

Nepahwin Lake Watershed:
Its past, present, and future

By Amy Hallman
under the supervision of Dr. John Gunn, Ontario Ministry of Natural Resources
Co-operative Freshwater Ecology Unit, Laurentian University

August 1996

The name for Nepahwin Lake comes from an old native term meaning “sleeping lake”.
Over the years the lake has been called many names including Stoney, Trout,
Lockerby and Nepahwin. The official name of Nepahwin was adopted on August 4, 1949
When a plebiscite was held by the community and it was voted to call it Nepahwin.
This name was reaffirmed by the Ministry of Natural Resources on April 4, 1957.

(Source: Jeff Ball – Dept. of names, Ministry of Natural Resources, Toronto)

ACKNOWLEDGEMENTS

This project was supported by the Ontario Ministry of Northern Development and Mines through the Environmental Youth Corps program. I would like to take this opportunity to thank all the people who made this project a success. First, I am very grateful to Rod Sein and Carole Chenard at the Freshwater Ecology Unit for all of their help. I would also like to thank the staff at the Civic Square Library for their assistance in finding what I needed. Also very helpful were the staff at the Ministry of Natural Resources, the Ministry of the Environment, and the city Engineering and Planning Departments in providing maps. Thank you also to Heather Bartram at the Sudbury Health Unit and all of the longtime residents of the lake who shared their stories with me.

TABLE OF CONTENTS

	Page
Introduction.....	4
The Lake and its Watershed.....	7
The History of Development in the Nepahwin Watershed.....	13
Water Quality and Fish.....	18
Public Access.....	21
Bennett and Still Lakes.....	21
Environmental Concerns at the Idylwyld Golf Course.....	23
Air Pollution Concerns.....	24
Spills.....	26
Current Attitudes and Concerns.....	27
The Future of the Watershed.....	28
References.....	29
Appendix (photos).....	31

LIST OF MAPS

Map #1: Contour depths of Nepahwin Lake.....	5
Map #2: The Nepahwin Watershed.....	6
Map #3: Flow of Water and Location of Storm Sewers.....	8
Map #4: Ownership of Nepahwin's Islands.....	9
Map #5: Wildlife Corridor of the Watershed.....	10
Map #6: Beaton Trail System.....	12
Map #7: Public Access Points on Nepahwin Lake.....	22
Map #8: Liming and Treeplanted Areas in the Watershed.....	25

INTRODUCTION

“How Big is Your Backyard?”

If asked this question, what would be your answer? Is it whatever lies within the boundaries of your fence? Your neighborhood?

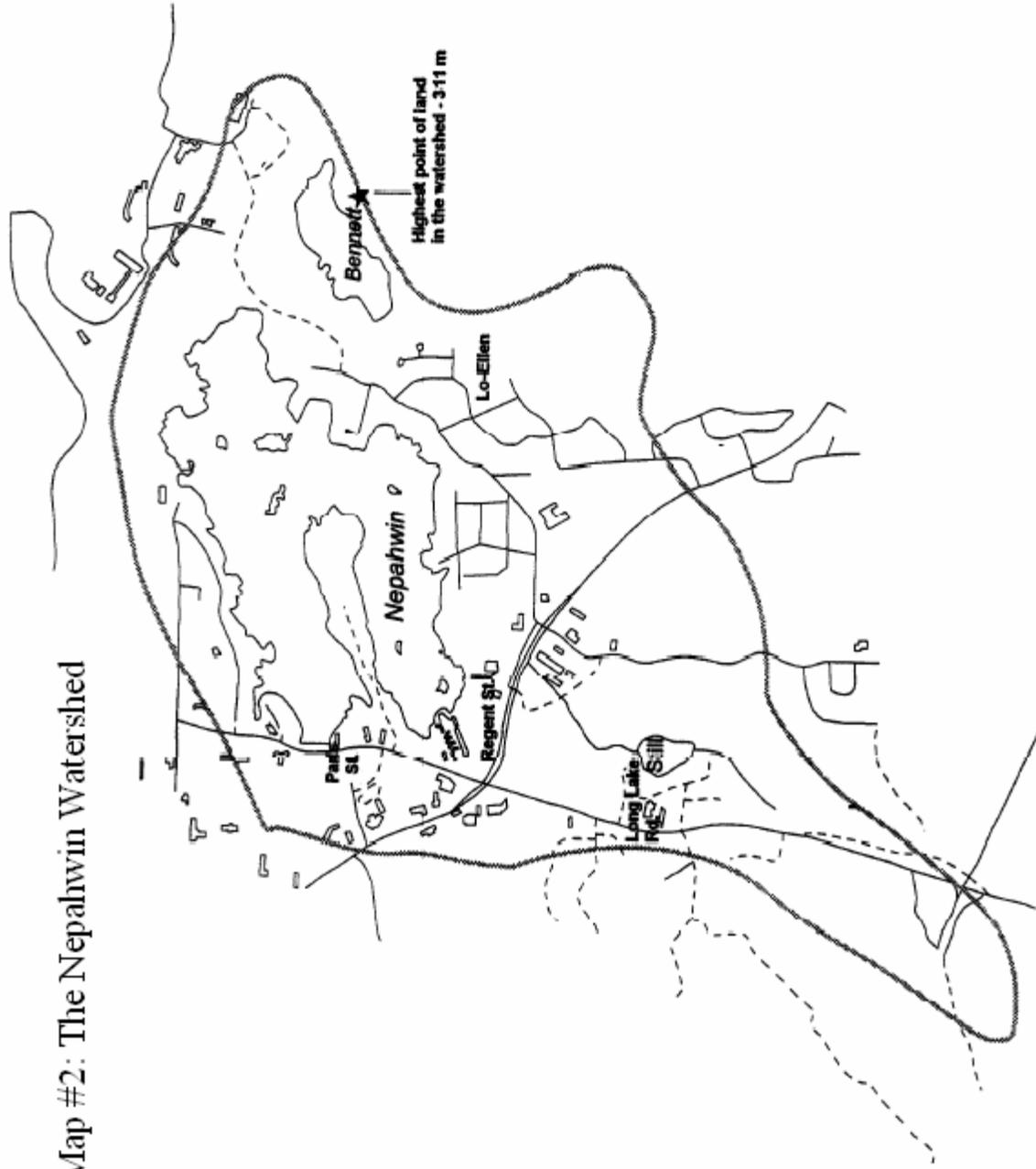
Actually, when looking at things from an ecological standpoint, our backyards are a lot bigger than we might think. The question of what we are responsible for as individuals and as a community becomes complex when we partition off parcels of land and isolate them from all others. When we think of watersheds for example, we can see that some occurrences such as an oil spill in one area can impact many other parts of the watershed by moving through storm sewers, over land as surface runoff or by contaminating groundwater. Also if we use fertilizer high in phosphate on our lakefront property, it can be washed into the lake and potentially harm water quality and fish populations. In the final analysis, virtually everything spilled or brought into the watershed must eventually make its way into the lake. Microorganisms and other agents of the natural “cleaning” process of lakes can deal with some of these contaminants but as we have often seen, these beneficial natural processes can also be easily overwhelmed.

So, what if we began to consider our “backyard” as the whole watershed in which we live? How would this change our perspective on the way we treat our surroundings? This report will look at the health of Nepahwin Lake in Sudbury from this watershed perspective. The amount of developmental pressure on Nepahwin Lake has greatly increased in the last few decades and this has raised many concerns about effects on water quality, boating safety, fish and wildlife populations and other aspects of the health of this particular aquatic ecosystem. The paper will provide some history, describe the current status of environmental conditions within the watershed, and will begin to address some of these concerns.

Map #1: Contour depths of Nepalwin Lake (in meters)



Map #2: The Nepahwin Watershed

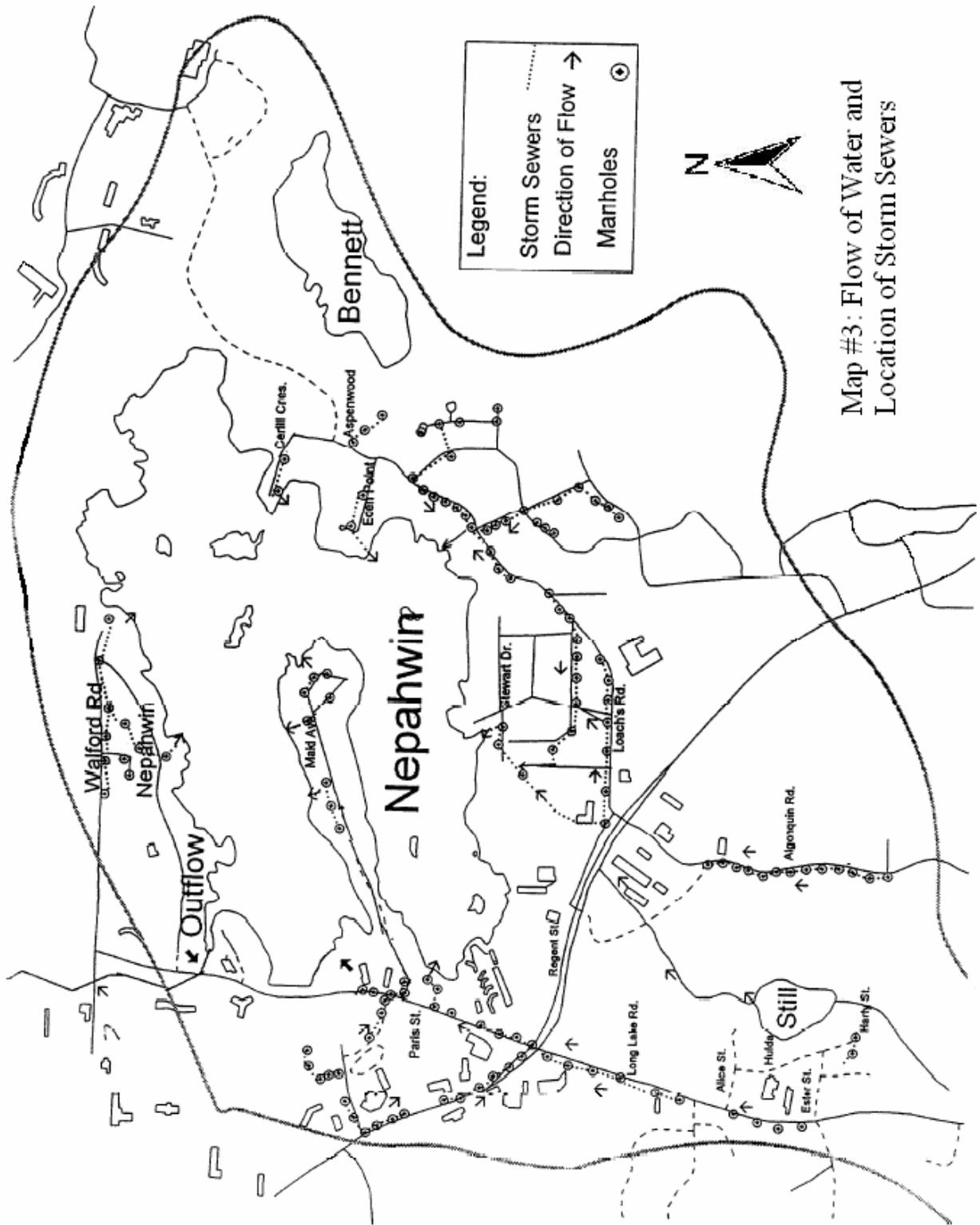


THE LAKE AND ITS WATERSHED

Nepahwin Lake is a 128-hectare lake in the south end area of Sudbury. The lake has a shoreline perimeter of 9.9 km and is 22 meters in depth. (See Map #1 for a depth map of Nepahwin). The lake is situated within a 744-hectare watershed that extends around Nepahwin Lake from points near the South – West Bypass to Walford Rd. and Laurentian University (see Map #2). All the rainwater, snowmelt water, or any other water brought into the watershed (e.g. by watering lawns with municipal water) eventually ends up in Nepahwin Lake. The watershed boundary encompasses such dominant features as the lake surface of Nepahwin itself, two upstream lakes (Still and Bennett), the Idylwylde Golf and Country Club, and the hiking and ski trails at Laurentian University. Several residential areas are also contained in the watershed including Lo-Ellen Park, Maki Ave., Nepahwin Ave., as well as commercial areas (e.g. Algonquin Square, Four Corners) and industrial areas (e.g. on Old Burwash Rd. and Long Lake Rd.). There are also two municipally owned parks (Nepahwin and Stewart beaches) and a third beach owned by Laurentian University but accessible to the public by a walking trail. The flushing time of this watershed (i.e. the no. of years it would take to empty and refill the basin of the lake) is 3.616 years. The highest point in elevation within the basin is 311 meters (48 m above the elevation of Nepahwin Lake) on the eastern edge of the watershed beside Bennett Lake (Map #2). The pattern of this drainage, including the location of all storm sewers of the area, is shown in Map #3. There is virtually no crown land in the watershed except for three islands in Lake Nepahwin – Duck Island and two other small unnamed islands off the Maki Ave. shore. McMahon's and Meda islands are both owned by the Idylwylde and the other two are privately owned. Map #4 shows the location of these islands and their ownership status.

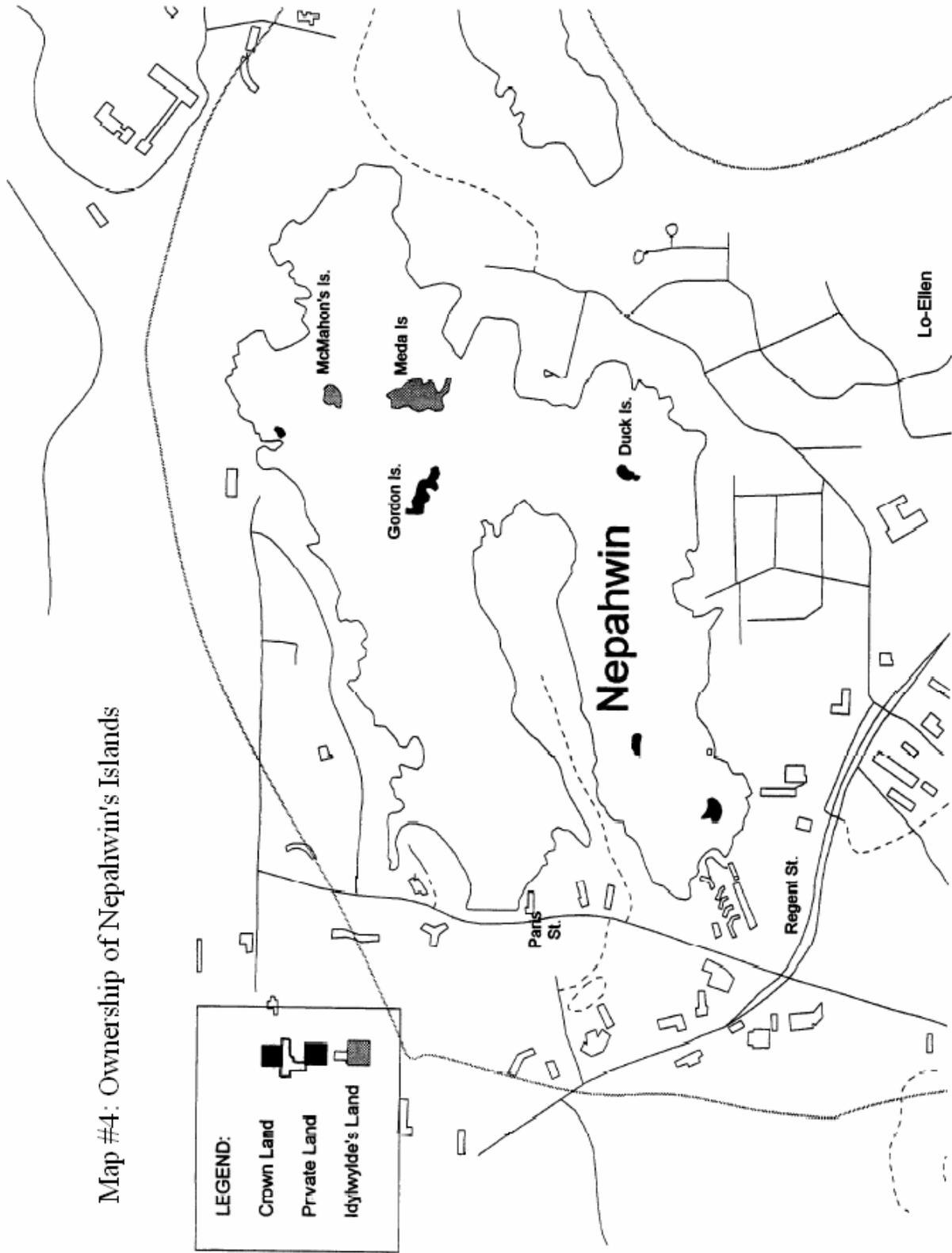
Nepahwin was formed by the glaciers as they scoured the landscape more than 10,000 years ago and it is also one of the deepest lakes inside the city limits (maximum depth, 22m), Brodill Lake being the deepest. One of the things that makes the Nepahwin watershed unique is the fact that it contains the only lake trout lake entirely within the city of Sudbury.

Besides people, the watershed is home to many species of wildlife including black bears, moose, deer, fox, beaver, muskrat, river otter, ducks, loons, herons, grouse, hares, owls, porcupines, and raccoons. Occasionally animals have been known to stray into residential areas near the conservation area, for example moose swimming in Lake Nepahwin, bears in backyards, and fox and geese on the Idylwylde property. The area immediately surrounding Bennett Lake is defined as a significant wildlife area. There is what appears to be a wildlife corridor that runs from south of Lake Laurentian, through Bennett Lake to north of Nepahwin Lake. Most of this corridor is contained within the watershed (shown in Map #5). Because this corridor runs through the golf course and beside some major roads, its presence has been considered when evaluating development projects such as the "South End" plan. This plan, done by the planning department of the city in 1992, contains alternatives for a possible second access to Laurentian University, some of which would disturb this corridor significantly. Knowing that these sensitive wildlife areas are in such close proximity to residential and high traffic zones, that these animals are actually our neighbors, should make us realize that as humans we alone do not own this watershed but share it with many other species. This fact is often forgotten in such an urban setting, where wild animals are not "supposed" to be.

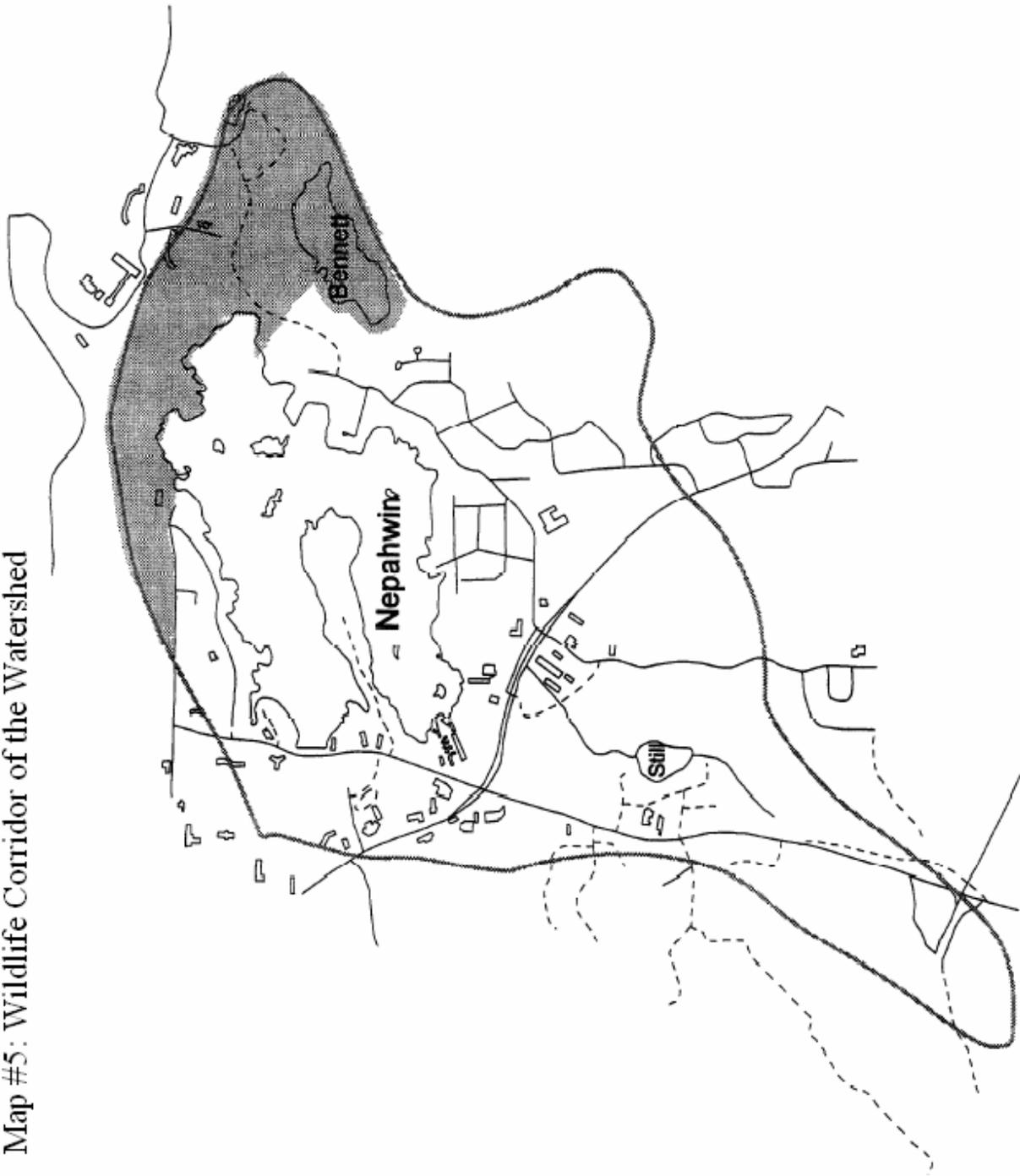


Map #3: Flow of Water and Location of Storm Sewers

Map #4: Ownership of Nepahwin's Islands

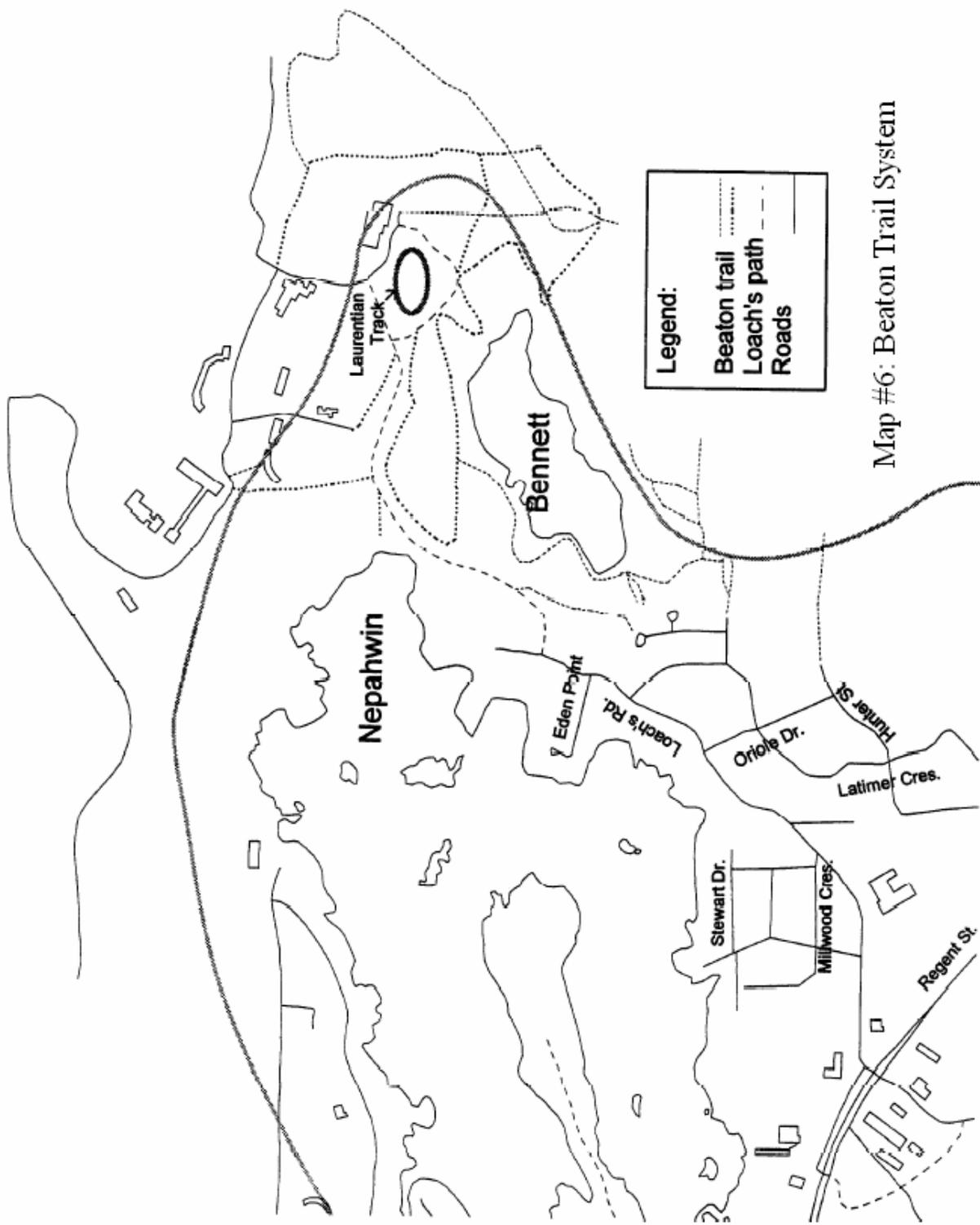


Map #5: Wildlife Corridor of the Watershed



The lake Laurentian Conservation Area and Laurentian University's property provide an extensive network of trails covering most of the 950 hectares of land encompassed by the conservation area. These trails are used extensively by residents and visitors for running, cycling, hiking, orienteering and skiing in the winter months. During the winter ski trails are also made on the Idylwylde Golf Course which link up with the Laurentian Trails. Those who use these trails must pay a membership fee for their upkeep. A map of the Beaton trail system which runs on the University property is shown in Map #6. The trail that runs from the end of Loach's Rd. to the University provides an important local link for residents from Lo-Ellen Park to access all these trails and Laurentian Beach. This trail is valued by the many residents who walk on it and the sports teams that use it for running, skiing and biking. The trail also provides a beautiful view of Lake Nepahwin from the cliffs adjacent to Laurentian Beach. For these reasons, local residents have frequently opposed any plans by the city to pave this path as a second road access to the University, and thanks to their perseverance the trail has remained a natural asset to the watershed.

While traveling on these nature trails, one notices the plentiful blueberries that grow within the watershed. During the 30's and 40's blueberries were picked for a living in the area where the University is now. (Source: Pers. Comm. Leo Roininen). Picking blueberries has always constituted a pastime of the people of this watershed, who can be found picking today especially in the area around Laurentian University and Bennett Lake. Boating is another popular hobby within the watershed. Originally canoes, sailboats and paddleboats dominated Nepahwin, but recently power boats and jet skis have become very popular. Whether Nepahwin is large enough to be able to handle the increasing number of large motorboats is a source of conflict among lake residents which will be addressed later. There is no boating activity on Bennett Lake because of its shallow depth and lack of access. In the other headwater lake, Still Lake, there are a few small boats which are used for fishing.



THE HISTORY OF DEVELOPMENT IN THE NEPAHWIN WATERSHED

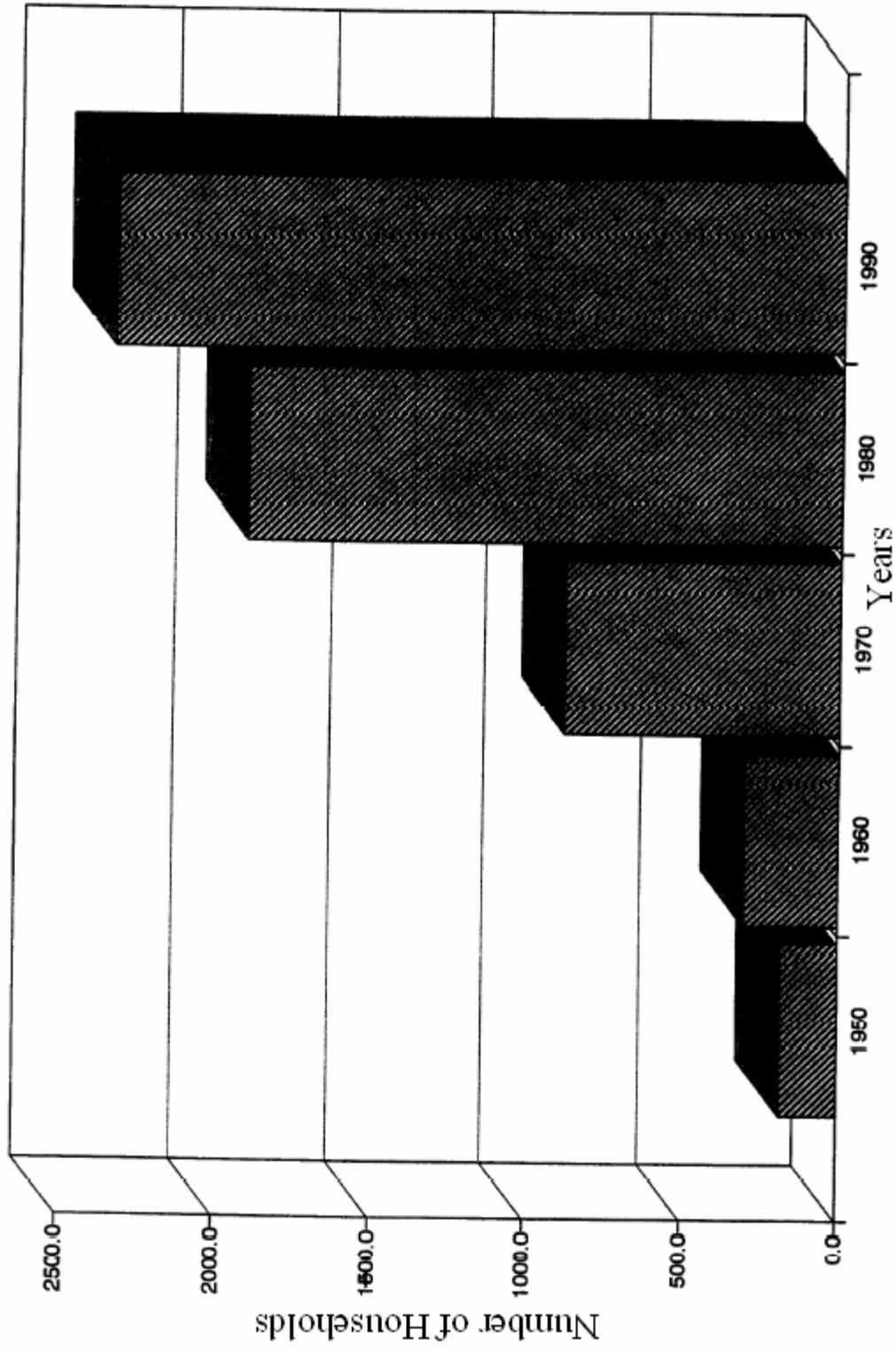
The past of the south end of the city is a rather recent one, and one whose focal point has been Nepahwin Lake. In its early days, when Sudbury was a young mining town, this area had what many might consider a rather sordid reputation, with many bootlegger houses and brothels. Development here was varied and sporadic and has no definite plan since it was not officially part of the city until 1960 (Source: article, "South Side on the Fringe – a rail town history" in the South Side Story, March 1994); Very few stores were situated in the watershed and there were no sewer or water services until the big building boom of the 1950's and 60's. To give an idea of the trend of the development in the watershed, Graphs 1 and 2 show how many households and businesses have been contained in the Nepahwin watershed over the years.

The virgin land around Nepahwin Lake was largely owned by three families, William Turcotte (bought in 1904), the Leckie family (1910), and Florence MacLeod (1923). During the first few decades in this century the watershed was largely forest with occasional summer homes and cottages and some farming activity. (Source: work in progress by Dr. Saarinen). The most well known farm in the area, that lay just outside the watershed, was the Bouchard dairy farm situated on the land along Regent St. between Telstar and Walford streets. The farm was started by George Bouchard in 1902 who used a horse and buggy to deliver milk to area residents. He actually helped to build MacLeod Rd. (now Walford), a separating road between his farm and the Gatchell dairy farm that stretched from Beverly St. to MacLeod St. The first farmhouse was a log cabin built by George Bouchard himself, and later a brick house was built which still stands today on Bouchard St. The farm closed in 1949-50, but some of the land is still owned by the Michel's (descendents of the Bouchards) where they own A & J Home Hardware and Gloria's Restaurant. The rest was sold off to create the surrounding subdivisions of Moonglow etc. (Source: Pers. Comm. Arnel Michel). During the 40's and 50's concern was rising about vegetation damage from smelter fumes. The earliest reference to sulphur fumes occurs in 1916 when area farmers were first complaining of crop damage. It was then suggested that perhaps the fumes could be bottled for commercial use (Source: Sudbury Star April 12, 1916). Such concerns led eventually to the building of the "Superstack" in the 1960's, which cut down on SO₂ damage considerably.

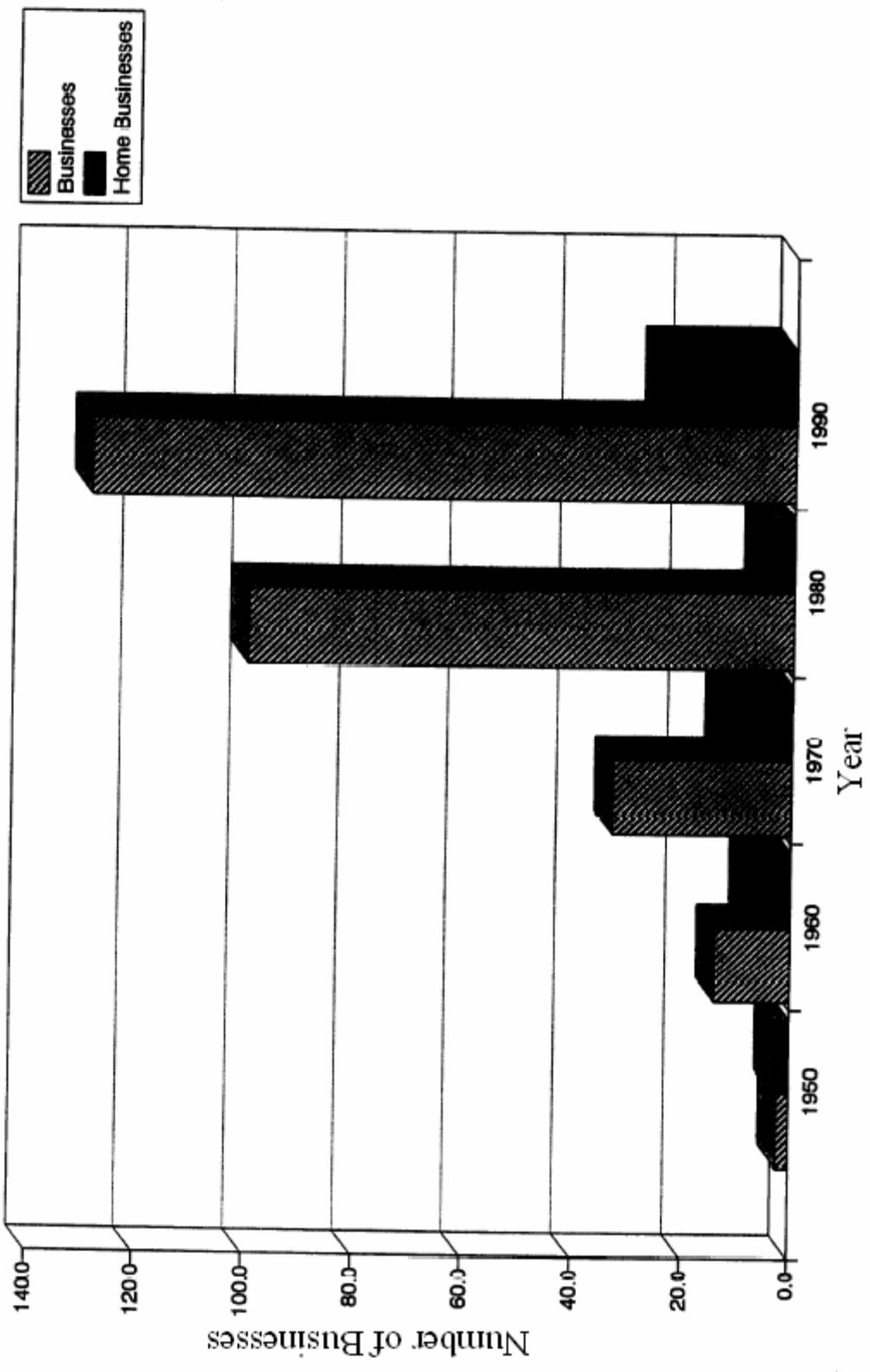
Other farms present at the same time were the Workman chicken farm situated in what was later Lo-Ellen Park (at the corner of Loach's and Oriole where the Workman family still lives) and the Hawtamaki farm (started in 1920) down Long Lake Rd. towards the south end of the watershed. The Toivonen farm was situated on St. Charles Lake and the Isrealson farm was situated on Still Lake, also in the southern part of the watershed. (Source: Pers. Comm. Arnel Michel). These farms were all dairy or chicken farms since the land of the watershed is not very fertile and rocky, therefore unsuitable for crops. Compared to the farms of Valley East, the south end farms were rather small but served local residents well.

Another early property owner of these pioneering days was Dr. Howey and his wife Florence. They came with the flow of people heading to the north in the late 1800's with the building of the Canadian Pacific Railroad that came through Sudbury. He worked as a doctor for the railroad in several northern communities before settling in Sudbury. They bought the land

Number of Households in the Lake Nepahwin Watershed



Number of Businesses in the Lake Nepahwin Watershed



between Ramsey Lake Rd. and the north shore of Nepahwin and built a house named the Idylwyld. The property was purchased from Dr. Howey and cleared in 1922, and the Idylwyld Gold and Country Club opened on April 26, 1924, with 9 holes. The original house on Ramsey Lake Rd. was the first clubhouse used which burned down on July 8, 1962 and a new building was built on Walford Rd. to replace it. The new building opened on July 20, 1963, and the event was quite a gala affair according to the Sudbury Star.

The activity in the watershed during the 1930's is closely associated with the migration of a Finnish community. Dr. Heikki Koljonen owned 3.5 acres on the lakeshore where Nepahwin Park is now and extending back towards the Caswell Hotel. He built a log house and a sauna on the property and lived there for a few years before returning to Finland with his family. In 1935 the land was sold to the Finnish Organization of Canada (FOC) to establish a club known as Tyon Puisto (Worker's Park). The land was cleared so that it could be used as a park. The original house was kept and converted into apartments where Anita Maki, a long time resident of the area, had lived with her family. A restaurant and dressing rooms for a newly expanded sauna, and cabins were built and rented out. There was also a bandshell and dancing platform were other features of the park, as Leo Roininen (a long time resident of Indian Rd.) recalls. He was one of the brave souls who used to dive off the three story diving tower built for the Alerts Athletic Club under the direction of Armas Lindberg, the Alert's swimming coach. Roininen affectionately describes the region at the time as a "Finnish ghetto", where Finns moved to pursue their traditional lifestyle and escape the rising taxes of the thriving city.

The Alert's Finnish Athletic club was established at the Nepahwin Lake shoreline in 1923 and had strong swimming, diving and track & field teams. They held many swimming and winter cross-country ski meets on the lake. The diving team used the famous diving platform which eventually had to be dismantled because of insurance regulations. A large track for the Alerts was also built behind where the Caswell Hotel is now, at the end of Wagner St.. In 1961 the track was sold because it could no longer afford the rising taxes in the south end. David Caswell bought the land in 1969 in order to build a hotel. (Source: Dr. Saarinen). For two weeks every summer there was a summer camp at the park put on for local Finn children, where Anita Maki was camper and counselor. Hikes were conducted on the Maki peninsula which was forested until the 1940's. The Alerts Athletic Club land was eventually sold to the city in 1971 after much negotiation under the condition that it be kept as a public park. (Source: South Side Story, Sept. 1993).

Subdivisions began to appear on Nepahwin Lake in the late 1930's and early 1940's, with the MacLeod subdivision on Maki Ave. opening in 1930 and one between MacLeod and Nepahwin Ave. owned by Harold and Elena Pernu in 1941. The Pernu property, which was previously used for farming chickens, extended to the corner of Paris and Nepahwin Ave. (Source: Pers. Comm. Norma Skuro). The eastern part of the Maki Peninsula was originally owned by the Sisters of the Diocese of Sault Ste. Marie from 1956 to 1971 (Source: Dr. Saarinen). Of the many brothels in the area, "Madame Pigeon's Blue Lantern" situated at the end of Nepahwin Ave., seems to be the best remembered. It was originally a Finnish tavern where one could eat fresh trout from Nepahwin Lake. Another local business of the time was the Koski Bros. Grocery (open from 1940-1960) located where the Casadolfo apartments stand today. Jodouin Ice storage stood beside the Koski Bros. at the same time and was owned by Rene

Lalonde, whose original downtown location opened in 1913. Several smaller locations later appeared around the city, such as the one at Bell Park on Ramsey Lake and the one on Nepahwin Lake.

The lack of water and sewer services in the area continued into the 1950's when there were still many summer homes and cottages still in the area, especially on Maki Ave. and Nepahwin Ave. The Lockerby area did not start to be identified as such until around 1949 when what was the McKim Post Office became the Lockerby Post Office and Fred Becking Taxi became Lockerby Taxi in 1957. The late 1950's saw the emergence of the Lo-Ellen subdivision in an area which had previously been only trees and a few small cottages and businesses. Loach's Rd. was mostly summer residences with a few small businesses. Then Lo-Ellen Park Secondary school opened in 1963-64 with a Sudbury Vocational School beside it. At the time there was no public access to the lake in the subdivision. So in 1966 a survey was done of six bays in Nepahwin Lake to find a suitable beach for public access, and the present property on Stewart Dr. was bought as a result. (Source: Sudbury Star, May 25, 1966)

With the expansion of the city of Sudbury in the 1950's, development further south was becoming vital to planning development. One recommendation that came up at this time was to construct a scenic highway (Hwy 69) entering the city from the south that would connect with the Trans-Canada highway. Construction of the section from Parry Sound to Sudbury that would complete the route from Sudbury to Toronto was finished in the fall of 1956. This new section allowed travelers from the south to come straight to Sudbury rather than take the previous route through North Bay. There was also a substantial building boom in the Nepahwin Lake watershed during the 1960's and 70's which saw many new houses on Walford Rd. and Nepahwin Ave. Many large apartment buildings also went up during the 1970's such as Stop 2100 on Regent St. South and the Ultramod on Paris St. The Paris Towers as part of the Rumball Terrace public housing development also appeared then. Parkview apartments, the Banyan and Birch Glen went up on Paris in the Lockerby area. Many new streets were built in Lo-Ellen Park, including Virginia Dr., Montel St., Delia Crt., Eden Point, Kaireen and Cerilli Court.

The 1980's seems to be the decade of the mall in the south end, when places like Southridge mall, Cedar Point Plaza and the Oaks Plaza appeared on Regent St. In 1990 Bel Lago Condominiums and Ascot Estates were erected on the lakeshore as well. But one building that did not get built was a development by Ponterio proposed for an 18-unit apartment building on Nepahwin that was strongly opposed by local residents. The regional planning committee eventually rejected the project because of population density, property values, additional traffic, and flora and fauna concerns. (Source: Sudbury Star, Sept. 3, 1992).

Presently, the Lake Nepahwin watershed is home to approximately 4973 people (Source: Regional Assessment 1994) and about 310 commercial enterprises (Source: 1994-95 Vernon's Directory). As a part of the south end it is still one of the fastest growing areas of the city. This development has many people, especially those living on the lake, worried about increased pollution and traffic on the water and throughout the watershed.

WATER QUALITY AND FISH

The Ministry of the Environment's first survey of Nepahwin Lake was done 1986. The pH of the lake was found to be 7.74 and the water moderately soft. The chloride levels were high (93.2 mg/L) compared with natural levels (about 2 mg/L) which was probably a result of road salting activities in the urbanized area. Copper (0.017 mg/L) and nickel (0.081 mg/L) levels exceeded the Ontario Ministry of the Environment and Energy objectives for the protection of all sensitive life forms (0.005 mg/L for Cu and 0.025 mg/L for Ni), likely because of Sudbury's history of mining and smelting activities.

A trend towards significant increases in conductivity was noticed in the 1986 study, which may be associated with stormwater drainage. This is even more of a concern today with increased urbanization and population in the area. The phosphorus levels were indicative of excellent water quality and no problematic weed growths were noted. Fecal coliform counts, which are indicative of sewage inputs, have been tested at Nepahwin park beach for at least the last thirty years by the Sudbury & District Health Unit. This beach has never been closed because of elevated e-coli levels and the results from the last few years indicate a healthy lake. (Source: Heather Bartram, Public Health Inspector with the Health Unit). Table 1 shows the results of some of the most recent water samples taken from Nepahwin Lake.

TABLE 1

	Winter 1990 (March)	Summer 1994 (June)	Winter 1996
pH	7.46	7.45	7.57
alkalinity	32.20	33.91	21.76
conductivity	531	575	572
calcium	21.40 mg/L	-----	20.3 mg/L
sodium	70.10 mg/L	-----	77.3 mg/L
potassium	5.67 mg/L	2.65 mg/L	2.76 mg/L
magnesium	6.80 mg/L	6.69 mg/L	6.72 mg/L
chloride	115.0 mg/L	-----	133.0 mg/L
sulphates (SO ₄)	30.22 mg/L	30.1 mg/L	31.0 mg/L
copper	17.0 ug/L	15.0 ug/L	-----
nickel	86.0 ug/L	110.0 ug/L	-----
lead	-----	5.0 ug/L	0.792 ug/L

Records of fish stocking by the Sudbury Trout Club in Nepahwin Lake can be found as early as 1921. The Sudbury Trout Club was a group of citizens that was concerned about the fishing status of area lakes (Sudbury Star, May 1, 1926). One of the activities of the Trout Club was to stock speckled trout in area waters. At the time Nepahwin Lake was mainly used by cottagers and farmers. An article in the Sudbury Star from 1924 states that the first evidence of the club's success came in the fall of 1923 when "for the first time in years ... trout was caught in the district". This does not say much for the health of the trout fisheries before this period. Stocking activity has continued through to this day and different organizations have taken part. Recent stoking efforts began with the stocking of 391 adult smallmouth bass by the Junior Rangers of the Ontario Ministry of Natural Resources. This was followed by the introduction of lake trout and splake, a hybrid between lake trout and speckled trout.

Table 2 shows the most recent stocking numbers for Nepahwin Lake.

TABLE 2

Year	Species	Number
1976	Smallmouth bass	391
1983	Splake	4118
1984	Splake	5000
1985	Splake	3600
1986	Splake	5000
1987	Splake	3000
1988	Splake	4000
1989	Lake trout	3000
1990	Splake, lake trout	3000, 3000
1991	Lake trout	3000

(Source: 1989-1990 Urban Lakes Survey – MNR).

Nine different species of fish now live in the lake. These following species were observed during the 1989 survey: brown bullhead, lake trout, pumpkinseed, rock bass, rainbow smelt, smallmouth bass, splake, white sucker, and yellow perch. All of these species are common to Sudbury lakes except rainbow smelt. The introduction of rainbow smelt was presumed to be caused by humans, perhaps accidentally by washing in the lake smelt fishing gear used in Georgian Bay. Rainbow smelt have been reported to detrimentally affect some native species in some lakes. Although it is not well documented that they have done so in Nepahwin Lake, the smelt nevertheless add another layer of competition between species within the lake.

The fish community in Nepahwin Lake attracts considerable angling interest, especially in the winter when there is increased access to the lake and when the salmonids are more vulnerable (Nepahwin Stocking Assessment, 1988 – MNR). The prime spots for fish spawning in Nepahwin Lake occur mostly around the bay at the golf course and between the points of Eden Point and Cerilli Crt. along Loach’s Rd. The nests occurring at the golf course site are mostly those of smallmouth bass and those along Loach’s Rd. are mostly Pumkinseed. (Source: Nepahwin Lake Survey, Ed Snucins, June 1989).

PUBLIC ACCESS

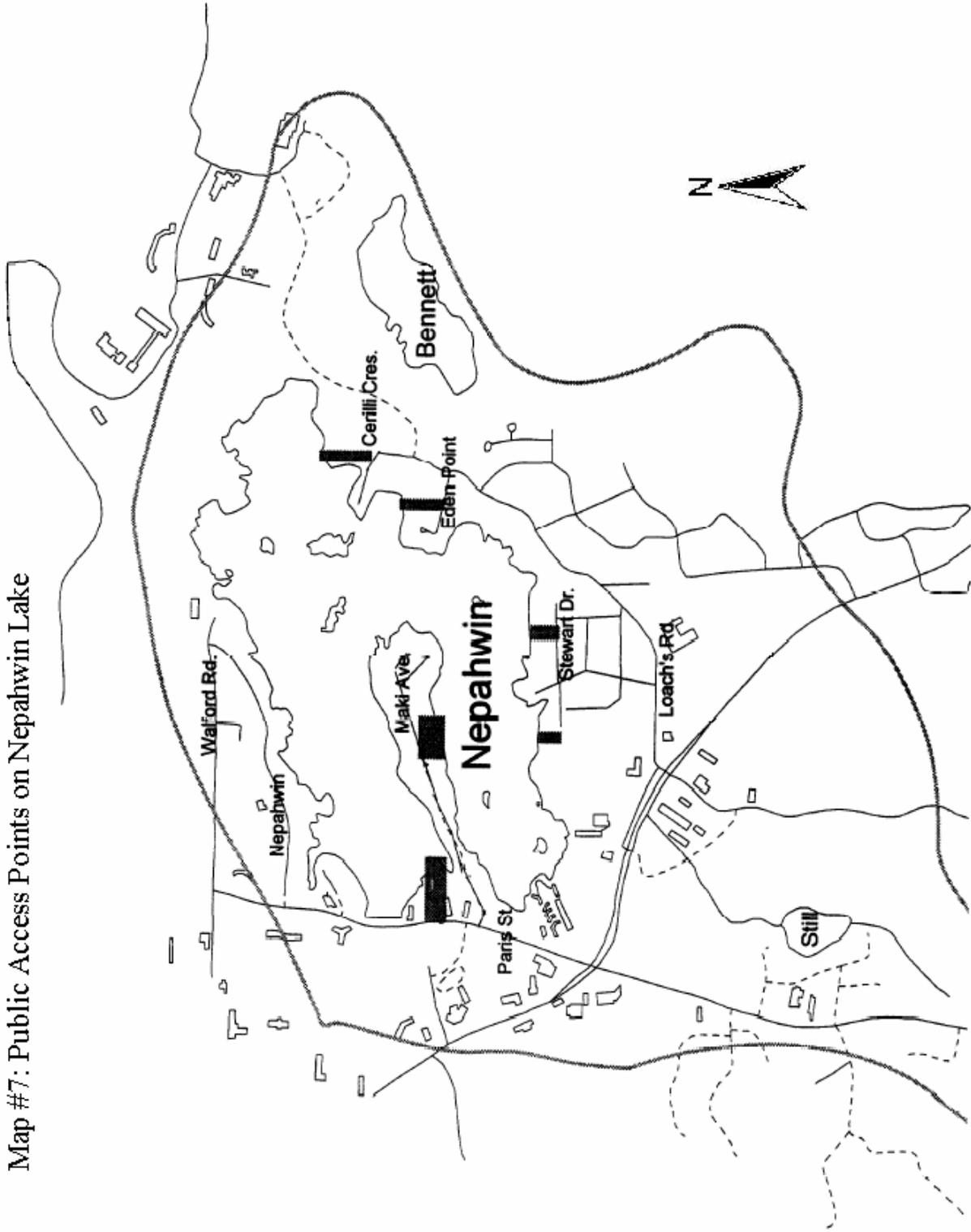
Public access to the lake occurs at several points on the lake, including Nepahwin Beach on Paris St. (owned by the city), Laurentian Beach on the East shore along the path to Laurentian University (owned by the University), and Stewart Dr. Beach in Lo-Ellen Park (owned by the city). In addition to these developed parklands, there are four other sites owned by the city and classified as undeveloped parkland that give access to the shoreline of Nepahwin Lake. These parcels of land are situated on Cerilli Court, at the end of Eden Point Dr., at the west end of Stewart Dr., and on the south side of Maki Ave. All of these public access points are shown on Map #7. Among all these waterfront parks, the most popular swimming spots remain the Nepahwin beach, Stewart Dr. beach, and Laurentian beach provide easy access and excellent swimming locations. The Maki Ave. and undeveloped Stewart Dr. lands consist of steep rock faces that provide good view sites but difficult access to the water. There is no access for boat launching by the public on Nepahwin Lake, with the exception that canoes can be carried from parking areas at the swimming beaches.

BENNETT AND STILL LAKES

In addition to Nepahwin Lake, there are two other smaller lakes within the watershed – Bennett and Still Lakes. Neither of these lakes has received much attention from the Ministry of Natural Resources in terms of surveys or water testing, so there is very little available information on their status.

Bennett Lake is an undeveloped lake on the University property situated between Nepahwin Lake and Lake Laurentian. It can be accessed through the trail that runs from Loach's road to the University sports complex. It is a shallow lake with a maximum depth of 2 meters, a surface area of 14 hectares, and a perimeter of 2 km. The outflow from Bennett Lake passes through a beaver pond (beside the Loach's road trail) before entering Nepahwin near the corner of Aspenwood St. The only fish species that is present in Bennett Lake is brook stickleback, with tadpoles, leeches and dragonflies also present. The lake is circum-neutral with a pH 6.67 and is dystrophic (highly coloured). There is a floating bog in the form of a ring around most of the lake and a few little islands of rock in the northeast corner. The lake does not appear to be used much by local residents. Some residents go there to pick blueberries and look for frogs and turtles in the pond, but many people in the area hardly know that the lake exists. (Source: 1991 Urban Lakes Study, MNR).

Map #7: Public Access Points on Nepahwin Lake



Still Lake is a small shallow lake that drains into the southeast end of Nepahwin Lake, located down Long Lake Rd. between Alice and Ester streets. The subdivision built around the one side of it is relatively new (built in the mid-seventies). Before the advent of this development, as far back as the 1930's and the 1920's, the land immediately surrounding this lake and beyond was used for a dairy farm (as mentioned earlier). In addition to the current surrounding subdivision, the lake is in close proximity to a fairly substantial industrial region. Still Lake is 3.1 hectares in surface area and has a maximum depth of 3 meters and 0.9 km of shoreline. Outside access to the lake is made difficult because of the urban development and absence of a boat launch, so it is unlikely that the lake receives any outside fishing pressure. According to the survey of Still Lake as part of the 1990 Urban Lakes Study, from which the data here is taken, there have been no records of previous surveys of the lake or chemistry work done. Records also indicated that Still Lake has never been stocked.

The fish community of the lake consists of yellow perch, pumpkinseed, golden shiners and pike. Still Lake is circum-neutral (pH 7.08) and both Copper and Nickel are above the levels recommended by the MOE, which can again be attributed to air pollution from area smelters. The lake is quite marshy with a lot of bulrushes on the undeveloped side of the lake. The west side is lined with houses and three docks. According to local residents, no one swims in the lake but some fishing may occur. Some of the lots have put in grass right down to the water, which raises concerns about fertilizers and pesticides running into the lake.

ENVIRONMENTAL CONCERNS AT THE IDYLYLWYLDE GOLF COURSE

The fact that the Idylwylde golf course borders directly on Nepahwin Lake creates potential for water quality problems because of pesticides and fertilizers used to maintain the grass. Fertilizers that have a high content of phosphorus and nitrogen can cause increased vegetation growth around the shoreline. However, at present there does not seem to be that much of a vegetation problem on the shoreline of the course as compared to some other more populated areas of the shoreline. According to Pat Simms, the course manager, Idylwylde now favors the use of slow release fertilizer rather than the kind previously used that tended to run off more easily and therefore required higher application rates. Simms says now he is experimenting with different types of fertilizers and pesticides from year to year in order to find the optimum growth rate. The fertilizer that was used this year is a natural organic 5.2.4 (Nitrogen-Phosphorus-Potassium) slow release fertilizer. Insecticide was not needed this year because insects in general are not a problem on the course, but cutworms are sometimes a nuisance according to Simms. He also sprays a flowable fungicide carrying the warning that it is toxic to animals and fish, and should not be sprayed where runoff can occur. Simms says that they are

careful not to spray near the shoreline or near the small pond from which water flows into Nepahwin. Iron is also sprayed occasionally for root growth enhancement and wetting agents (eg. Ivory Soap is a wetting agent) that are used to open the pores in the ground and help the water and nutrients stay in.

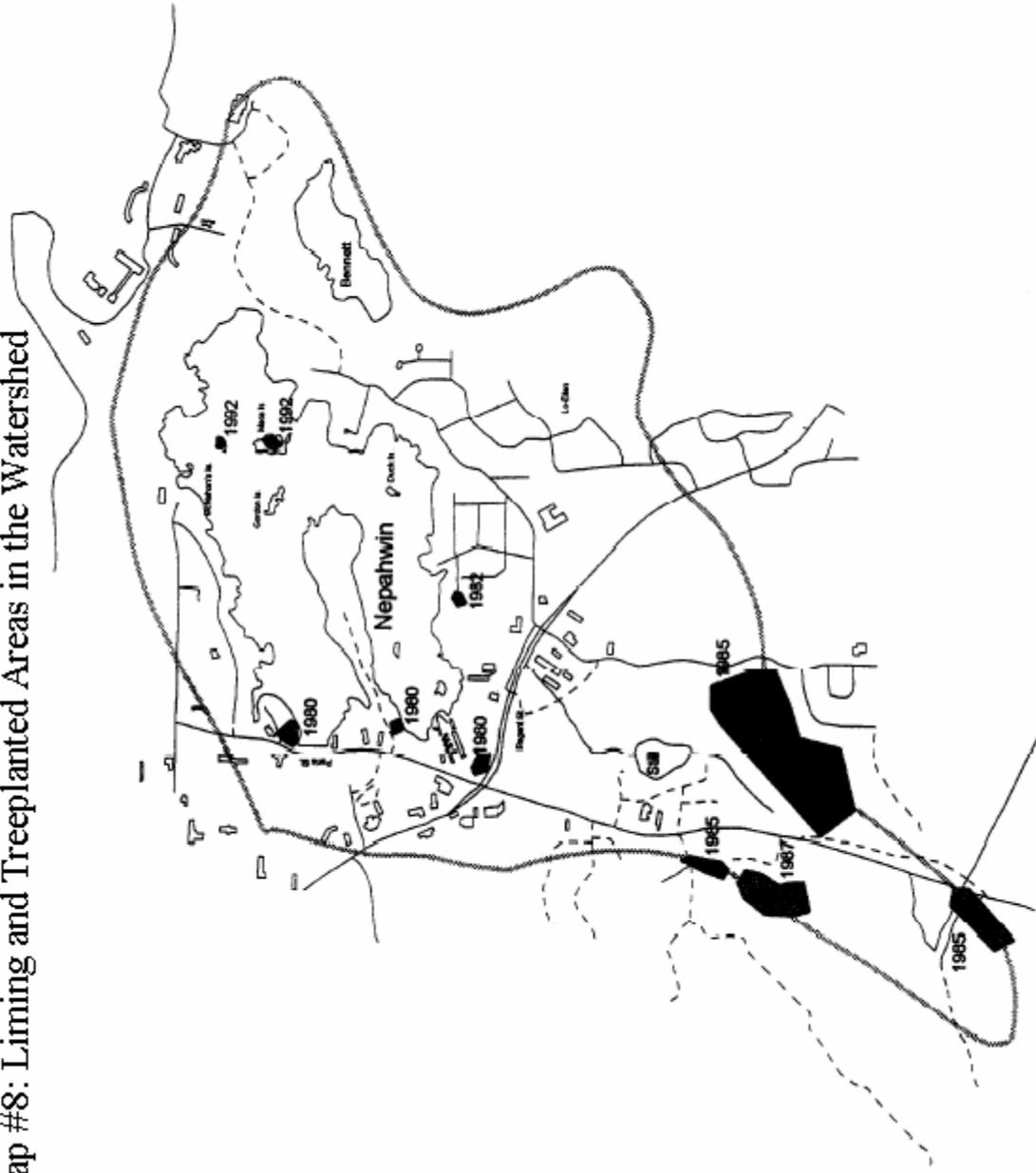
Simms argues that the gold course is less of an environmental risk in terms of chemicals than some of the private properties around the lake that use a lot of fertilizer. He is very careful to follow government regulations and says that he only uses $\frac{3}{4}$ of a pound of Nitrogen for the whole course per growing month (i.e. from May to Sept.). Most of his treatments are concentrated on the greens which Simms describes as, “the life of the club”. He is not aware of any water testing being done around the course’s shoreline, but a soil test was done this year that tested for nutrients and minerals as well as pH. The pH was found to be between 6.0 and 6.5 (slightly acidic) and the nutrient levels were normal. In terms of animals from the wildlife corridor that runs through part of the golf course, Sims has only seen a family of foxes that lived there last year and the numerous geese that populate and “leave their mark” on the shores. The two resident dogs seem to be very effective at frightening them away most of the time, but some of the braver ones still remain.

AIR POLLUTION CONCERNS

There has historically been substantial damage to crops and forests of the area from smelter air pollution. While there have been general studies done on SO₂ vegetation damage for the entire city, nothing specific has been done on the Nepahwin watershed. Since the watershed is not within the prevailing wind direction from the smelters, damage suffered in this area is considered rare in recent years according to John Negusanti of the Ministry of the Environment. The effects of SO₂ in this area are chronic rather than acute says Negusanti, for example trees suffer from poor soil (contaminated with metal and acid) and have smaller leaves. Most effects that are potentially injurious to vegetation have decreased over the past 20-30 years, especially after construction of the superstack at INCO.

Municipal land reclamation or regreening efforts occurred in the 1970’s and 1980’s in areas on the southern boundary of the watershed. Map #8 (Source: Dr. Peter Beckett) shows the specific areas where liming and tree planting have occurred. Most of these reclaimed areas have since been built on, so the benefits of these efforts have been minimized. It is also not known whether this liming has affected the water quality of the watershed. Recently, liming and tree planting has been conducted on some of the islands in Nepahwin Lake by Freshwater Ecology Unit staff to improve the vegetation cover and the appearance of these islands.

Map #8: Liming and Treeplanted Areas in the Watershed



SPILLS

There have been several significant incidents over the years that have threatened to affect the water quality of Nepahwin, such as oil and sewage spills. Some of these events have been documented in the Sudbury Star and by local residents. In the summer of 1956, a strange orangey-red oil soot-like substance covered at least four lakes in the south of Sudbury, Ramsey, Long, Trout (Nepahwin) and Pike lakes. It disappeared after a few days but it kept people from using the lake for a while. Samples were turned over to INCO's labs, whose furnaces were suspected as the cause for the particulate matter. This kind of deposition has appeared before in the region, but that summer it was especially bad and the soot covered lawns and fields as well. (Source: Sudbury Star, August 18 and 20, 1956).

In the summer of 1961, as part of the seasonal flooding, run-off water flooded sewer mains on Walford and Nepahwin Ave. and the excess fluid flowed into Nepahwin Lake (Sudbury Star, July 13, 1961). A similar incident happened in the spring of 1963 with the sewer mains on Miller Cres. (later Millwood) in Lo-Ellen Park. Strong chlorine was added this time to the lake as an emergency measure to prevent possible bacterial pollution. (Sudbury Star, March 29, 1963).

One of the first oil spills documented in the Sudbury Star was in 1966 when oil was coming into the lake from a ditch that ran from Highway 69 into the lake near 1789 Millwood Cres. City crews attempted to burn the accumulated oil from the surface but stopped when the flames threatened waterfront homes. At this time Nepahwin was still being considered as a drinking water reservoir for Ramsey Lake, and the Nickel District Conservation Authority had plans to join the two lakes by a pipeline. The cause of the oil seepage was thought to be local businesses situated down Highway 69 and these were ordered to take proper precautions. There was some concern in 1968 by the chief public health inspector, Jim Sandul about two sites on Nepahwin Lake near Paris St. that he deemed contaminated. He said that this contamination could easily be caused by road construction (since most of the dirt roads at the time were being paved) (Sudbury Star, June 12, 1968). The most recent oil spill that has occurred on Nepahwin Lake happened last year near the storm sewer that empties into the lake near Ascot estates on Paris St. No official investigation was done and no cause known. (Source: Pers. Comm. John Gerhard).

CURRENT ATTITUDES AND CONCERNS

Within the watershed, especially around Nepahwin Lake itself, there are a number of citizens concerned with the state of the ecosystem. Among these there have been three main groups formed over the years, the Nepahwin/Walford Ratepayers, the Maki Ave. Ratepayers, and the Lo-Ellen Ratepayers. These three groups got together in the spring of 1992 at Lo-Ellen Park Secondary school along with any others that were interested. There was a large turnout and many issues were addressed. Another successful meeting occurred at Lo-Ellen school on March 22, 1994 which focused upon the Regional Engineering's Class Environmental Study in which alternative second access roads to the University and the South Ramsey Lake Peninsula are discussed. The 200 residents that attended agreed that any of the road alternatives would have serious negative impact on the area and passed a motion opposed to the construction of a second access road. (Source: South Side Story, May 1994).

Large powerboats and seadoos are also a great concern to people living on the lake, most feel that they should not be allowed on such a small lake. Some say there should at least be a time restriction upon their use because of the noise they produce. Another related problem noticed near the shore is oil and gas from the boats. John Gerhard, president of the condominium association at Ascot Estates on Paris St., also mentioned the concern of silt coming in through the storm sewers and the apparent increase of weeds around the shoreline in the past few years. Because of lack of a catch basin on some of the storm sewers, everything in them goes directly into the lake. He says that his group would like to enter into a cost sharing program with the city to build a catch basin for the storm sewer that is situated beside the Ascot complex.

Ron Larwood of the Lo-Ellen Ratepayers cites similar concerns as those above, adding that his group as well would like to see powerboats and seadoos restricted in size and power. They feel that more public education on safety and perhaps an age restriction for driving boats are needed. Another concern of the group is getting people to respect natural areas and not to litter, glass being a particular problem at beaches. Regreening of developed areas is also something that Larwood says should be built right into development plans. He is very disappointed, for example, with the present barrenness of the recent development on Maki peninsula which previously had a substantial number of birch trees. He also notes that the loons that resided around the peninsula disappeared after the housing development began. A final concern that he cites has to do with the path from Loach's Rd. to Laurentian University. Larwood says that a lot of people fail to clean up after their pets. This practice soils the paths and beaches, and threatens water quality and public health. This issue is currently being discussed by the Lo-Ellen Ratepayers and plans are being made for public education efforts.

THE FUTURE OF THE WATERSHED

Nepahwin Lake still has a rather healthy watershed compared to some of the other more badly damaged areas of the Sudbury area, but with a rising population and development in the south end it may not remain this way. The data studied here indicates that the quality of water is presently reasonably good, but also that the occurrences of silt running off the roads and oil spills threaten to worsen this quality. Perhaps the trend towards worse environmental conditions may seem inevitable due to the large number of people now living in the watershed, but there are definite preventative measures that can be taken by all those who live here. One recommendation that I would suggest, based on the number of spills that have occurred in Nepahwin Lake from the storm sewers, is that there should be a closer watch on what goes into these sewers and verifying that all outlets have catch basins. It is important that small changes be made in our habits as a watershed community before things get bad (as is usually the case with environmental crises). The positive actions of the Ratepayers are very encouraging and hopefully more action will be taken in the future. As this report demonstrates, the Nepahwin watershed is a multi-faceted region with a rich history that should be valued, protected and restored to even greater health.

REFERENCES

Ball, Jeff (Dept. of Names, MNR, Toronto) – provided data on history of Nepahwin Lake's name.

Bartram, Heather (Environmental Health Dept., Sudbury and District Health Unit) – provided data on fecal coliform levels at Nepahwin Beach from 1993-1996.

Beckett, Dr. Peter (Biology professor at Laurentian University) – provided data on liming and treeplanting in the watershed.

Beihl, Janet (Legal Dept., City of Sudbury) – provided access to the Assessment Records of 1910-1930.

Craig, Ellen (longtime resident of south end), Pers. Comm.

Davison, Phyllis (president of the Nepahwin/Walford Ratepayers) – provided meeting minutes and background information on the work done by the group.

Gerhard, John (president of the Ascot Estates Condominium Association), Pers. Comm.

Larwood, Ron (active member of Lo-Ellen Ratepayers), Pers. Comm.

Long Range Planning Section, Dept. of Planning and Development, Regional Municipality of Sudbury. "Regional Assessment 1994".

Long Range Planning Section, Dept. of Planning and Development, Regional Municipality of Sudbury. "South End Plan", 1995.

Michel, Arnel (owner of A&J Hardware on Bouchard St. and grandson of George Bouchard who owned the farm maintained previously on the land), Pers. Comm.

Ministry of Natural Resources. "Nepahwin Stocking Assessment", 1988.

Ministry of Natural Resources. "Urban Lakes Survey", 1989-90.

Myslik, G. (Ministry of the Environment) "Lake Nepahwin Water Quality Survey", 1986.

Nash, Chris (president of the Maki Ratepayers), Pers. Comm.

Negusanti, John (Ministry of the Environment) – provided commentary on the air quality within the Nepahwin watershed.

Nickel District Conservation Authority – provided Aerial Photos of the area in 1957, 1964, and 1980.

Roininen, Leo (longtime resident of Indian Rd.), Pers. Comm.

Saarinen, Dr. (History professor at Laurentian University), work in progress on Finnish settlement on Nepahwin Lake.

Simms, Pat (course manager at the Idylwyld Golf Club) – provided information on the chemicals used and maintenance procedures.

Skury, Norma (longtime resident of Nepahwin Ave.), Pers. Comm.

Snucins, Ed. “Nepahwin Lake Survey”, 1989.

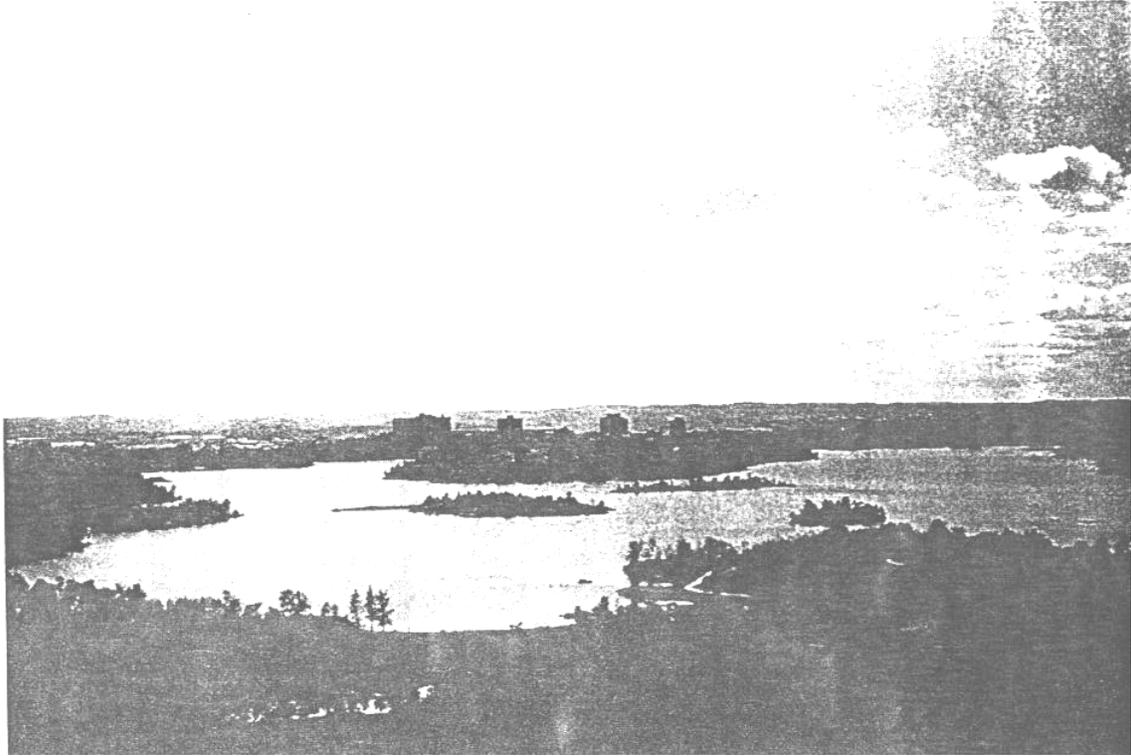
The South Side Story – newspaper published monthly for the residents of the south end since the late 1980’s.

The Sudbury Start – newspaper published daily from the late 1890’s.

“Vernon’s Directories – Sudbury” from 1920 – 1994/95, Vernon Directories Ltd., D.G. Seldon Printing Ltd., Hamilton.

APPENDIX – PHOTOS

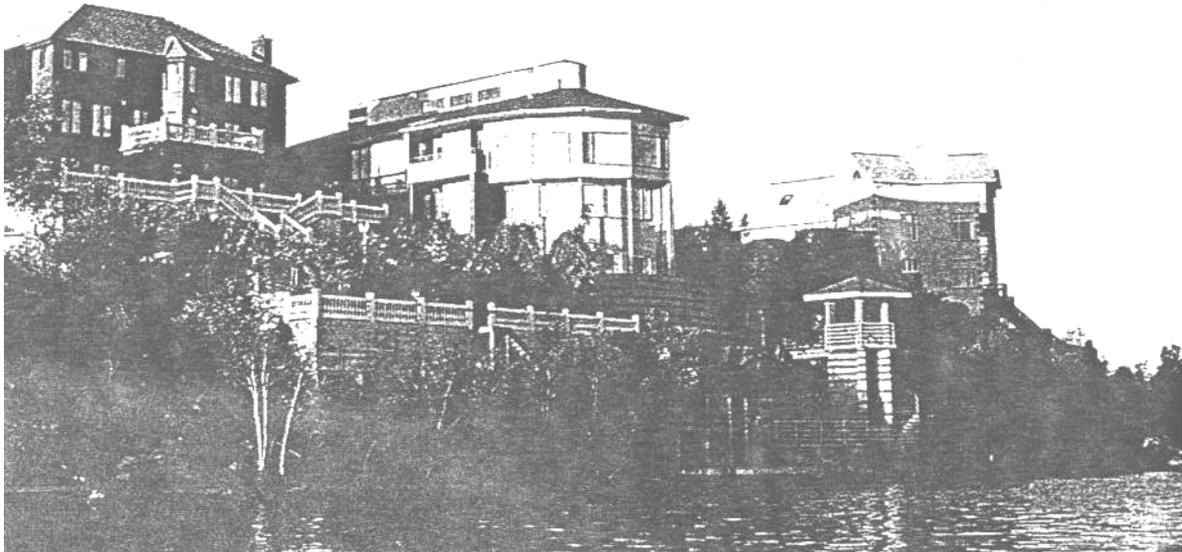
Nepahwin Lake in the south end of Sudbury



Nepahwin Park



Housing development along the Maki Avenue peninsula



Bennett Lake, a headwater lake within the Nepahwin watershed



Industrial development in the southern part of Nepahwin Lake watershed



Still lake, a small headwater lake that drains into Nepahwin

