT CONTEXT	4
1.6	STUDY ISSUES & OBJECTIVES	4
2	RECREATION CAPACITY	6
2.1	RECREATION CAPACITY CONTEXT	6
2.2	RECREATION CAPACITY MANAGEMENT PROGRAM	6
2.3	RECREATION CAPACITY OBJECTIVES	8
2.4	ENVIRONMENTAL PROTECTION & ENHANCEMENT	9
2.5	BOATING CAPACITY	16
3	PUBLIC ACCESS	24
3.1	PUBLIC ACCESS CONTEXT	24
3.2	PUBLIC ACCESS OBJECTIVES	24
3.3	MANAGING EXISTING PUBLIC ACCESS	25
3.4	PUBLIC ACCESS DEVELOPMENT	26
3.5	FUTURE PUBLIC ACCESS THROUGH SUBDIVISION	31
4	IMPLEMENTATION	35
4.1	THE SYLVAN LAKE MANAGEMENT PLAN COMMITTEE	35
4.2	ROLES & RESPONSIBILITIES OF OTHER MANAGERS	36
4.3	IMPLEMENTATION PRIORITIES & FINANCIAL IMPLICATIONS	38

1 BACKGROUND

1.1 SYLVAN LAKE PUBLIC ACCESS STUDY - BACKGROUND REPORT

Readers of this *Findings & Recommendations Report* should refer to the separate *Background Report* for all detailed information on the study process and the environmental, recreation, and management context which was developed for assessing recreation capacity and identifying improved public access at Sylvan Lake. The *Background Report* contains detailed information on the current state of the Lake including water quality, habitat concerns, land use, access challenges, and boat use estimates. All of the information presented in the report was developed through a review of the work generated during the *Sylvan Lake Management Plan: 2000 Update (SLMP)*, as well as other previous studies on Sylvan Lake, stakeholder interviews, field research and evaluation, and public consultation.

1.2 STUDY CONTEXT

The purpose of the Sylvan Lake Public Access Study is to provide the municipalities that surround the Lake with a comprehensive, lake-wide action plan for dealing with the demand for improved public access to Sylvan Lake. The study will build on the recommendations of the *SLMP* by addressing two primary objectives:

- Assessment of the Lake's overall capacity to support increased water-based recreation
- Identification of opportunities for improving public access to the lake

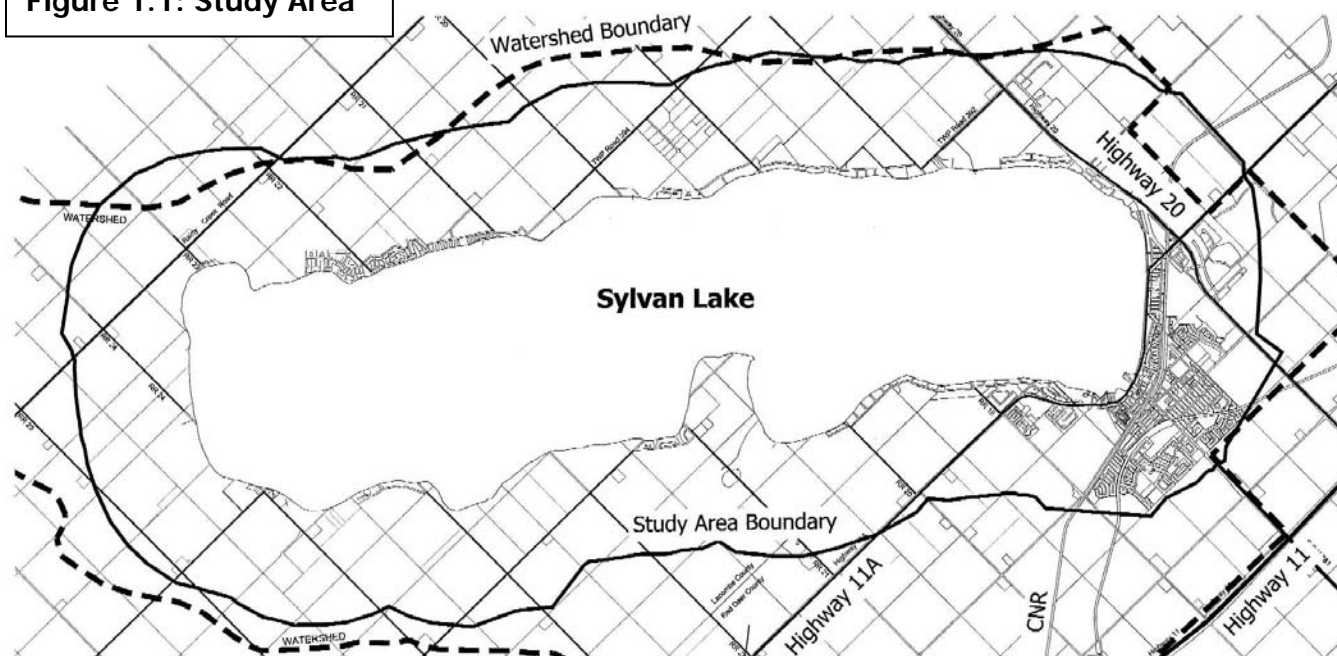
The Sylvan Lake Public Access Study has been completed by a consulting team led by Infrastructure Systems Ltd. (ISL) and has been managed by the **Sylvan Lake Management Plan Committee (SLMPC)**. The SLMPC is made up of elected representatives from the eight municipalities which surround the lake. Administrative staff from the municipalities provided technical support to the committee and the consultant team. The defined study area focused on a designated 1.6 km (1.0 mile) wide zone around the lake (Figure 1.1) with consideration of impacts related to the entire Sylvan Lake watershed.

A detailed outline of the study process, phases and tasks is provided in the *Background Report*. An important part of the study process was the involvement of stakeholders in providing background information on the lake environment and in evaluating issues and recommendations related to current and projected lake use, lake capacity and public access. Stakeholders included the municipalities within the study area, area ratepayers, provincial and federal agencies, and non-governmental organizations

(NGO's). The public consultation process included a number of specific events such as committee and community workshops, public open houses and a final public meeting. The consultation also included regular updates on the project which were circulated through local newspapers as well as posting of information on the ISL website. Detailed information on the public consultation process and results is provided in the *Background Report*.

1.3 ENVIRONMENTAL CONTEXT

Figure 1.1: Study Area



As defined in Section 2 of the *Background Report*, the overall objective for this portion of the project was to provide environmental overview of the Sylvan Lake area, and assess the capacity of the lake for further recreational use and development. Various sources of information were used to assess the vegetation, fish, and wildlife resources of the Sylvan Lake project area. Much information was obtained from reports and discussions with personnel from federal, provincial and municipal government departments and non-government conservation organizations. Aerial photography analysis was used to map existing habitats and sensitive areas, and to identify landscape characteristics that may be affected by increased levels of public recreation use. Reconnaissance level field site inspections were then used to verify the overall lake and site specific environmental analysis.

Some of the key environmental characteristics of the Sylvan Lake watershed include:

- The drainage basin surrounding Sylvan Lake is approximately 102 km², which is very small in comparison to the lake's size. Several intermittent streams and drainage channels flow into Sylvan Lake. The outlet does not have a control structure and outflow from the lake is intermittent (1 in 20 years)
- Sylvan Lake is a relatively large, moderately deep lake. Water levels of the lake fluctuate naturally over a range of about 1 m in response to precipitation, runoff, groundwater flow, and evaporation.
- The water quality of Sylvan Lake has been monitored most years since 1983 by Natural Resource Services of Alberta Environment. There is no indication that the water quality of Sylvan Lake has deteriorated in the last 20 years.
- Sylvan Lake currently supports 4 species of sport fish however the fish populations are in relatively poor condition. Lake whitefish is still an important winter fishery.
- The main identified soil related limitations for recreational uses in the area include high water tables and steep slopes. Access to the lakeshore is severely limited where escarpments border on parts of the Sylvan Lake because of steep and unstable slopes.
- Native terrestrial vegetation is limited within the Sylvan Lake watershed because of agriculture and residential development. This natural riparian and upland vegetation is extremely important for maintaining water quality and for fish and wildlife habitat. Much of the Sylvan Lake watershed has been cleared and the shoreline has been altered by development.
- Sylvan Lake is considered a regionally environmentally significant area in both the counties of Red Deer and Lacombe. A number of environmental characteristics of the lake contribute to this

Recommendations related to environmental protection and enhancement are provided in Section 2.4 of this report.

1.4 LAND USE CONTEXT

As defined in Section 3 of the *Background Report*, there are five categories of land use which define the shoreline of Sylvan Lake: Residential, Agricultural, Institutional, Public Lands, and Commercial. Some of the key land use characteristics of the Study Area include:

- Publicly owned lands provide lake access to only 15% of the shoreline.
- Five categories of publicly owned lands were identified: Shoreline municipal reserve & Environmental reserve; Municipal reserve / community facility / park; Road allowances; Provincial Parks; Protected Lands.
- Each category has distinct characteristics in terms of location, size, shape, use, and the quality of public access that is provided.
- Following an assessment of all public lands, it was determined that the majority of individual sites have typical characteristics that make them unsuitable for the development of new or formalized public access.
- A considerable portion of Sylvan Lake's shoreline is undeveloped, privately owned, agricultural land (32%)
- Future development of private lands for lakeshore residential subdivisions has the potential to provide land for additional public access (through dedication of municipal and environmental reserve - See Section 3.5).

- As with public lands, a considerable portion of the private lands have characteristics (eg. steep slopes, environmental sensitivity) that make them unsuitable for the development of formal public access.

Recommendations related to public access management and development are provided in Section 3.0 of this report.

1.5 MANAGEMENT CONTEXT

As defined in Section 4 of the *Background Report*, management issues for public access and lake use at Sylvan Lake are well documented and can be categorized related to bylaw and enforcement, public education, site development and operations. These management issues were clearly identified during the *SLMP* process as well as during the public consultation completed as part of this study. As has been identified by the public and stakeholders many times, the challenge from a management perspective is insufficient resources on the part of the various levels of government to properly manage the increasing use of developed and undeveloped public access locations and recreational activities on the lake. Beyond issues of available resources, another point of public concern is knowing which of the many levels of authority have jurisdiction over management issues such as boat use, shoreline modification and lakeshore development approvals. A summary of the numerous Acts, Regulations and Bylaws which govern public access and lake use at Sylvan Lake are provided in the *Background Report*.

The *SLMP* defines guidelines and policies designed to promote responsible land use and development around Sylvan Lake. The management recommendations of this study are designed to provide an action plan for managing the recreation capacity of, and public access to, Sylvan Lake. Recommendations related to the management of recreation capacity are defined in Section 2.2, and recommendations related to the management of public access are provided in Section 3.2 of this report.

1.6 STUDY ISSUES & OBJECTIVES

The following report contains the specific recommendations designed to facilitate the expressed purpose of the study, which is to provide the municipalities that surround the Lake with a comprehensive, lake-wide action plan for dealing with the demand for improved public access to Sylvan Lake. The recommendations of this study are supported by the background research,

evaluation, design and public consultation detailed in the *Background Report* as well as the specific findings related to recreation capacity and public access which are defined in this report.

As with the findings and policies of the *SLMP*, the work of this study involved consideration of many complex and competing issues and interests. In preparing the recommendations the overriding goal was to address the purpose of the study by finding an appropriate balance in a number of specific areas. Specifically, this balance must address:

- improved public access while protecting the integrity of the lake environment
- The quality of life for residents and the quality of experience for non-residents users
- The overall public interest and the protection of personal property rights
- the type, location and extent of public access to address the needs of different types of users (fishermen, powerboaters, water skiers, sailboats, canoes, children's camps, youth, young adults, seniors, groups, families).
- Intermunicipal and intergovernmental cooperation and individual municipal responsibility

Throughout this report a number of objectives related to recreation capacity and public access have been identified to address this balance. Some of the key objectives are provided below as a framework for considering all of the findings and recommendations of the Sylvan Lake Public Access Study.

- To manage the recreation capacity of the lake through a program of monitoring and management activities related to specific environmental, facility, physical, and social indicators (Section 2.2)
- To promote the safe and responsible watercraft operation on Sylvan Lake by all users through education and enforcement (Section 2.5)
- To address management issues of existing public access before developing additional public access (Section 3.3)
- To provide improved public access in all forms – boat launch, day use, beach, camping, trails (Sections 3.4 & 3.5)
- To define the cooperative and ongoing role of the Sylvan Lake Management Plan Committee as the intermunicipal managers and stewards of Sylvan Lake (Section 4.1)

2 RECREATION CAPACITY

2.1 RECREATION CAPACITY CONTEXT

As identified in the *Background Report*, the concept of recreation capacity has changed over the past 10 years. The elusive quest for a single number that would serve as a convenient limit on use has been unsuccessful, mostly because it does not address the diversity of potential factors and the dynamic nature of how people recreate on land and lakes. It is generally agreed that lake recreation capacity must consider a wide range of factors, criteria, impacts and management requirements. In an effort to address the diversity of potential factors a commonly utilized method for assessing recreation capacity is the Limits of Acceptable Change (LAC) process. LAC is a broad framework which involves the development of management objectives based on the identification and monitoring of a specific set of indicators as compared to set standards or limits (See Section 5.3 of the *Background Report*). It is this type of management program that has been proposed to manage recreation capacity of Sylvan Lake over the long term.

For the short term, it has been concluded that Sylvan Lake has not reached its capacity to support additional recreational use. This conclusion is based primarily on the fact that the water quality is high and has remained quite stable over the years. This does not mean however, that unmanaged growth and recreation use would not have impacts and potentially result in the degradation of the water quality. To ensure that recreation capacity is not exceeded in the long term, and that the municipalities can manage development, public access and recreation use around the lake in an environmentally sustainable manner, the following program for monitoring and managing recreation capacity indicators is being recommended.

2.2 RECREATION CAPACITY MANAGEMENT PROGRAM

A recreation capacity management program for Sylvan Lake is defined in Table 2.1. This program provides a comparison of current conditions and acceptable standards and more importantly, tools for monitoring and management actions to address a range of recreation capacity indicators. It also defines the jurisdiction or group, which should be responsible for the monitoring and management activities. It will be up to the SLMPC, in cooperation with government agencies and NGO's to undertake the recommended activities to ensure that the recreation capacity of Sylvan Lake is not exceeded over time.

Table 2.1 Capacity Monitoring & Management

CRITERIA	ISSUES	INDICATORS	EXISTING CONDITIONS	ACCEPTABLE STANDARDS	MONITORING	MANAGEMENT	RESPONSIBILITY
WATER QUALITY	Septic Fields, boats dumping sewage, fertilizer/pesticide runoff, boat motors - oil/gas	Chlorophyll-a (average)	2-7.5 ug/L	(Province proposing to develop lake specific standards)	Ongoing water quality studies using existing baseline data	Dumping Station, Boat Restrictions, Protect and Replace Shoreline vegetation, Inspect septic systems (repair/replace requirements & fines)	Alberta Environment
		Total Phosphorus (ave)	15-30 ug/L				Alberta Environment
		Clarity (average)	2.3-6.3 ug/L				Alberta Environment
WATER LEVELS	Water levels relatively constant. Reduction in water level affects net recreation area	Shoreline exposure	Fluctuate <1 m over a year	No net increase in fluctuation	Air Photos	Sylvan Creek only outlet. Discharges only following 1:20 storm event. No specific management opportunity	SLMPC assistance by Sylvan Lake Advisory Committee
FISH HABITAT	Sensitivity to lake activities, destruction of habitat, reduction in water quality	Northern Pike	Collapsed	(New population surveys needed)	Establish current baseline conditions monitor changes	No Wake zone, restricted, seasonal or zero recreation zones. Establish sustainable fishing limits.	Fisheries & Oceans Canada supported by Alberta Fish & Wildlife and NGO's
		Walleye	Collapsed				
		Yellow Perch	In Recovery				
		Lake Whitefish	Stable				
WATERFOWL HABITAT	Sensitivity to lake activities, destruction of habitat, reduction in water quality	Areal extent of emergent vegetation zone	1990 area	No net loss	Establish current baseline conditions monitor changes	Restricted, Seasonal or zero recreation zones. No wake zone. Expand shoreline protection zones.	Fisheries & Oceans Canada supported by Alberta Fish & Wildlife and NGO's
FOREST COVER	Forest cover acts as buffer strips to trap pollutants and prevent erosion. Provides important habitat and connectivity.	Changes in areal extent of forest cover in study area	16.4 % of Study Area	Preserve Forests	Air photo review. Review of development proposals, inspection of development for plan compliance	Designate percentage of clearing in new development, Designate wider ER (30 m). Require compensation planting to increase forest cover	Municipalities and SLMPC
WILDLIFE HABITAT	Reduction of habitat results in stress, habituation, and may affect population viability for sensitive wildlife species	Changes in areal extent, fragmentation, and connectivity of forest cover in areas adjacent to lake.	9.9% of Study Area; several large blocks with minimal disturbance present. Connectivity between habitat patches present.	Preserve Forests, connectivity and patch size maintained	Establish current baseline conditions with existing data and new surveys and monitor changes from baseline condition	Limit percentage of clearing, require compensation for critical habitat that is disturbed. Maintain/enhance connectivity between forest blocks.	Fish & Wildlife, Municipalities

Table 2.1 Capacity Monitoring & Management (continued)

CRITERIA	ISSUES	INDICATORS	EXISTING CONDITIONS	ACCEPTABLE STANDARDS	MONITORING	MANAGEMENT	RESPONSIBILITY
SHORELINE HABITAT	This zone subject to highest demand. ER areas tend to be treated as private and have been cleared and manicured	Changes in areal extent of emergent vegetation zone	1.0 Ha. of Existing Emergent Vegetation	No Net Loss	Air photo review. Summer lake tours and inventory	Educate public on value of shoreline, more protective notation zones, use of buoys/signage to mark areas of no water activity	Fisheries & Oceans Canada supported by Alberta Fish & Wildlife and NGO's
SENSITIVE AREAS	low lying areas, drainage courses,Natural Area have increased sensitivity	Drainage Course	5 total	No Net Loss	Periodic monitoring to ensure environmental sustainability of sites.	Signage, public education, more protected areas/buffer zones; increase size of Sylvan Lake Natural Area	
		Wetlands	3 Total	No Net Loss			
		Natural Area	16.5 Ha.	No Net Loss			
BOAT CAPACITY	As boat use numbers increase there is increased likelihood of conflicts, accidents and environmental impacts	Increase in reported incidents	Current Peak Use 300 Boats on the lake	Estimated Capacity 425 Boats on the lake	Boat use inventory and survey, ongoing monitoring	Education, enforcement of regulations, launch restrictions/bylaws, use of signage/buoys to mark areas of no boat activity	Coast Guard (DFO) and SLMPC
BOAT USE	Speed, mix of boat types, over crowding, concentrated use areas, encroachment on restricted areas	Increase in reported incidents (close calls) & complaints	10 Reported incidents and or complaints per year	No Net Increase	Boat use inventory and survey, ongoing monitoring	Education, enforcement of regulations, launch restrictions/bylaws, use of signage/buoys to mark areas of no boat activity	RCMP supported by SLMPC Special Constables; Coast Guard for boating Restrictions; Municipalities for bylaws
		Increase in boat use accidents	1 Boat Accidents per year	No Net Increase			
		Boat related Fatalities	1 every 4 years	No Net Increase			
NOISE	Stack boats are illegal, improper noise abatement measures on other boats, PWC's, parties	Complaints	(No existing data available)	No Net Increase	Sound data files during different times and days during season	Adopt and enforce a bylaw for launching of illegal water craft, enforcement by RCMP on water	RCMP supported by SLMPC Special Constables; Coast Guard for boating Restrictions; Municipalities for bylaws
LAUNCHING	Insufficient launch capacity, damage to informal launch locations	Overflow parking onto adjacent roads, complaints	Current Peak Launches -200 Boats/Day	Future Peak Launches - 300 Boats/Day	Visitor user surveys	Expansion of launch capacity, restrictions on types of boats	Private for Marina, Town to facilitate parking, Province for Sun Haven/Half Moon, DFO for Approvals

2.3 RECREATION CAPACITY OBJECTIVES

To meet the goal of ensuring the long term sustainability of the lake by monitoring and managing recreation capacity, the following broad objectives should be used as a guide for decision makers:

- To effectively monitor environmental conditions through the management of an up to date environmental information base for Sylvan Lake
- To reduce the impacts of development and recreational use on the water quality of Sylvan Lake through the management of inputs and the maintenance of shoreline buffers
- To promote the safe and responsible watercraft operation on Sylvan Lake by all users through education and enforcement.
- To continue the coordinated efforts of the municipalities (through the SLMPC) as managers of the long term recreation capacity of Sylvan Lake

2.4 ENVIRONMENTAL PROTECTION & ENHANCEMENT

2.4.1 Water Quality & Watershed Function

Water quality in this spring-fed lake continues to be quite high. In part, this is attributed to the small watershed, which reduces the potential for runoff from agricultural land to adversely affect lake water quality. In managing this valuable resource into the future however, it is important that water quality in the lake not be taken for granted. Sylvan Lake remains vulnerable to water quality changes associated with increased recreational use and with land-use changes within its watershed.

The lake watershed refers to the area of land that drains into the lake. Activities that occur in the watershed influence the quantity and quality of water that enters the lake and the overall health of the lake ecosystem. For example, runoff from agricultural land often serves as an important source of nutrients and bacteria. Lake waters may also be polluted by nutrients and bacteria leaching from septic systems into shallow aquifers. Runoff from urban areas can contribute significant quantities of nutrients, bacteria, pesticides, metals, oils and other contaminants to lakes. To maintain the health of the lake, it is important to manage non-point source pollution originating from the lake's watershed.

Land within the Sylvan Lake watershed has been extensively modified by agricultural, recreational and residential land uses. Currently, only 14% of the land in the watershed is

forested, while an additional 3.6% consists of natural wetlands or other non-forested habitats. Approximately 92% of the remaining forested habitat is located within 1.6 km of the lake, although these forested areas are heavily fragmented.

Natural vegetation, particularly riparian vegetation or upland vegetation adjacent to the shorelines of lakes is extremely important for maintaining water quality. Shoreline vegetation acts as a buffer, tying up nutrients and sediments before they enter the lake. It also stabilizes shorelines, reducing the effects of erosion and sedimentation resulting from wave action or ice-thrust. Riparian and shoreline vegetation is also vitally important to wildlife. Because so much of the Sylvan Lake watershed has been cleared and so much of the shoreline has been altered by development, conservation of remaining forested areas around the lake should be a high priority in planning future access and residential/commercial developments around the lake. Efforts should also be made to re-establish forested vegetation buffers around portions of the shoreline, where natural forest cover has been lost.

As well, efforts should be made to control water quality impacts directly associated with recreational use of the lake. Various studies have shown that operation of motorized watercraft can introduce a number of contaminants to lakes, including metals (lead, cadmium, mercury), nutrients (phosphorus, nitrates), and hydrocarbons (methane, gasoline, oils and greases). Two-stroke engines are particularly inefficient, discharging an estimated 25-30% of unburned fuel into the water column. Although the overall effects of outboard engine exhaust and fuel leakage on water quality and aquatic life are generally thought to be small due to the volume of lakes, some studies have demonstrated that concentrations of contaminants may accumulate in sediments in heavily used parts of lakes and around marinas.

Recommendations:

Measures to maintain water quality and watershed functions in the Sylvan Lake watershed should include:

- i. **Preserve Forest Cover** – municipalities should work with developers and private landowners to preserve the remaining forest cover and other natural habitats in the watershed. This would involve minimizing or avoiding development in areas of natural vegetation cover where possible and encouraging the restoration/re-establishment of natural vegetation cover (using native plant species) in areas which have been cleared.

- ii. **Natural Shoreline Buffer** – Encourage, through public education, the re-establishment of natural shoreline vegetative buffer in areas that are presently devoid of natural forest cover. Buffers should be comprised of native vegetation species and a minimum width of 30 m. Such efforts could result in the eventual establishment of a natural forested shoreline buffer around the entire lake, which would provide a number of important environmental benefits.
- iii. **Agricultural Practices** - promote conservation tillage practices on agricultural land in the watershed as a means of minimizing erosion and controlling the quality of runoff that enters the lake.
- iv. **Riparian Zone Management** - promote responsible riparian zone management through public education programs and enforcement of existing provincial regulations. Alberta has become a leader in research and management of riparian zones as a means of improving water quality and maintaining fish and wildlife habitat. Alberta Sustainable Resource Development (e.g., Riparian Health program), Fisheries and Oceans Canada (see http://www.dfo-mpo.gc.ca/habitat/publications_e.asp#Guidelines) and organizations such as the Alberta Conservation Association (e.g., Caring for Shoreline Properties), Land Stewardship Centre of Canada (see <http://www.landstewardship.org/>) are valuable sources of information on riparian zone management.
- v. **Fuel Handling** - Promote the use of better fuel storage and handling procedures by boaters and cottage owners and the benefits of adopting cleaner technology, including the use of four-stroke engines. This is a public education function that could be carried out through the use of appropriate signage, newsletters or distribution of pamphlets.

2.4.2 Terrestrial Vegetation and Wildlife

Native terrestrial vegetation is limited within the Sylvan Lake watershed and is mainly concentrated around the lakeshore. Aspen and balsam poplar stands are the dominant vegetation cover, with only small areas of other types (e.g., mixedwood and conifer stands, willow shrubland, wet meadows, and wetlands) present in the area. Many of the patch sizes of native vegetation associated with agriculture land within the Sylvan Lake watershed are small and have much edge. These patches likely provide limited habitat for birds and mammals, and the associated biological diversity is likely to be low, as may be productivity. Remaining forest stands adjacent to Sylvan Lake are characterized by larger patch sizes, core areas, and connectivity than the surrounding area. Overall, these stands provide habitat for a wide diversity of species. Larger and connected forest stands provide year-round cover and forage for larger ranging mammals such as deer and coyotes, as well as forest interior species of birds, and species sensitive to human related disturbance. These areas are of critical importance in maintaining biological diversity and ecological function in the study area. Continued habitat loss and fragmentation of these remaining contiguous blocks of forest will likely adversely affect

species composition and abundance of both plants and wildlife in the Sylvan Lake area. Habitat loss and fragmentation has been linked to habitat isolation, displacement of species, reduced dispersal of genetic material, and the general decline of local and regional populations of wildlife. The long-term effect is a loss in species diversity.

Remaining forested patches around the lake are highly sought after for residential or acreage development. However, continued loss/alteration of remaining fragments of habitat in the Sylvan Lake area may, over time, produce habitat patches too small and isolated to permanently sustain populations of some wildlife species currently present, particularly large mammalian species and other sensitive wildlife species. Dispersal among local and regional populations may be adversely affected, thus affecting the long-term persistence of populations. Increased human developments and activity in the area may also reduce the suitability of remaining natural habitats for wildlife species sensitive to human disturbance (e.g., northern goshawk, bald eagle). With reduction in vegetation cover and wildlife, nature-based recreational opportunities, as well as shoreline aesthetics are reduced.

Recommendations:

Measures that could be taken to reduce the adverse effects of increased access and recreational use on vegetation and wildlife resources of Sylvan Lake include:

- i. **Preserve Forests** – Encourage future development to preserve all remaining large forest blocks surrounding the lake in their current state, particularly areas that have been identified as critical habitat for wildlife or as being environmentally sensitive.
- ii. **Develop on Cleared Land** - Encourage future development to occur on lands that have already been cleared, incorporating requirements for reestablishment of treed shoreline buffers as part of each development.
- iii. **Natural Shoreline Buffer** – Encourage, through public education, the re-establishment of natural shoreline vegetative buffer in areas that are presently devoid of natural forest cover. Buffers should be comprised of native vegetation species and a minimum width of 30 m. Such efforts could result in the eventual establishment of a natural forested shoreline buffer around the entire lake, which would provide a number of important environmental benefits.
- iv. **Buffer Drainage Courses** – All drainage courses associated with the lake should be buffered from future development. It is recommended that a minimum 6m ER or ER easement be required on either side of all drainage courses. The buffer should include all vegetated or un-vegetated slopes and a minimum 3m setback from the top of bank.

- v. **Protect Key Habitat** - disturbance within nesting areas for raptors may result in nest site abandonment, or possible lake abandonment. Raptor nesting areas, particularly of species which rely on the lake environment (e.g., osprey and bald eagle) should be identified and avoided as sites for increased public access and recreation activity or the appropriate set back distance, determined through environmental assessment, should be implemented.
- vi. **Protect Habitat Connectivity** - Connectivity between habitat patches around the lakeshore should be maintained and enhanced to ensure the ecological viability of remaining habitat. It is recommended that all proposed subdivision development plans include an environmental overview/assessment which defines measures to protect habitat connectivity within and through the development parcel.
- vii. **Protect Uncommon Habitat** - uncommon habitats (e.g., mixedwood and conifer forest) should be avoided as sites for increased public access, as well as other developments. These areas, although limited in extent, provide habitat for a variety of plant and wildlife species unlikely to be found elsewhere around the lake. It is recommended that all proposed subdivision development plans include an environmental overview/assessment which defines measures to protect uncommon habitat within the development parcel.

2.4.3 Fisheries and Aquatic Wildlife

From a fisheries and aquatic wildlife standpoint, the most important requirement in lake management is to protect the shallow, near-shore (littoral) habitat areas. These are the areas in which much of the biological productivity in large waterbodies is concentrated. Littoral zones contain all of the emergent plant communities, which are limited by water depth, and most of the submerged aquatic communities, which are limited by light penetration. Together these aquatic vegetation communities provide nesting and foraging habitat for water birds and other aquatic wildlife as well as spawning, rearing and foraging habitat for fish.

Clearing of shoreline vegetation by cottage owners to establish piers, boat launches or private beach areas, results in direct removal of emergent or submerged aquatic vegetation, and can contribute to increased erosion and sedimentation. This reduces both the quantity and quality of habitat for fish and wildlife. The federal *Fisheries Act* provides for the protection of fish habitat. Under the *Fisheries Act*, no one may carry out any work or undertaking that results in the harmful alteration, disruption or destruction ("HADD") of fish habitat, unless this HADD has been authorized by Fisheries and Oceans Canada (DFO). At Sylvan Lake approvals are reviewed and administered by the Fish Habitat Management division of the Central and Arctic Region of DFO. In some instances, docks or launches may also require approval of the Canadian Coast Guard if there are potential navigation constraints.

Research has shown that increased boat traffic in near-shore areas can also adversely affect fish and wildlife habitat. When operated in shallow water, boat propellers can chop off plant shoots or uproot entire plants. Aquatic macrophytes can also be indirectly affected by wave damage or by increased turbidity resulting from propeller turbulence or the wake produced by boat hulls. In relation to the total biomass of macrophytes in the lake, the overall impact of motorized watercraft on macrophytes is likely to be extremely small. However, effects on key spawning areas can be significant, particularly given the limited distribution of these spawning areas and the fact that macrophyte distribution in Sylvan Lake has been reduced from historical levels by shoreline development.

Repeated disturbance of nesting water birds could adversely affect reproductive success by reducing foraging time or exposing nests to increased risk of predation. Disturbance can be associated with encroachment by both motorized and non-motorized watercraft into nesting areas. Although research related to the effects of personal watercraft (e.g., jet skis or seadoos) on wildlife are limited, one study reported greater sensitivity by a colony of common terns to personal watercraft than to motorboats. Because, personal watercraft make more noise (between 85 – 105 decibels/unit) than other boats, the excessive noise often disturbs nesting birds. Another possible concern related to personal watercraft is the much shallow depths at which they can be operated, potentially bringing them into contact with water bird nesting areas. During the spring and fall migration periods, large lakes, such as Sylvan Lake, provide important resting and foraging areas for waterfowl and other migratory waterbird species. The increased energy costs associated with repeated disturbance or harassment of flocks of migrating birds by motor boats and personal watercraft could be detrimental to these species.

Recommendations:

Measures that could be taken to reduce the adverse effects of increased access and recreational use on the fish and wildlife resources of Sylvan Lake include:

- i. **Protect Key Habitat** - known spawning and rearing habitats for fish and nesting and brood-rearing habitats for waterbirds should be avoided when planning future public access facilities.
- ii. **Require Communal Docks** – The use of joint access and docking facilities by lakeshore property owners, rather than individual piers and access points, will provide lake access to residents with much less impact to littoral zones than currently occurs with multiple

access points. It is recommended that development plans include provision for communal access to the shoreline and a communal dock via MR/ER.

- iii. **Establish 'No-Wake' Zone** - Establishment of defined 'no-wake' boating restrictions governing the use of boats and personal watercraft in littoral zones of the lake is an important long term management strategy. The existing 10/30 federal regulation (10km within 30m or shore) does provide some protection to littoral zones, however, it is suggested that littoral zones be identified as those shoreline areas that are less than 3 m in depth¹. The width of the littoral zone varies from approximately 100 m to at least 500 m in various parts of the lake. It is recommended that a map of all sensitive littoral zone areas be developed that can be distributed as an educational tool to all residents and to users launching boats. Permanent marking of these areas may be necessary as a long term management approach and would require application and implementation of a formal Boating Restriction Regulation (See *Background Report*).
- iv. **Establish 'No-Motor Zones** - Studies conducted in the U.S. have indicated that no-motor zones are more effective at preventing disturbance of submerged plants than no-wake zones. In the future, particularly environmentally sensitive zones and shallow areas such as the west end of Sylvan Lake could be protected further by establishing a no-motor zone that would be marked by buoys as part of a formal boat use restriction. In the short term, It is recommended that a map of all sensitive zones and shallow areas be developed (combined with above 'no-wake' map) that can be distributed as an educational tool to all residents and to users launching boats.
- v. **Waterbird Sensitivity** – There needs to be increased awareness of the sensitivity of waterbirds to human disturbance. This includes the need to minimize intrusion into known nesting areas during the breeding period and to avoid unnecessary disturbance to migrating waterfowl during spring and fall. As with the previous two recommendations this is best achieved through education in the form of maps, signage at lake access points, notices in local newsletters and newspapers or by distributing pamphlets.

¹ Three meters is close to the maximum rooting zone for aquatic macrophytes and also represents the depth beyond which little impact of motorized watercraft has been demonstrated (Asplund 2000).

2.5 BOATING CAPACITY

2.5.1 Boat Launching

The *SLMP* identified the development of a new public boat launch on Sylvan Lake as a high priority. In an effort to estimate the extent of current and future boat launching requirements, a formula specific to this study was developed to define the characteristics of peak boat use and boat launching. It is important to note that **the boat capacity calculation has not been provided as a measure of the overall recreation capacity of Sylvan Lake**, simply as a means to estimate future boat launch requirements. It is the monitoring and management of boat use over the long term which will determine the actual boat capacity in terms of total numbers of boats as well as specific types or classes of boats.

An explanation of the formula and the specific calculations used to determine boating capacity for this study are provided in Section 5.4 of the *Background Report*. Some of the key estimates of current and future boating during peak periods are provided in Table 2.2:

Table 2.2: Boat Capacity Estimates

Peak Boats in use on the lake:	Current 300	Future 425
Total Boats Moored on the Lake:	Current 1200	Future 1660
Total Boats Launched on Peak Days	Current 200	Future 300
Total Truck/Trailer Stalls:	Current 75	Future 150

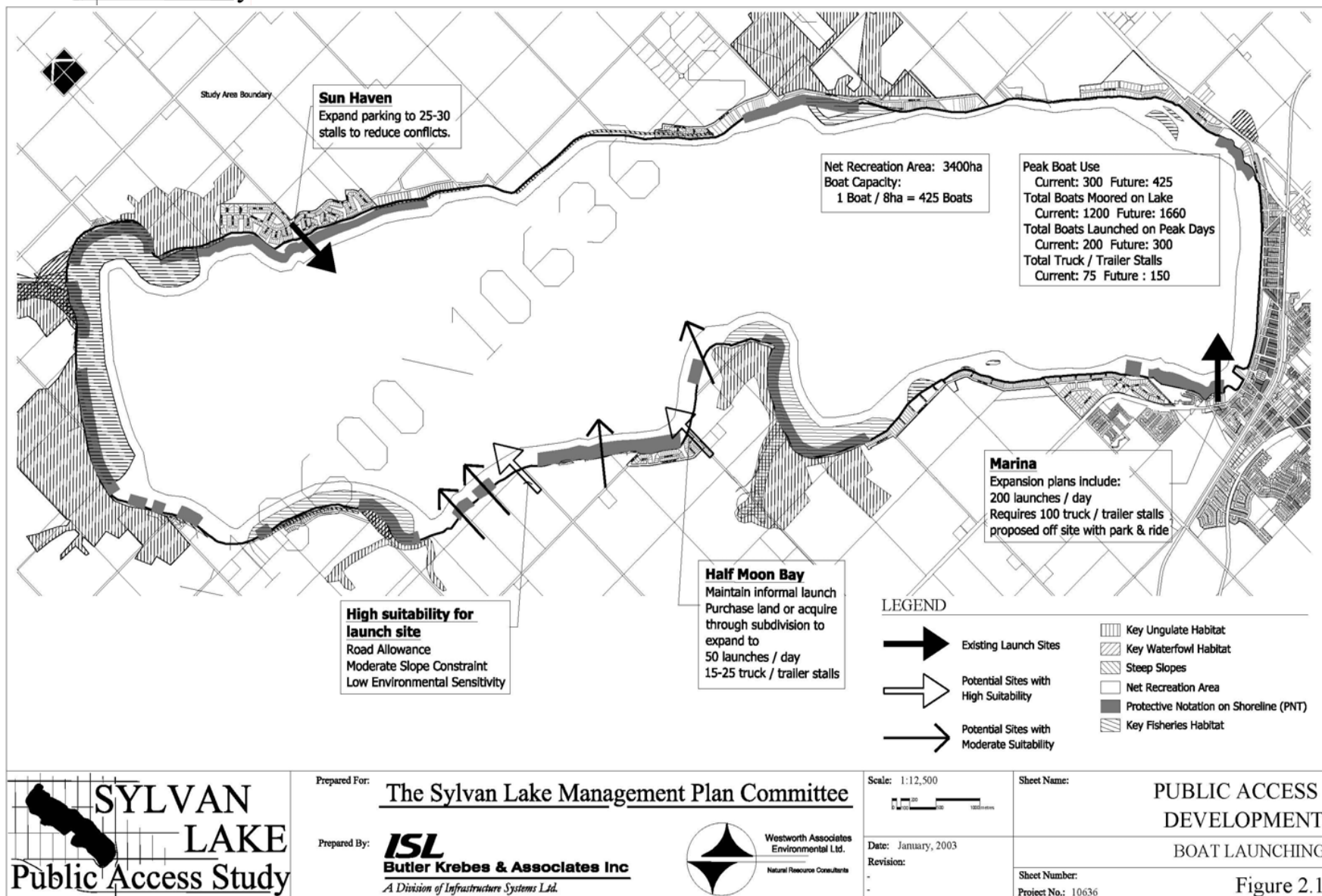
If the current launches on peak days are estimated at 200/day and the future launches are estimated at 300/day, that equates to 100 additional launches per day. Literature suggests that boat launch parking turns over twice per day (ie. morning fishing and afternoon water skiing), so to meet the estimated launching requirements in the future, an additional 50 truck/trailer stalls would be required. However, in addition to increased capacity to support future launching estimates, additional truck/trailer stalls are required in the short term to meet existing demand and resolve some of the existing problems associated with boat launching at road allowances and other public access sites. Currently there are only about 75 truck/trailer stalls to support 200 launches and as such an additional 25 stalls are required just to meet current demand.

To meet the overall estimated launching requirements now and in the future, it is recommended that an additional 75 truck/trailer stalls (150 total) plus associated boat launch amenities, be developed around the lake. As defined in the recommendations to follow, this requirement could be addressed through some combination of existing, expanded or new development at the following sites: **Marina 85-100 stalls, Sun Haven 25-30 stalls, Half Moon 15-25 stalls, Future launch site (private lands) 15-25 stalls.** The proposed boat launch plan is illustrated on Figure 2.1.

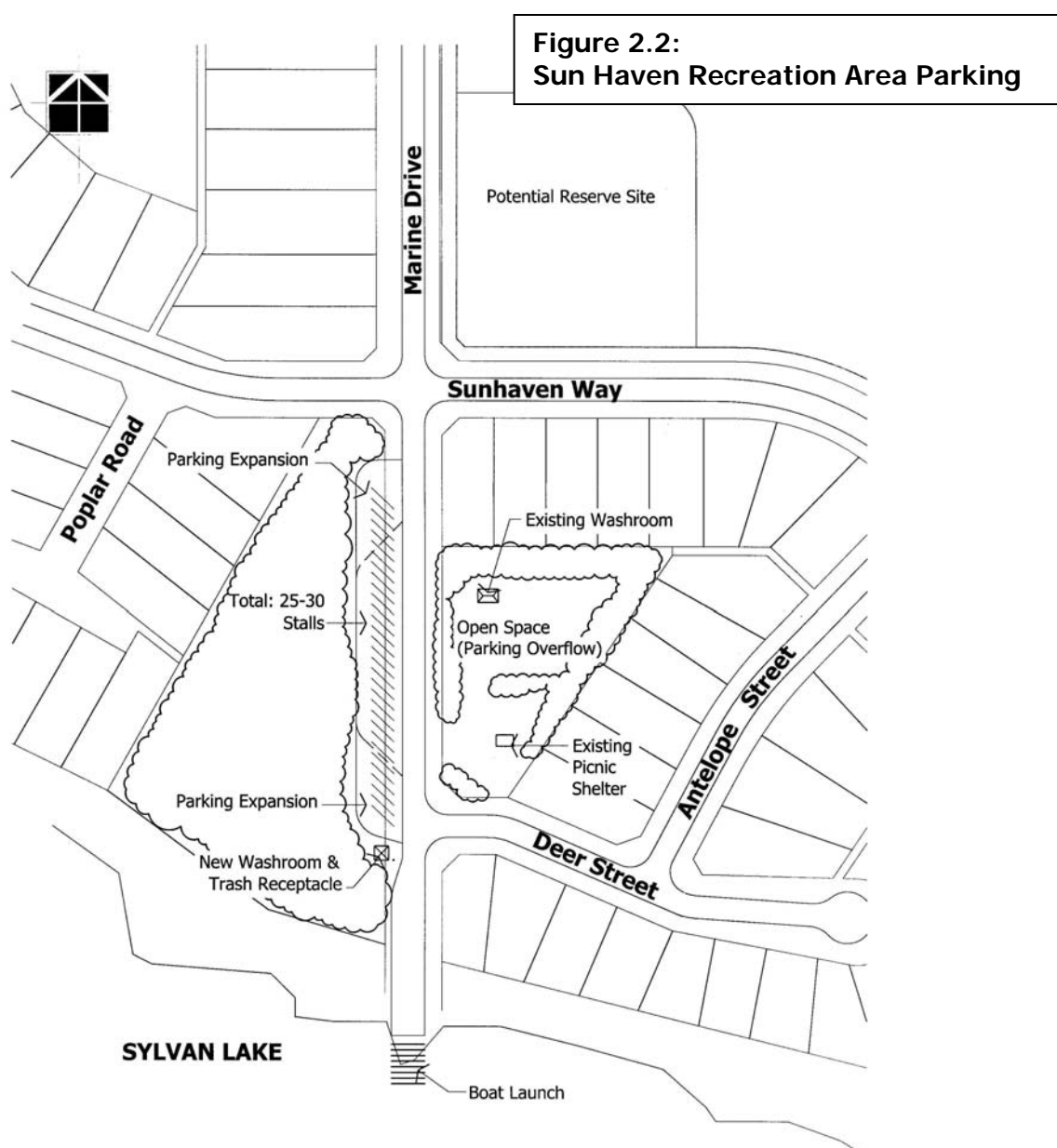
The following recommendations are designed to address the need for increased boat launch capacity at Sylvan Lake in the short and long term. It is important to note that one of the key recommendations of this report is that management issues related to existing public access must be addressed before additional public access is developed (See Section 3.3).

Recommendations:

- i. **Sylvan Lake Marina** – the current Marina operator has prepared plans for expansion of the existing facility including an increase in launch capacity to 200 boats/day. These plans have been reviewed by the Town and by different provincial departments however no application for formal approvals has been submitted. It is recommended that the expansion of the launch capacity be supported provided that the design meets with federal, provincial and municipal approvals with input from the SLMPC and the public. Based on the current design, approval of the plan will also require that an agreement can be reached with the Town for a park and ride site and program. It is recommended that the Town partner with the Marina operator to provide at least **100 truck/trailer stalls**. In addition, it is recommended that the design for the site include the development of a proper sewage dumping facility which could be accessible by all lake users. A protective notation (Fish Habitat) exists in front of the marina site and so development of the marina expansion will require review and approval by Alberta Environment as well as DFO and the Town.



- ii. **Sun Haven Recreation Area** – it is recommended that the Province provide additional parking and amenities to address residential/recreational user conflicts at this site. The additional parking could be provided by extending the existing parking lot (along Marine Drive) in both directions to facilitate a total of **25-30 truck/trailer stalls** (Figure 2.2). In addition, a washroom near the launch area, a few picnic tables and additional garbage cans should be provided. Land for additional parking and/or day use could also be provided through future subdivision development (MR) directly north of the Summer Village boundary on RR22. It is also recommended that the Province double its current contract for management and policing of the site to reduce residential/recreational user conflicts. See Section 4.3 for an outline of development costs.



- iii. **Half Moon Bay** – it is recommended that the Half Moon Bay Road Allowance be maintained as an informal boat launch site at least until Marina expansion or other boat launch development is completed. If this site is to remain as a boat launch in the long term, a formal parking area and day use should be developed with a minimum of **15-25 truck/trailer stalls**. There are several private parcels adjacent to RR21 which could provide a suitable location for development if land could be acquired through purchase or subdivision. A concept of how this could be developed is illustrated in Figure 2.3. Construction and management of this facility could be achieved through a partnership between Red Deer County and Lacombe County with funding support by the Province. The subdivision developer could be asked to make a contribution related to proving public access for future residents of the subdivision. See Section 4.3 for an outline of development costs.

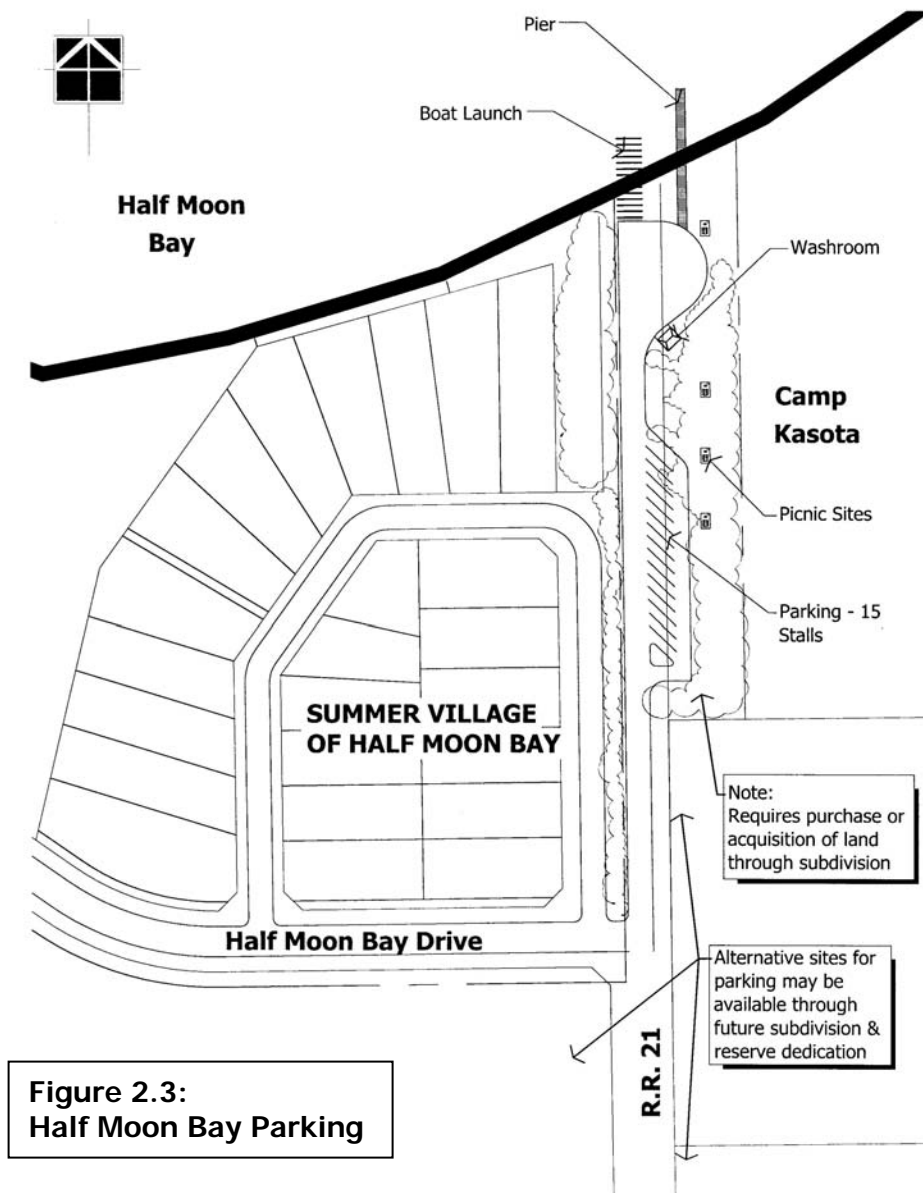


Figure 2.3:
Half Moon Bay Parking

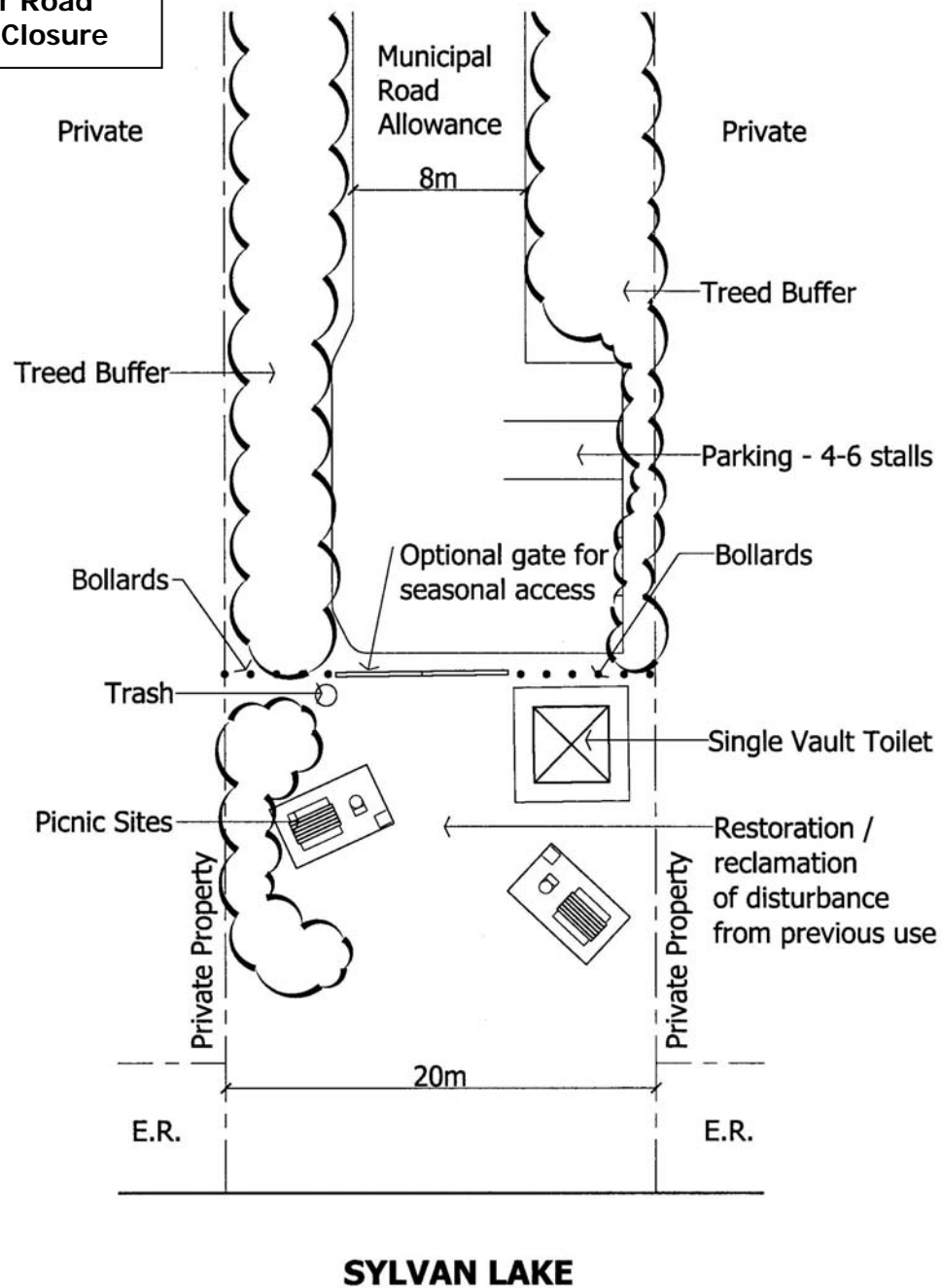
- iv. **Private Lands** – Using available background information and lake side reconnaissance, private lands around the lake were evaluated for public access suitability (Section 6.5, *Background Report*). Part of this evaluation was identification of lands suitable to support boat launching based on criteria related to shoreline sensitivity and protection of key habitat, physical access to the site (municipal road) and water (steep slopes), and impacts on existing residents. From this evaluation, one private parcel location was identified as having high suitability and four private parcel locations were identified as having moderate suitability for boat launch development (Figure 2.1). Development on these lands is contingent on future subdivision development of the parcel or the purchase of land by the municipality or the Province. An additional launch site may not be required if the Marina, Sun Haven and Half Moon Bay were expanded as defined previously. In Section 3.5 of this report, recommendations have been made as to how municipalities can optimize the provision of municipal reserve lands resulting from subdivision in order to provide future public access.
- v. **Closure of Sites** – it is recommended that the road allowances identified in Table 2.3 be closed² permanently or seasonally to restrict boat launching (ie. restrict vehicle access to the water). Sites shown for permanent closure are those where access is difficult and the current, forced access is causing damage to the site. Seasonal access is proposed in locations where existing summer access may have environmental impacts but where winter access would be suitable. If a municipality chooses to close a road allowance, they should be responsible for the costs. In the interests of public access, some of these sites could be converted to small day use sites with appropriate amenities as illustrated conceptually in Figure 2.4. Some of the road allowances could be restored to native forest because they are not suitable for public access (steep slopes) or because similar day use access is provided or proposed on a nearby site. It is important to note that the timing of closures should follow the development of additional boat launch capacity at the above noted locations. See Section 4.3 for an outline of development costs. It should also be noted that there are numerous other road allowance sites that are currently undeveloped and have typically not been used for lake access due to constraints such as steep slopes.

Table 2.3 Proposed Road Allowance Closures

PERMANENT CLOSURE	PROPOSED DEVELOPMENT
RR14 off TWP 392, SV of Birchcliff	Add Day Use Amenities
TWP 394, Yuill Subdivision, Lacombe County	Restore to Native Forest due to steep slopes
RR20, SV Norglenwold	Restore to native forest if day use site provided on nearby MR (Section 3.4.3)
Sylvan Lane, SV of Norglenwold	Add Day Use Amenities
SEASONAL CLOSURE	
RR23, Dickie Subdivision, Lacombe County	Add Day Use Amenities
RR23, Kuusamo Krest, Lacombe County	Proposed as part of larger day use site (Section 3.4.2)

² The procedure to close a road allowance is defined in section 22 of the MGA. Specifically, a municipality must prepare a closure bylaw, advertise that bylaw pursuant to the requirements of Section 606 and ask for approval of the Minister of Transportation before second reading, as well as providing an opportunity to the public to make representations to Council before the road is closed.

Figure 2.4:
Concept for Road
Allowance Closure



2.5.2 Boating & Water Sports

Problems arising from inappropriate watercraft operation reduces the quality of the lake experience for both resident and non-resident users. Current concerns regarding recreation capacity are focused on boating and personal watercraft use during peak periods on summer weekends and holidays. Growing personal watercraft use and the problems associated with it were identified numerous times during the public input process as an activity that should be restricted. A detailed inventory and assessment of current watercraft use on Sylvan Lake has not been completed and as such no specific boating restrictions are being recommended at this time. However, as defined in the recreation capacity management program (Table 2.1) boating related complaints, incidents, and accidents can be monitored and can be used as the foundation for applying for a boat launching or boat use restriction in the future (See Recommendations below).

Among the many issues and concerns related to boat use, one of the key challenges to improving boat use is having enough enforcement to be able to effect changes in user behavior. There are already numerous Federal boating restriction regulations (See 4.2.2, *Background Report*) in place, but insufficient resources to enforce them. Education also plays a key role in changing user behavior for boats, personal watercraft and water sports participants over time. Recreation capacity can be affected positively or negatively by changes in use patterns.

As part of the *SLMP*, a number of policy directions designed to ensure the safe use and enjoyment of the water were proposed. These policies, as redefined below, are still valid and require implementation (Section 4.0) in order to bring about changes to boating use at Sylvan Lake. Since a comprehensive boat inventory and boat use evaluation has not been completed, no specific boating restrictions are being proposed as part of this plan

Recommendations:

- i. **Education** - use the programs available through the Coast Guard (Office of Boating Safety) to provide prevention-based programs in the community. These programs may include in classroom kids sessions, having users of the launch fill out a boat safety check list, offering weekend proof of competency certification. It is recommended that a map be produced illustrating areas of key habitat that are to be no-wake or no-motor areas as part of an education program for residents and non-resident users launching boats.
- ii. **Enforcement (on water)** – improved enforcement of existing Boating Restriction Regulations will require an increased RCMP presence on the water. The primary limitation is the current resources of the RCMP to have two officers in a boat at one time. Support

in this regard can be provided by the use of the SLMPC (municipalities) Special Constables to assist the RCMP (See Implementation, Section 4.1).

- iii. **Enforcement (on land)** – municipalities may propose and adopt bylaws which restrict the launching of certain types of boats from municipally-owned lands.
- iv. **Regulations** – As defined in the *Background Report* there are a number of existing Federal boating restrictions and numerous lakes in Canada have specific boating restrictions which have been implemented through the Coast Guard. Any community or group can apply to implement a boating restriction. Some of the restrictions proposed during the public consultation process included limitations on hours of use, designate specific areas of lake for different boating/recreation uses, designate speed limits/zones, boat horsepower, banning of PWC's. No specific boating restrictions are being recommended as part of this study, however, restrictions may be needed in the future and the types of restrictions should be determined through a community consultation process and have the support of the municipalities through the SLMPC.

3 PUBLIC ACCESS

3.1 PUBLIC ACCESS CONTEXT

The need for improved public access to Sylvan Lake was a consistent message throughout the *SLMP* process as both resident and non-resident users discussed conflicts, issues and constraints related to existing public access provisions while at the same time identifying the importance of protecting the lake resource. As probably the most popular provincial recreation lake, demands for improved public access to Sylvan Lake are going to continue to increase as the population of the Province, the region, the Town and the municipalities around the lake grows. To meet this need, while at the same time balancing the capacity of the lake to support increased use, new and expanded public access opportunities need to be identified and developed.

At Sylvan Lake, public access takes many forms (boat launching, beach use, camping, etc.) and each provides an important contribution to meeting overall public access needs. As identified throughout the study process, a majority of existing public access sites already function near capacity during peak summer weekends. As a result, many informal and undeveloped public access sites are used despite a lack of amenities and management resources. This unregulated use results in residential/recreational user conflicts and degradation of public (and sometimes private) property. As indicated in the *Background Report* (Section 3.2), the majority of existing publicly owned lands which provide lake access are not suitable for the development of additional or more formalized public access. Therefore, to meet future demands for public access will require a plan that combines the expansion of existing sites, the formalizing of some currently undeveloped sites and the acquisition and development of some new sites. This section provides recommendations for each form of development as well as overall objectives for public access and recommendations for management of public access.

3.2 PUBLIC ACCESS OBJECTIVES

As identified previously, challenges to providing improved public access relate to use conflicts on existing sites, a shortage of management resources, and a lack of available public lands with suitability for expanded use. To meet the goal of providing improved public access to Sylvan Lake, and as a framework for the implementation of the detailed recommendations, the following objectives should be used as a guide for decision makers:

- To address issues related to management of existing public access prior to the development of any new public access (See Section 3.3)
- To provide a balance of public access in the form of day use areas around the lake to enable the public to enjoy convenient and suitable access to the lake (See Section 3.4)
- To provide additional boat launch capacity, facilities and amenities to meet short and long term needs (See Section 2.3)
- To ensure that all future subdivision development on the lake and in backshore areas contributes positively to public access to the lake through the provision of land and direct capital contributions (See Section 3.5).

3.3 MANAGING EXISTING PUBLIC ACCESS

One of the key messages from the public during the study process was that management issues at existing public access sites needed to be addressed before any new public access was developed. Currently, the management of public access rests with the RCMP, the Province (Conservation Officer, Operational contracts) and the municipalities (Special Constables, Public Works). In some locations, adjacent residents and property owners assist with management by removing trash and providing general clean up.

In addition to maintenance and operational issues, many of the existing public lands have little capacity to support the type and level of use that they are receiving. Some sites are being damaged and the resources degraded. Many of these issues could be addressed by changing the use patterns (eg. restrict vehicle access to the lake at certain locations) and by improving the level and maintenance of amenities, particularly washrooms and trash receptacles. The following recommendations are designed to improve the management of existing public access sites on Sylvan Lake.

Recommendations:

- i. **Management Priority** - recommendations related to management of existing sites should be implemented prior to the development of new public access sites
- ii. **Management Program** – it is recommended that a cooperative management program be developed and implemented by the SLMPC on behalf of the municipalities for the management of all municipal public access sites. The program should define the scope and frequency of management activities (policing, signage, garbage, washroom, mowing, repairs etc.) to ensure a consistent level of management of all sites. The management could be contracted out either through one of the municipalities or to a private contractor and paid for on an equal share basis proportionate to the number and size of sites. An adopt-a-park style program could be used to offset costs.
- iii. **Site Closure** – as defined and illustrated in Section 2.5.1(v) some existing road allowance sites that are being used as informal boat launch sites should be permanently

or seasonally closed (ie. restrict vehicle access to the water) and redeveloped as small day use areas or be restored as native forest. Closure of sites should be the responsibility of the affected municipality.

- iv. **Amenities** – as part of the closure of sites to vehicles, it is recommended that all sites be upgraded with additional or improved amenities including: a single vault toilet, trash receptacle, picnic tables and signage. A consistent program of signage which identifies the site and defines hours and restrictions on use should be implemented by the SLMPC. It is recommended that municipalities or the SLMPC approach the Province for partnering or grants for these upgrades (See Section 4.3).

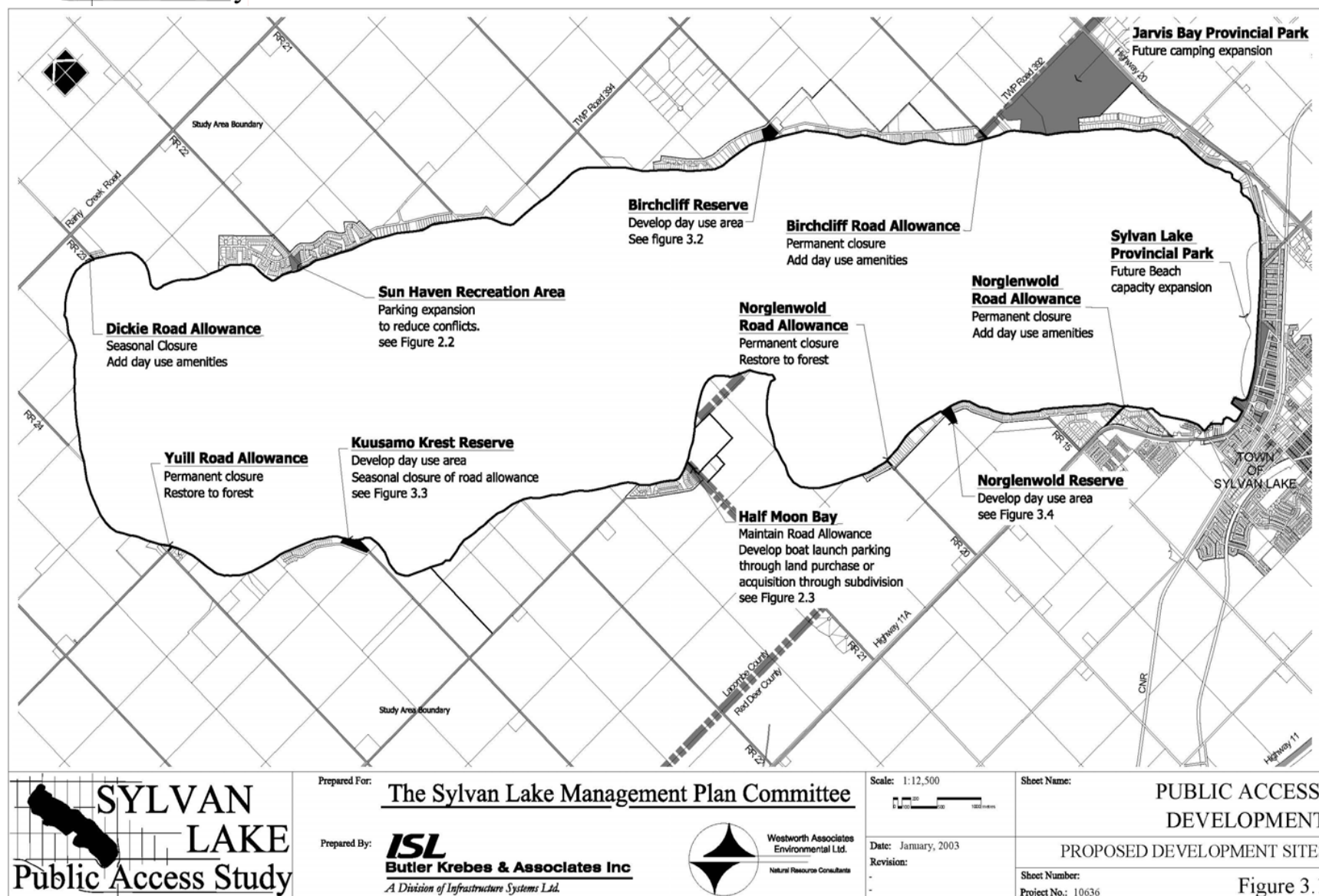
3.4 PUBLIC ACCESS DEVELOPMENT

In an effort to provide improved public access to Sylvan Lake, one of the objectives or approaches developed through this study was to provide a balance of public access around the entire lake to enable the public to enjoy convenient and suitable access to the lake. As identified in the Background report, there are very few available public lands sites that have suitability for expanded public access development. In fact, only three new development sites were identified, and these were for day use only. The following recommendations identify the locations and forms of expanded public access in each of the recreation use categories. The location of the recommended public access development and expansion is illustrated on Figure 3.1.

Recommendations:

- i. **Day Use** – in addition to the development of small day use sites resulting from road allowance closures, it is recommended that family oriented day use sites be developed in the SV of Birchcliff, SV of Norglenwold, and along RR23 at Kuusamo Krest in Lacombe County. These new day use sites will provide an alternative to the Provincial Park and provide convenient access to County residents. The successful implementation of these sites will be contingent on a strong and consistent management program being developed and implemented for all public access sites around the lake. Development concepts for each location are provided in Sections 3.4.1 - 3.4.3. The development of each site will require the approval of the particular municipality. Since the sites are designed to contribute to overall public access, it is recommended that the development be sponsored by the SLMPC and paid for through direct Provincial funding, through grants or through the collection of public access levies (See Sections 3.5 and 4.3). Additional day use sites may be developed as private lands are subdivided (MR).
- ii. **Boat Launch** – see recommendations in Section 2.5.1.

- iii. **Camping** – Parks & Protected Areas has no plans for campground expansion in Jarvis Bay Provincial Park. Since the campground runs at approximately 90% capacity on weekends throughout the summer there is indication that additional capacity will be needed. A few small private campgrounds in and near the Town provide an additional 300 sites. There is land available on the east side of the Provincial Park adjacent to Hwy. 20 for campground expansion. If a potential private operator expresses interest in developing a campground it is recommended that they be directed to the Province or the Town.
- iv. **Winter use** – it is recommended that winter lake access be provided at Sun Haven, Half Moon, Dickie and Kuusamo Krest. Other road allowance access would be closed as defined in section 2.5.1. The management of winter access should be provided by the municipalities through the SLMPC.
- v. **Beach** – it is the responsibility of the Province to develop and manage the Sylvan Lake Provincial Park to meet the current and future needs of visitors. To better serve the peak demand it is recommended that the Province plan for the long term expansion of the beach area and the upgrading of Park amenities. A number of expansion opportunities should be considered: drop off zones and off site parking, public boat docks for day use, lighting for winter skating/skiing, extension of the retaining wall and clearing of some native vegetation at the north end for expanding the beach area. It is recommended that the SLMPC include the Province (Parks & Protected Areas) during the implementation process. The Town is also currently evaluating opportunities for partial closure of Lakeshore Drive and the implementation of a park and ride program to address parking and traffic issues related to the Park.
- vi. **Trails** – The development of trails around Sylvan Lake was proposed by the public during both the *SLMP* and this study. A continuous lake edge trail is not feasible due to the steep slopes in many locations, existing private development along the shore and the discontinuity of public lands (MR/ER). In addition, this study does not support the development of formalized lake edge trails through environmental reserves due to the potential long term degradation of the shoreline. However, it is recommended that commonly used pedestrian and bike routes along roads and through existing reserves be formalized through a program of signage and/or dedicated and separated trails (ie. separate from the road). A Trails Master Plan would be required to identify and evaluate suitable routes. In addition, it is recommended that the provision of internal trails and trail links to existing trails or trail routes be a condition of subdivision development and be planned and paid for by the developer (See Section 3.5).



3.4.1 Birchcliff Reserve

It is recommended that the Birchcliff (EOS) reserve be developed as a family oriented day use site with a small parking area, washrooms, picnic sites, loop trail, and a boardwalk leading to a viewing platform as illustrated on Figure 3.2.

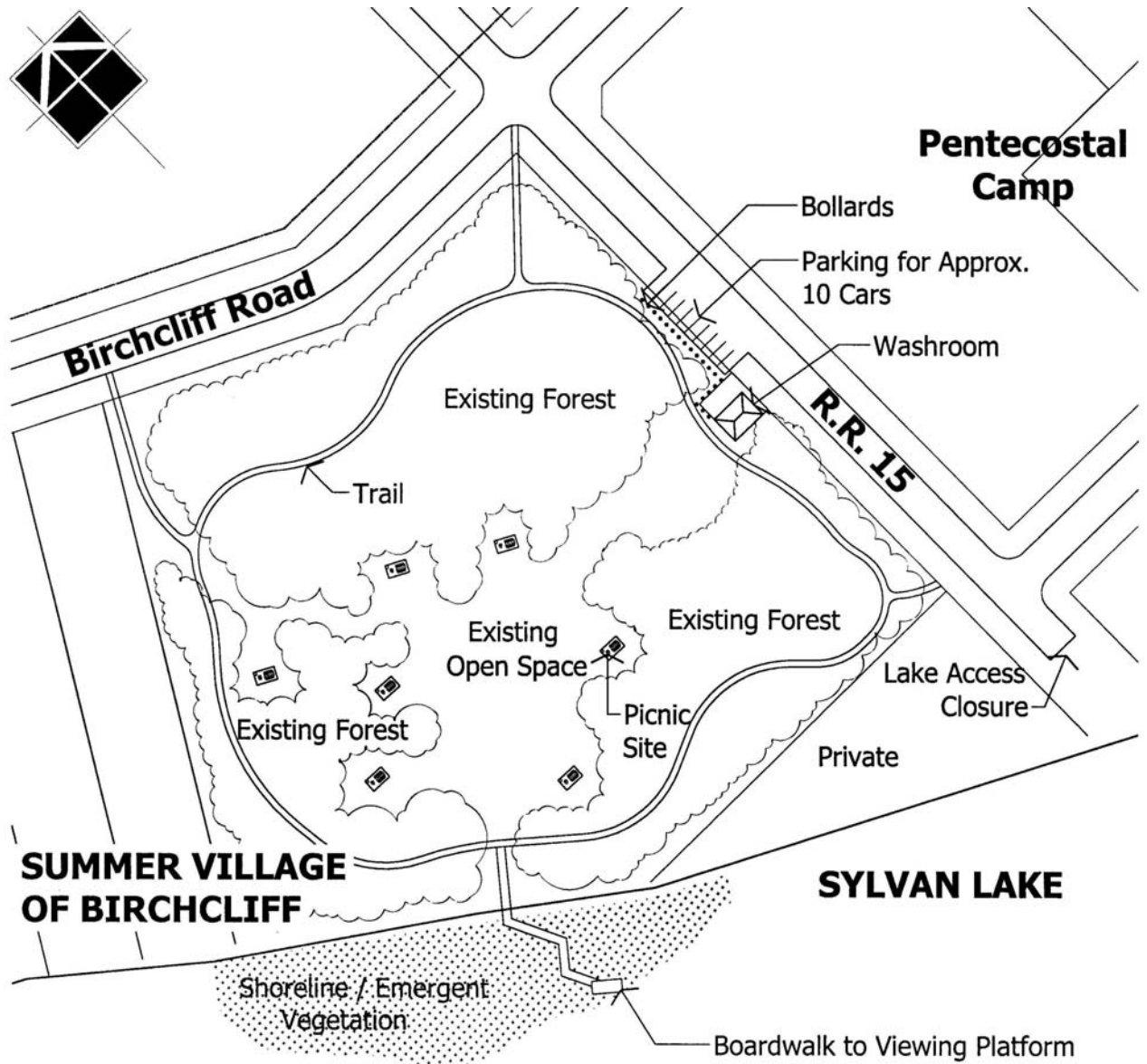


Figure 3.2:
Birchcliff Day Use

3.4.2 Kuusamo Krest Reserve

It is recommended that the Kuusamo Krest reserve, combined with the seasonal closure of RR23, be developed as a family oriented day use site with a small parking area, washrooms, picnic sites, boardwalk and interpretive trail and viewpoints as illustrated on Figure 3.3.

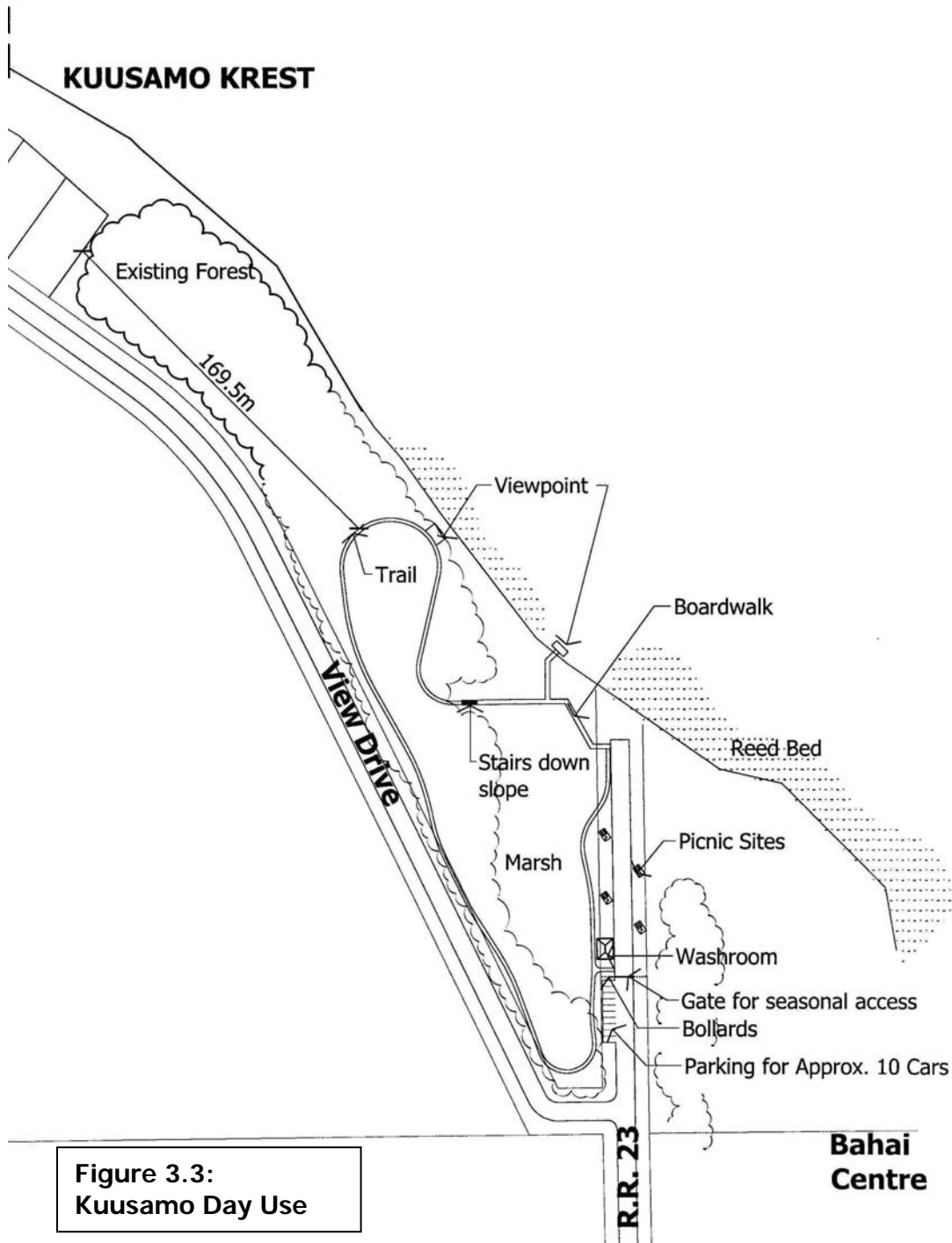
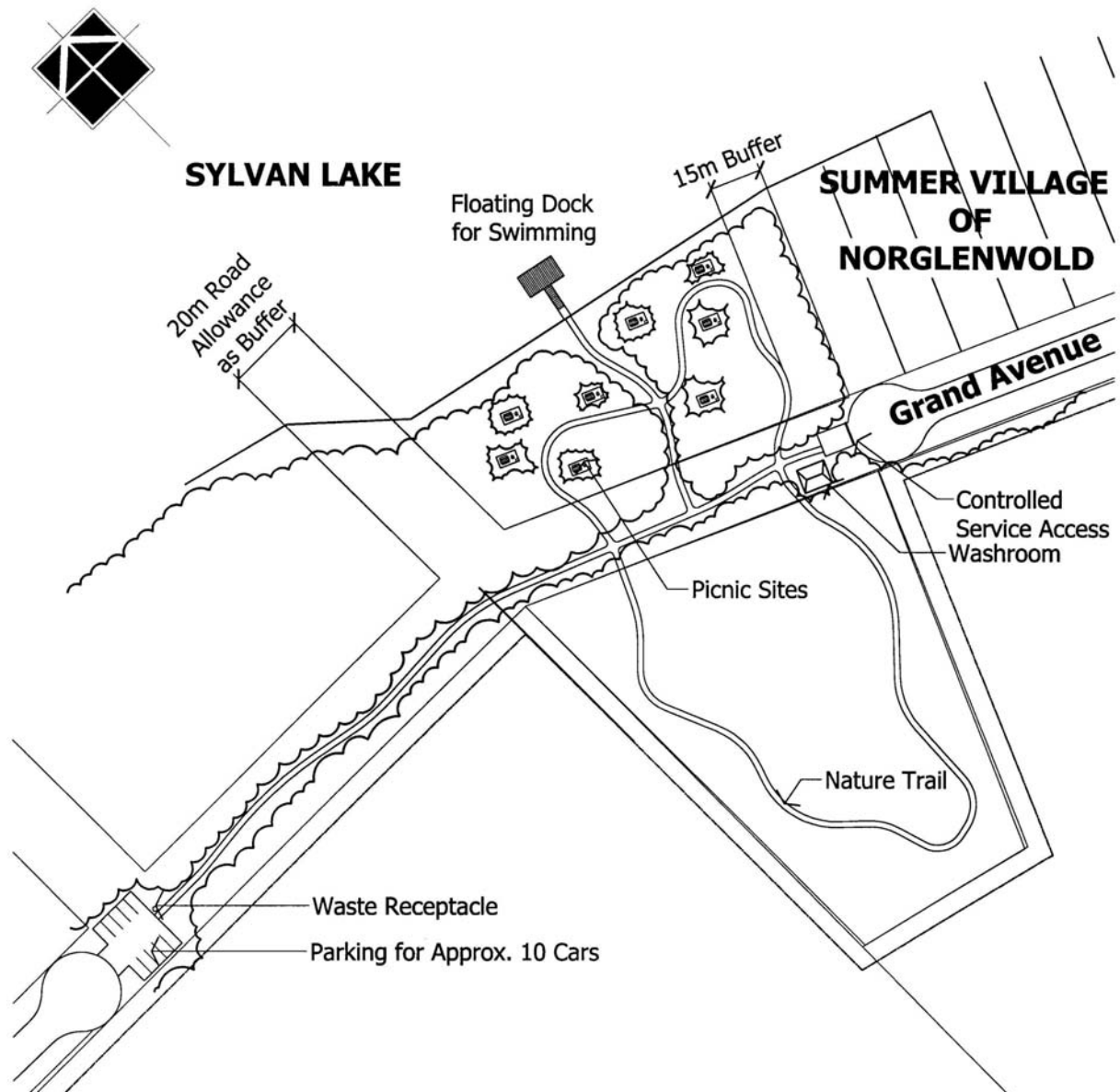


Figure 3.3:
Kuusamo Day Use

3.4.3 Norglenwold Reserve

It is recommended that the Norglenwold park reserve be developed as a family oriented day use site with a small parking area, washrooms, picnic sites, loop trail, and a floating pier as illustrated on Figure 3.4.



**Figure 3.4:
Norglenwold Day Use**

3.5 FUTURE PUBLIC ACCESS THROUGH SUBDIVISION

Without the specific acquisition of land for the development of future public access on the lake, the best opportunity that is available for securing new public access sites is through the dedication of municipal and environmental reserves at the time of subdivision. Since it is anticipated that development of new residential lakeshore subdivisions will occur around the lake, new public access sites in the form of reserves will be dedicated to the municipalities (primarily Lacombe County). Private lands that have the highest suitability for the development of public access sites have been identified in Section 6.5 of the *Background Report*. However, it is recommended that municipalities should require the development of specific public access or contribution towards public access as a condition of all subdivision development. The following recommendations are designed to improve the provision of public access to Sylvan Lake through the subdivision and development of lakeshore residential within the study area.

3.5.1 Lake Edge Subdivisions

Lake edge subdivisions are those in which the property line of the parcel is physically connected to the normal water level of the lake.

- i. **Municipal Reserve (MR) Dedication** – for new lake edge subdivisions, the municipalities must take their full 10% allotment for MR and it is recommended that where possible, the reserve dedication be taken as a single parcel of land. Further, the municipality should work with the developer to encourage additional MR or open space by: (a) requiring MR dedication for 10% of the entire parcel that is the subject of the subdivision (less ER dedicated) not just 10% of the parcels being created; (b) allowing smaller lot sizes (eg. within the Lacombe County Residential Lakeshore District, developers may be allowed smaller lots, not less than 0.75 acres, subject to the provision of the equivalent of 20% MR as reserve and/or open space), (c) encourage compact forms of development to maximize the overall development open space and preserve natural forest areas.
- ii. **MR Location & Access** – Dedicated MR must be developable land and the location and configuration of MR parcels should recognize its potential public access function. For new lake edge subdivisions it is recommended that MR be integrated (physically linked) with shoreline ER parcels to create a public access site suitable for day use. The width of the MR parcel should be a minimum 30 metres to provide for parking and turnaround and vehicle access to the water if necessary. MR parcels must be accessible from adequately designed and constructed roadways, with direct connections to municipal roads wherever possible. In locations where sites are not suitable for public access due to steep slopes, sensitive shorelines or key habitat areas additional land should be dedicated by ER or a public access levy may be applied as per recommendation (iv).

- iii. **MR Development** – for lake edge subdivisions, it is recommended that the developer be responsible for all costs associated with the development of the MR as a designated day use site. The day use site shall provide the same level of provisions as those sites identified in Section 3.4, including but not limited to: all weather road access and parking, washroom, picnic sites (3/ha), trash receptacle (1/3 picnic), a floating pier, treed buffers (min 5m wide) and restoration of disturbed areas. The developer may choose to undertake development of the site or provide the municipality with a negotiated capital contribution to cover the development costs. Municipal standards for design and approvals would be applied and management of the site would be the responsibility of the municipality. As defined in Section 4.3 of this report, the estimated capital cost of a typical day use site would be \$50,000/ha. Some municipalities may need to include a policy in their Municipal Development Plan which specifies that the municipality may require that the developer improve Municipal Reserve lands
- iv. **Public Access Levy** – some municipalities require that developers provide a recreation contribution or levy, which represents the cost of providing additional recreation facilities for new residents. For new lake edge subdivisions where the developer is to be responsible for all costs associated with the development of the MR as a designated day use site, it is recommended that a public access levy not be required. For new lake edge subdivisions where the MR is not suitable for public access development (steep slopes, environmental sensitivity), it is recommended that a public access levy be required. A recommended guideline for the public access levy is \$5000/ha of developable land based on providing an equivalent value to the cost of MR development (\$50,000/ha). It is recommended that these funds be allocated by the municipality to capital development or improvements to public access sites in proximity to the development (ie. sites that new residents are likely to use)
- v. **Planning** - Residential subdivisions within the study area should be required to complete an Area Structure Plan or Outline Plan to support redesignation and subdivision of the lands. The County may require that the plan area cover a logical unit of land, which may include several parcels. MR lands should also be developed based on a plan which is submitted and approved by the municipality.
- vi. **Environmental Reserve (Shoreline)** – for new lake edge subdivisions, it is recommended that the municipalities require the dedication of a minimum of 30.0m wide shoreline Environmental Reserve from the high water level of the lake at the time of subdivision. The municipality may require more or less ER as a means to ensure the protection of shoreline and upland vegetation or in cases where moderate or steep slopes exist. In cases of slope protection the reserve shall include the slope face and extend beyond the top of bank (or crest of the escarpment) a distance of not less than 5 metres.
- vii. **Environmental Reserve (Features)** - Areas and features within a subdivision which are deemed to be unbuildable or considered to be environmentally significant will be dedicated as ER. The ER shall provide protection from any developments through the provision of setbacks equal to or greater than 6m. It is recommended that environmental features to be protected include drainage courses, unique natural areas, hilly or special scenic areas, key wildlife and bird habitats, water bodies, flood plains, marsh lands, steep slopes, eroded areas and organic soils.

- viii. **Environmental Reserve Easement** – For shorelines or features not suitable for development, and where public access is not required, the municipality and the developer may agree to have the land dedicated as an environmental reserve easement. Since protection of the shoreline and associated riparian and upland vegetation is a top priority at Sylvan Lake, dedication of shoreline areas as easements, rather than reserves is acceptable provided that the control and use of those areas will be clearly stated in the easement agreement. ER easements shall be dedicated under the same conditions in terms of location and extent as is defined for shoreline ER in recommendation (vi) above.
- ix. **Conservation Easement** - For shorelines or features not suitable for development, and where public access is not required, the owner may elect to donate the land as a conservation easement. The *Income Tax Act* provides for individuals or corporations to donate private land to a federal or provincial government and receive a tax credit for "gifts to the Crown". Donation of ecologically sensitive lands and easements is emerging as an important tool in conserving sensitive ecosystems and biodiversity across Canada. The dedication of land as a conservation easement requires certification of the character of the ecological gift (environmental assessment/screening) and certification that the recipient agency (sponsor and manager) for the gift is a qualified registered charity. In Alberta this responsibility rests with the Environmental Conservation Division of Environment Canada. Conservation easements shall be dedicated under the same conditions in terms of location and extent as is defined for shoreline ER in recommendation (vi) above.
- x. **Require Communal Docks** – The use of joint access and docking facilities by lakeshore property owners, rather than individual piers and access points, will provide lake access to residents with much less impact to littoral zones than currently occurs with multiple access points. It is recommended that development plans include provision for communal access to the shoreline and a communal dock via MR/ER.
- xi. **Marina/Launch** - if a developer proposes to develop a marina and/or boat launch for their development, it must include public access provisions including a minimum of 15 truck/trailer parking stalls, washrooms and picnic sites. The development should be paid for and managed by the owner.
- xii. **Trails** – for new lake edge subdivisions, it is recommended that municipalities require developers to provide designated trail corridors within and through the subdivision. Trails shall be designed to provide physical access to the lakeshore for subdivision residents as well as providing links to existing trails, roads, adjacent developments and public access sites. A trail plan which provides context around the subdivision (Min. 1.6 sq. km) should be submitted to the municipality. The preparation of a lake-wide Trail Master Plan will be needed to provide direction to both the municipality and the developer. Trails within subdivisions should be separate and dedicated, gravel or wood chip surface and a minimum of 1.5 m wide.

3.5.2 Back Lot Subdivisions

Back Lot subdivisions are those where no part of the parcel boundary is physically connected to the lake. The objective for back lot subdivisions is to ensure that the development provides financial contributions towards a public access site in proximity to the development for use by new residents as well as by existing residents in the area.

- i. **Cash-in-Lieu** – for back lot subdivisions it is recommended that municipalities consider accepting cash-in-lieu of MR dedication and it is recommended that these funds be allocated by the municipality to capital development or improvements to public access sites in proximity to the development (ie. sites that new residents are likely to use)
- ii. **Public Access Levy** – For new back lot subdivisions, it is recommended that a public access levy (recreation contribution) **be required**. A recommended guideline for the public access levy is \$5000/ha of developable land based on providing an equivalent value to the cost of MR development (\$50,000/ha). It is recommended that these funds be allocated by the municipality to capital development or improvements to public access sites in proximity to the development (ie. sites that new residents are likely to use)
- iii. **Planning** - Residential subdivisions within the study area should be required to complete and Area Structure Plan or Outline Plan to support redesignation and subdivision of the lands. The County may require that the plan area cover a logical unit of land, which may include several parcels. MR lands should also be developed based on a plan which is submitted and approved by the municipality.
- iv. **Environmental Reserve (Features)** - Areas and features within a subdivision considered to be environmentally significant will be protected from any developments through the provision of setbacks equal to or greater than 6m. In the case of natural drainage courses or streams the setback shall include the vegetated or unvegetated banks or slopes. Other examples of areas or features to be protected include are unique natural areas, hilly or special scenic areas, wildlife and migratory bird habitats, water bodies, flood plains, marsh lands, steep slopes, eroded areas and organic soils.
- v. **Trails** – for new lake edge subdivisions, it is recommended that municipalities require developers to provide designated trail corridors within and through the subdivision. Trails shall be designed to provide physical access to the lakeshore for subdivision residents as well as providing links to existing trails, roads, adjacent developments and public access sites. A trail plan which provides context around the subdivision (Min. 1.6 sq. km) should be submitted to the municipality. The preparation of a lake-wide Trail Master Plan will be needed to provide direction to both the municipality and the developer. Trails within subdivisions should be separate and dedicated, gravel or wood chip surface and a minimum of 1.5 m wide.

4 IMPLEMENTATION

4.1 THE SYLVAN LAKE MANAGEMENT PLAN COMMITTEE

One of the challenges to managing the resources of Sylvan Lake is the large number and diversity of owners, managers, stakeholders and interest groups. Throughout the *SLMP* as well as this study, the elected officials from the eight municipalities have worked cooperatively to represent these various groups for the benefit of the lake as a whole. The efforts of the SLMPC have resulted in a much better understanding of the issues regarding recreation capacity and public access and have provided a solid platform for further cooperative action. Regardless of successive attempts to formalize its function and tasks, the SLMPC has continued to provide information and direction to their respective ratepayers and Councilors regarding the complex issue of planning for the future of Sylvan Lake. The current committee appears to function very well in an informal manner and the value of the committee's work should be recognized.

The next step in managing the lake will be implementation of this study's recommendations and it is recommended that the SLMPC become the primary review, advisory and coordinating body to oversee all aspects of implementation and management. Implementation of some or all of the preceding recommendations may be accomplished in a number of ways. However, as with the *SLMP*, the recommendations of the study should be considered as guidelines with individual municipalities encouraged to make amendment to their respective land use bylaws and/or Municipal Development Plans to formalize the provisions of the study or direct the study's use as a guide. Administratively this approach is the least complex to implement and based on the current level of commitment from the various municipal partners may prove most effective. Each municipality inevitably will have to compromise somewhere along the way to ensure that objectives related to protecting the lake while providing improved public access will be achieved. The key will be the ongoing commitment of the SLMPC to work cooperatively to achieve the overall objectives of managing recreation capacity and improving lake access.

The following is a summary of the roles and responsibilities that could be the mandate of the SLMPC.

- i. **Implementation Management** – one of the initial responsibilities of the SLMPC would be to manage the implementation of the Study recommendations and to monitor how effective the recommendations are in the long term.
- ii. **Monitoring & Management Coordination** – the SLMPC would also be responsible for coordinating the recreation capacity monitoring and management program. This role would involve gathering input from various provincial departments and NGO's.
- iii. **New laws and regulations** – Any local group, association or municipality can apply to implement a boating restriction. Any proposal for a new bylaw or Boating Restriction Regulation in support of the SLMPC objectives for managing recreation capacity and public access at Sylvan Lake would have to be brought before the SLMPC. Coordination of public consultation and applications through federal, provincial or municipal departments would be handled by the SLMPC.
- iv. **Special Constables** – a more effective approach to ensuring a consistent level of policing around the lake would be to have designated Special Constables shared by all eight municipalities. These officers could enforce bylaws, collect fines, and work on the water in support of the RCMP. They could also work in support of Public Lands and Fish & Wildlife for monitoring shoreline activities and issuing warnings and fines. The constables could report regularly to the SLMPC to keep them abreast of ongoing management issues.
- v. **Watchdog** – to address public complaints or concerns regarding activities on the lake (eg. Shoreline degradation) the SLMPC could maintain a complaints line (phone or website) so that concerned citizens have a single point of contact. The SLMPC could in turn contact the proper authority. A part time staff person or volunteer from a local NGO would be required to facilitate this activity possibly through the Town or Summer Village office.
- vi. **Education** – An important role of the SLMPC would be to manage and circulate educational materials and provide educational outreach to residents and visitors. A part time staff person or volunteer from a local NGO would be required to facilitate this activity possibly through the Town or Summer Village office.
- vii. **Involve & Coordinate NGO's** – As defined in Section 4.2, there are a number of local NGO's which already play important roles as stewards of Sylvan Lake. These groups are organized, active and knowledgeable and will be an important resource of information and support to the SLMPC if they are asked to be involved and specific roles and responsibilities can be defined for them.

4.2 ROLES & RESPONSIBILITIES OF OTHER MANAGERS

With the multiplicity of jurisdictions and agencies having responsibility over land use and water management matters around Sylvan Lake, the work of the SLMPC will be very important for the

objectives and recommendations of the study to be achieved. However, each of the many stakeholders around the lake will have an ongoing role as both a manager and more importantly, as a steward of Sylvan Lake. The specific responsibilities of each group are identified below:

- i. **Sylvan Lake Management Plan Committee (SLMPC)** - has worked effectively on the Management Plan for Sylvan Lake and now this Public Access Study. With representation from the 8 municipalities, the SLMPC will be responsible for implementation of the study recommendations and ultimately as the overall manager of Sylvan Lake.
- ii. **Municipalities** – As indicated previously, the recommendations of the study should be considered as guidelines with individual municipalities encouraged to make amendment to their respective land use bylaws and/or Municipal Development Plans to formalize the provisions of the study. Each municipality will have to compromise somewhere along the way to ensure that objectives related to protecting the lake while providing improved public access will be achieved. Each municipality will also be responsible to ensure that growth within its boundaries occurs in an environmentally sustainable manner.
- iii. **Provincial Government** – as a key provincial recreation resource, the Province has a responsibility to ensure that adequate public access to Sylvan Lake is maintained and that the lake environment is protected to ensure long term sustainability. Provincial representatives have indicated that current political direction and department funding will not facilitate the short term development of improved public access or public access management. It will be up to the municipalities, through the SLMPC, as well as other managers to influence political decision making at both the department and ministerial levels. This can be achieved in a number of ways including: (a) ensure provincial representation (Sustainable Development/Community Resource Development) on the SLMPC, (b) define specific priorities and demonstrated need for both public access operations and development including specific provincial (shared) responsibilities, (c) maintain open and ongoing communication with the various departments to ensure that issues and priorities are well documented, and (d) present proposals requesting specific funding for development or management.
- iv. **Federal Government** - Federal authorities with management responsibility at Sylvan Lake include the Department of Fisheries and Oceans (Fish Habitat Management Division), the Canadian Coast Guard (part of DFO) and the RCMP. DFO has a critical role to play in the protection of fish habitat through education and enforcement. The Coast Guard and the RCMP should be asked to take an expanded role in the enforcement of existing boating restriction regulations and establishment and enforcement of future boating restriction regulations. In partnership with NGO's, the SLMPC can encourage schools to provide educational opportunities using the programs and literature that DFO, the Coast Guard and conservation organizations have in place.
- v. **Landowners** - watershed landowners have vital roles to play in managing the natural and recreational resources of the Lake by properly managing the land and structures that they own. Most are concerned with protecting both their investment and the Lake environment. It is recommended that the SLMPC, in partnership with local NGO's, produce a seasonal lake newsletter to keep landowners and residents informed on current lake

management practices and programs, educational opportunities, and development updates.

- vi. **Visitors** – visitors to the lake have a responsibility to enjoy the resources and recreational pursuits related to the lake in a manner that respects both the environment and the quality of life and the rights of residents. Education of visitors can be accomplished through signage at public access sites and strict enforcement of bylaws. It is recommended that a consistent signage program be implemented by the SLMPC for all public access sites. Information could include the name/location, hours of use, unacceptable/unlawful activities, emergency contacts etc.
- vii. **The Public** – includes residents and visitors. The public should be regularly consulted for their views on how the lake planning and management is addressing the various interests and issues within the community.
- viii. **NGO's** – non-governmental organizations around the lake already play an important role as managers and should be encouraged by the SLMPC to continue their current efforts and take on specific and formalized management roles. As not-for-profit organizations, each of these groups also has access to funding and specific grants that may not be available to municipalities. These groups and their potential management roles are defined below:
 - *Sylvan Lake Watershed Stewardship Society* – role in public education related to environmental protection and enhancement. Bring together the expertise of larger groups such as Ducks Unlimited and the Alberta Conservation Association. Also can serve a role in assisting DFO, Fish and Wildlife and Public Lands in monitoring and protecting key shoreline habitat areas (PNT's).
 - *The Sylvan Lake Advisory Committee* – not currently active but have accomplished a great deal in the past 10 years. This group will to continue to work closely with Alberta Environment on an event basis to identify, monitor and address water management issues on Sylvan Lake.
 - *The North Shore Access Association* – maintain a license of occupation with the Province for the road allowance at Sun Haven Recreation Area to keep the boat launch open

4.3 IMPLEMENTATION PRIORITIES

From the previous recommendations the SLMPC has identified a number of implementation priorities as defined in Table 4.1. In addition to specific capital projects and operations, a few studies have also been identified. Detailed financial summaries are provided in Appendix A. The Action Plan time frame has been broken down into four segments: Immediate (1-2 years), Short Term (3-4 years), Long Term (5 years or more) and ongoing.

Table 4.1 IMPLEMENTATION PRIORITIES ³

CATEGORY	RECOMMENDATION	DESCRIPTION	ESTIMATED COST	RESPONSIBILITY	TIME FRAME
RECREATION CAPACITY	Implement Capacity Management Program	Confirm baseline information, notify managers, set targets and timelines	n/a	SLMPC	Ongoing
	Update & Manage Environmental Information Base	a basin-wide biophysical inventory should be undertaken to establish an environmental baseline for the watershed	n/a	SLMPC with support of Province & NGO's	Short Term
	Water Quality Studies	Ongoing Alberta Environment Monitoring, University of Calgary Study	n/a	Province	Short Term
	Boat Inventory and Use Study	Study Required	n/a	SLMPC	Short Term
	Education Programs	Use and circulation of existing literature, Develop and circulate newsletter, annual open houses	n/a	SLMPC & NGO's	Ongoing
PUBLIC ACCESS MANAGEMENT	Intermunicipal Site Management Program	Shared, consistent and equitable management program for all sites. Contract out to one municipality or private contractor.	\$22,500/yr	SLMPC for Municipalities	Immediate
	Intermunicipal Policing Program	Shared and equitable policing program for all public access (except Provincial). Contract out to one municipality or private contractor.	\$90,000/yr	SLMPC for Municipalities	Immediate
	Road Allowance Closures & Amenity Upgrades	Permanent or seasonal closure of road allowances and conversion to small day use	\$36,000 per site	Municipality	Short Term
	New Boating Restriction Regulations & Bylaws	Based on study results and public input, apply for boating restrictions or implement bylaws	n/a	SLMPC for Municipalities	Long Term

³ Note: All estimated capital and operational costs are in 2002 dollars and should be updated at the time of implementation.

Table 4.1 IMPLEMENTATION PRIORITIES (continued)

CATEGORY	RECOMMENDATION	DESCRIPTION	ESTIMATED COST	RESPONSIBILITY	TIME FRAME
PUBLIC ACCESS DEVELOPMENT	Birchcliff Day Use	Parking, bollards, trail, boardwalk & viewpoint, washroom, picnic sites, restoration	\$128,000	Municipality with support of Province	Short Term
	Kuusamo Day Use	Parking, bollards & gate, trail, floating pier, boardwalk, lookouts, washroom, picnic sites	\$200,000	Municipality with support of Province	Short Term
	Norglenwold Day Use	Access & parking, trail, floating pier, washroom, 8 picnic sites, restoration	\$105,000	Municipality with support of Province	Short Term
	Marina Expansion	Support expansion of launch capacity, requires off site parking, environmental approvals	n/a	Private	Short Term
	Sun Haven Expansion	Expansion of parking and provision of amenities to reduce conflicts	\$62,000	Province	Long Term
	Half Moon Bay Parking & Launch	Provision of parking & amenities if land can be purchased or if provided through subdivision	\$105,000	Municipalities with support of Province	Long Term
	Campground expansion	Land available in Jarvis Bay Prov. Park. No plans by province, opportunity for developer	n/a	Private or Province	Long Term
	Trail Development	Development of a formal trail network will require a master plan	n/a	SLMPC for Municipalities	Long Term
	Beach Expansion	A number of opportunities to expand beach capacity, no plans by province	n/a	Province	Long Term
FUTURE PUBLIC ACCESS THROUGH SUBDIVISION	Lake Edge MR as Day Use Sites	Developers responsible for development of MR into designated day use sites	\$50,000/ha of MR	Developer	Ongoing
	Public Access Levy	Developers provide access levy for the development or upgrading of nearby public access sites	\$5000/ha.	Developer	Ongoing
	Trail Development	Developers responsible for design and construction of trails within and through their subdivisions	n/a	Developer	Ongoing

4.4 FINANCIAL IMPLICATIONS

There are clearly a number of financial implications related to the implementation of the recommendations of the report. The following is an outline of the implications to be considered as the report is reviewed:

- i. **Maintenance** – if all public access (except for Provincial Parks) becomes the responsibility of the SLMPC, then a large maintenance budget will be required. As defined in section 3.3, it is recommended that a cooperative management program be developed and implemented by the SLMPC on behalf of the municipalities for the management of all municipal public access sites. The management could be contracted out either through one of the municipalities or to a private contractor and paid for on an equal share basis proportionate to the number and size of sites. The costs associated with maintenance will have to be allocated from municipal budgets, a portion of which is already in place for maintenance of existing sites.
- ii. **Enforcement**– if all public access (except for Provincial Parks) becomes the responsibility of the SLMPC, then a large budget will be required for designated Special Constables for the lake. As defined in section 3.3, it is recommended that a cooperative enforcement program be developed and implemented by the SLMPC on behalf of the municipalities for the management of all municipal public access sites. The costs associated with enforcement will have to be allocated from municipal budgets, a portion of which is already in place for existing enforcement programs.
- iii. **Site Upgrading** – as a provincial resource, the SLMPC may look to the Province for the funding of site upgrades. Cost estimates for proposed day use development and site closures have been provided in section 4.3.
- iv. **Cash-in-lieu & Public Access Levies** – it is recommended that this money be collected by municipalities and directed towards the development or improvement of public access within that municipality.
- v. **Grants** – a number of provincial and federal grants which are available and specific to environmental protection and recreation development. Many of these grants are available to not-for-profit groups only and so it will be important that the SLMPC partner with local NGO's and other groups for various initiatives. Some of the key grants are defined in Appendix B.

5 APPENDICES

5.1 APPENDIX A: DETAILED FINANCIAL INFORMATION ⁴

Item	Description	Units	Unit Price	Quantity	Total
1.0	Norglenwold				
1.1	Construct gravel parking lot	sq.m.	\$30.00	560	\$ 16,800.00
1.2	Supply & install precast concrete curb stops	each	\$50.00	10	\$ 500.00
1.3	Supply & install wood bollards	each	\$200.00	10	\$ 2,000.00
1.4	Supply & install 1.5m wide gravel trails	lin.m.	\$25.00	570	\$ 14,250.00
1.5	Supply & install floating dock	l.s.	\$15,000.00	1	\$ 15,000.00
1.6	Supply & install washroom (2 stalls)	each	\$20,000.00	1	\$ 20,000.00
1.7	Supply & install picnic sites (incl. Concrete pad, picnic table, waste receptacle, fire box)	each	\$3,500.00	8	\$ 28,000.00
1.8	Restore site w/ seed and topdressing	sq.m.	\$3.00	2,500	\$ 7,500.00
				Subtotal:	\$ 104,050.00
2.0	Kuusamo Krest				
2.1	Construct gravel parking area	sq.m.	\$30.00	150	\$ 4,500.00
2.2	Supply & install precast concrete curb stops	each	\$50.00	10	\$ 500.00
2.3	Supply & install 1.5m wide gravel trails	lin.m.	\$25.00	545	\$ 13,625.00
2.4	Supply & install wood boardwalk	lin.m.	\$1,000.00	100	\$ 100,000.00
2.5	Supply & install viewpoints	each	\$15,000.00	2	\$ 30,000.00
2.6	Supply & install washroom (2 stalls)	each	\$20,000.00	1	\$ 20,000.00
2.7	Supply & install wood bollards	each	\$200.00	10	\$ 2,000.00
2.8	Supply & install gate	l.s.	\$2,500.00	1	\$ 2,500.00
2.9	Supply & install picnic sites (incl. Concrete pad, picnic table, waste receptacle, fire box)	each	\$3,500.00	4	\$ 14,000.00
3.0	Restore site w/ seed and topdressing	sq.m.	\$3.00	4,300	\$ 12,900.00
				Subtotal:	\$ 200,025.00
3.0	Birchcliff				
3.1	Construct gravel parking area	sq.m.	\$30.00	150	\$ 4,500.00
3.2	Supply & install precast concrete curb stops	each	\$50.00	10	\$ 500.00
3.3	Supply & install wood bollards	each	\$200.00	25	\$ 5,000.00
3.4	Supply & install 1.5m wide gravel trails	lin.m.	\$25.00	550	\$ 13,750.00
3.5	Supply & install boardwalk and viewpoint	lin.m.	\$1,000.00	45	\$ 45,000.00
3.6	Supply & install washroom (2 stalls)	each	\$20,000.00	1	\$ 20,000.00
3.6	Supply & install picnic sites (incl. Concrete pad, picnic table, waste receptacle, fire box)	each	\$3,500.00	7	\$ 24,500.00
3.7	Restore site w/ seed and topdressing	sq.m.	\$3.00	4,900	\$ 14,700.00
				Subtotal:	\$ 127,950.00

⁴ Note: All estimated capital and operational costs are in 2002 dollars and should be updated at the time of implementation.

Item	Description	Units	Unit Price	Quantity	Total
4.0	Typical Road Allowance Closure				
4.1	Construct new gravel driveway & parking lot	sq.m.	\$30.00	300	\$ 9,000.00
4.2	Supply & install precast concrete curb stops	each	\$50.00	6	\$ 300.00
4.3	Supply & install wood bollards	each	\$200.00	11	\$ 2,200.00
4.4	Supply & install gate	l.s.	\$2,500.00	1	\$ 2,500.00
4.5	Supply & install single vault toilet	each	\$10,000.00	1	\$ 10,000.00
4.6	Supply & install waste receptacle	each	\$1,100.00	1	\$ 1,100.00
4.7	Supply & install picnic sites (incl. Concrete pad, picnic table, waste receptacle, fire box)	each	\$3,500.00	2	\$ 7,000.00
4.8	Restore site w/ seed and topdressing	sq.m.	\$3.00	270	\$ 810.00
4.9	Supply & install trees	each	\$350.00	11	\$ 3,850.00
				Subtotal:	\$ 36,760.00
5.0	Sun Haven Boat Launch Parking				
5.1	Construct gravel parking lot expansion	sq.m.	\$30.00	955	\$ 28,650.00
5.2	Supply & install washroom (2 stalls)	each	\$20,000.00	1	\$ 20,000.00
5.3	Supply & install waste receptacle	each	\$1,100.00	1	\$ 1,100.00
5.3	Restore site w/ seed and topdressing	sq.m.	\$3.00	730	\$ 2,190.00
5.3	Supply & install boat launch	l.s.	\$10,000.00	1	\$ 10,000.00
				Subtotal:	\$ 61,940.00
6.0	Half Moon Bay				
6.1	Construct new gravel turnaround & parking lot	sq.m.	\$30.00	1,410	\$ 42,300.00
6.2	Supply & install washroom (2 stalls)	each	\$20,000.00	1	\$ 20,000.00
6.3	Supply & install picnic sites (incl. Concrete pad, picnic table, waste receptacle, fire box)	each	\$3,500.00	4	\$ 14,000.00
6.4	Supply & install floating dock	l.s.	\$15,000.00	1	\$ 15,000.00
6.5	Supply & install boat launch	l.s.	\$10,000.00	1	\$ 10,000.00
6.6	Restore site w/ seed and topdressing	sq.m.	\$3.00	1,440	\$ 4,320.00
				Subtotal:	\$ 105,620.00
7.0	Operational Costs				
7.1	Larger Day Use - Maintenance - garbage removal twice per week, washrooms once per week, mowing, repairs	Each Site Annual Cost (25 weeks)	\$5,000.00	3	\$ 15,000.00
7.2	Smaller Day Use - Maintenance - garbage removal twice per week, washrooms once per week, mowing, repairs	Each Site Annual Cost (25 weeks)	\$1,500.00	5	\$ 7,500.00
7.3	Special Constables - assumes: 50 days per year 2 constables/2 vehicles 8 hours/day, 100 days per year 1 constable/1 vehicles 8 hours/day	l.s.	\$90,000.00	1	\$ 90,000.00
7.4	SLMPC Staff Person - assumes: Part time (30 Hrs/week) from May 1 to October 1. Includes salary and office expenses.	l.s.	\$30,000.00	1	\$ 30,000.00

5.2 APPENDIX B: POTENTIAL GRANTS

- i. **TD Friends of the Environment Foundation Community Fund** - The purpose of the TD Friends of the Environment Foundation Community Fund is to provide funding support for worthwhile community-based initiatives that make a positive difference to the Canadian environment. Local Advisory Boards, made up of customers and employees, review the applications and make recommendations for funding support according to the established guidelines. Applications for the Community Fund are reviewed throughout the year. The Community Fund will consider projects that meet the following criteria: protects and preserves the Canadian environment; assists young Canadians in understanding and participating in environmental activities in local communities; enhances cooperation among environmental organizations.
- ii. **The Community Facility Enhancement Program (CFEP)** - assists communities with the construction, renovation or re-development of community public-use facilities. The program provides matching grants to municipalities, Indian Bands and Metis Settlements, and registered community non-profit groups to build, purchase, repair, renovate, or otherwise improve related family and community wellness facilities.
- iii. **Alberta Sport, Recreation, Parks, and Wildlife Foundation (ASRPWF)** - The goal of the ASRPWF is to provide financial assistance in support of sport, recreation, parks and wildlife activities in Alberta. The Development Initiatives Program provides support for project and program related endeavors at the regional and provincial level. The Hosting Program encourages the development of youth in sport, recreation, parks and wildlife and promotes economic growth in Alberta.
- iv. **Community Initiatives Program (CIP)** - A partnership approach to funding, the Community Initiatives Program (CIP) provides funds to enhance and enrich project-based initiatives throughout Alberta. CIP supports project-based initiatives in areas such as community services, seniors' services, libraries, arts and culture, sports, education, health and recreation. The Community Initiatives Program is a matching grant program. The matching requirement may be met in the form of any contribution of money, volunteer labour, services, or donated materials or equipment for the project.
- v. **The Alberta Ecotrust** - is an environmental grantmaking foundation created through the cooperative efforts of a number of founding corporations and environmental, non-governmental organizations. The Alberta Ecotrust provides financial support to non-profit community and environmental groups for practical and educational projects that involve public participation and benefit the natural environment
- vi. **Infrastructure Canada-Alberta Program (ICAP)** – is a partnership program between the federal, provincial and municipal governments and in some cases, private sector organizations. The purpose of ICAP is to improve urban and rural municipal infrastructure in Alberta. The first priority for ICAP is Green Municipal Infrastructure, the second priorities include infrastructure supporting local transportation, culture and **recreation, tourism**, rural and remote telecommunications, and internet access for public institutions.