

ARTICLE II, SECTION 27
OF
ST. LOUIS COUNTY,
MINNESOTA
ORDINANCE #27



BURNTSIDE LAKE
COMPREHENSIVE LAND USE

PLAN

LAND USE PLAN FOR BURNTSIDE LAKE

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LAND USE PLAN FOR BURNTSIDE LAKE

Note: Sections 1 and 2 of this document provide background information for the plan but it will not be adopted. Sections 3,4,5, and 6 are being considered for adoption into the County land use plan ordinance. *Those sections are in italics.*

SECTION 1: INTRODUCTION

This is a comprehensive land use and lake management plan for Burntside Lake. It is the first major step in an overall mission to protect and maintain existing water quality of the entirety of the Burntside watershed.

Burntside Lake is a particularly fragile oligotrophic lake that supports a cold water fishery, is used as a drinking water source, and is classified as an Outstanding Resource Value Water. Nonpoint sources are the primary sources of nutrients for the lake, including atmospheric deposition, leachate from septic systems, and runoff from developments, silviculture, pesticides and fertilizers. To maintain existing water quality, it is critical to minimize nutrients from existing and new developments in the watershed.

The purpose of this Plan is to (1) improve development and individual management practices of lake shore property owners; (2) enhance resource productivity and environmental qualities and aesthetics of the lake and watershed; and (3) enhance quality of life of each resident in the watershed and visitor to the lake.

The goal of this Plan is to ensure that Burntside Lake maintains its exceptional water quality by balancing environmental protection, economic growth, and the social needs of the people through sustainable land use management and lake planning.

In this document, "County" refers to St. Louis County, "State" refers to the State of Minnesota, "MDNR" refers to the Minnesota Department of Natural Resources, "MPCA" refers to the Minnesota Pollution Control Agency, "BPOA" refers to the Burntside Property Owners Association, and "Plan" refers to this document.

The Planning Process

In August of 1998, the Burntside Property Owners Association voted unanimously to pursue a rezoning plan for Burntside Lake. Six members volunteered to research the issues in regard to zoning and planned development on the lake. With the help of the St. Louis County Planning Department, these committee members looked into road access, history, cultural sites, septic compliance, current development, soil conditions and numerous other factors. They conducted interviews with county, state and federal employees. They met monthly to compare notes, and reported findings twice a year to the 14 members of the Association's Board of Directors. There was lively debate at the next four board meetings, each ending with suggestions and direction for the committee.

Starting with the summer 1998 edition of the association's semi-annual newsletter, information

on rezoning was mailed to all property owners with current addresses, as well as members. The newsletters informed the Burntside property owners of the rezoning process and progress. Due largely to the three previous newsletters, the 1999 association meeting had a record turnout and included lengthy discussion on the benefits and issues of rezoning.

The association made its written proposal to Morse Township and St. Louis County in June of 2000. There followed public hearings before the Morse Township Land Board, the Morse Township Supervisors, and the St. Louis County Planning Commissioners. These hearings led to substantive changes which were presented to the association members at the August, 2000 annual meeting. After prolonged discussion and debate, and a few wording changes, the rezoning plan was approved unanimously by the association, two years after the initial resolution to proceed. The result is a unique land use plan for a very unique lake.

Prior to this rezoning, the entire lake was designated Shoreland Mixed Use 7, calling for 150 foot widths and 1.00 acre lots. Under the land use plan that follows, the majority of Burntside is rezoned to Residential 5, calling for 200 foot widths and 2.50 acre lots in conformity with the low density residential policies of this plan. There is no change to the existing commercial developments on the lake. The only change to the existing subdivided plats is in regard to the use designation - these subdivisions are rezoned to Residential 7. One small island is rezoned to Sensitive 5 due to Indian burial grounds, and two areas of special importance to the health of the lake are rezoned to Residential 1. There is an abundance of undeveloped privately owned land on Burntside, and these zoning rules allow for an increase in the number of developed tracts from the 388 that exist today to approximately 1,100.

The land use plan calls for no new industrial uses within the watershed, no net loss of vegetation within the shore impact zone, and no loss of wetlands within the shoreland area. New restrictions are added to Planned Unit Developments on Burntside Lake. There is a provision allowing certain nonconforming principal structures to rebuild after catastrophic loss, and a provision encouraging the granting of a variance when there is a net benefit to the lake.

SECTION 2: BURNTSIDE LAKE DATA

A. HISTORY AND CULTURAL IMPORTANCE

The lake's first human occupants were a succession of native peoples. Artifacts found in the area have established the presence of at least three prehistoric cultures. The lake was not only home to these people, but it also lay on a main travel route between Vermilion and Basswood Lakes. Many of the portages linking Burntside to nearby waterways are centuries old, having first been established and maintained by generations of native people. The most recent of the native peoples to inhabit the region left historic records visible today. Notable among these are the rock paintings in the East Arm and the burial grounds on Indian Island in the central area. Indian Island was still home to Burntside Ojibwa families early in the twentieth century.

European visitors to the Burntside area first came in search of furs and lumber. Today, evidence can be found on the lake of the extensive logging operations that began in the late nineteenth

century and continued throughout three decades. Several logging camps were located on Burntside shores during this period--a notable site lies in School Section Bay in the central part of the lake. The submerged remains of the log-boom tugboat "Bull of the Woods", with its rusty boiler exposed above the water line, is still an attraction in Hoist Bay in the West Arm. Remnants of the log flumes built along the Burntside River can be visited by canoeists on an afternoon paddle.

From the beginning of the non-native settlement of the Ely area, Burntside has been highly valued for its scenic beauty and as a desirable tourist destination. The first cabins were built in the late 1800s; some are still standing.

The lake became accessible by road in the early 1900's, and soon thereafter, resorts and tourist facilities were planned. Burntside Lodge, the first of these, was begun in 1913. The imposing lakeside main building has been largely unchanged by successive modernization. It remains the centerpiece of this historic resort, and is listed on the National Registry of Historic Places.

Camp Van Vac also dates from the early period of Burntside development. Constructed over a span of two decades, this resort features a variety of log and unusual rock-wall cabins built by a local team of Finnish builders. This team also built many private cabins throughout the lake, using the same construction techniques. Although log construction has continued to be popular throughout the area in recent years, rock-wall construction using native stone has not seen such a revival. Burntside is home to many fine examples of this now extinct craftsmanship.

The West Arm is the location of Listening Point, site of the log cabin retreat of Ely's renowned naturalist, Sigurd Olson (1899-1982). Olson, a tireless advocate of wilderness preservation, wrote extensively of his outdoors and wilderness experiences. Many of these that centered around his beloved Burntside home were collected in his 1958 book, Listening Point. The property is now managed by a nonprofit foundation to preserve the site for the enjoyment and inspiration of future generations.

Burntside Lake was listed in the MPCA's "Waters of Concern" in Minnesota Rules Chapter 7050 (part 7050.0470) because it is one of the few lakes in Minnesota to support a natural cold water fishery.

Burntside Lake is a designated Trout Lake, classified an Outstanding Resource Value Water, and serves as a source of drinking water for the City of Ely, all of which require protection of existing water quality.

The lake is situated partially (about 90%) within the Burntside State Forest and wholly within the Superior National Forest.

The lake contains two entry points and lies adjacent to the Boundary Waters Canoe Area Wilderness. (Entry No. 4 going to Crab Lake and Entry No. 6 leading to Slim Lake)

B. ROAD ACCESS

County roads provide the bulk of road access to the lake. Grant-McMahan Boulevard (paved, CR 88) services much of the South Shore. Echo Trail (paved, CR 116) services the East End and North Arm. Wolf Lake Road (part-paved, CR 404) services the Southwest Shore of the lake. These three roads wind through beautiful and mostly unspoiled countryside, with a minimum or no obtrusive signage, advertisements and such. The Northwest Shore of the lake is a roadless area.

Feeder roads off of these three gateways provide almost complete coverage to the south and east shores of the lake. Among the largest feeders are Van Vac Road (paved, County Rd 404) and Passi Road (paved, County Rd 803). North Arm Road (part-paved, CR 644) provides almost complete coverage to the west shore of the North Arm.

The County and Morse Township do an excellent job of maintenance and plowing. All the feeder roads wind through scenic hills and rock outcroppings, marshes, and pine or birch forests. The journey to the lake is unspoiled, often with glimpses of the lake or another lake or river. The journey itself can be a wonder, tantalizing visitors with the prospect of arrival at the lake.

A map depicting the gateways and feeder roads is attached as Appendix 3.

C. PUBLIC BOAT ACCESS

According to the MDNR, there were two public boat accesses on the lake in 1986. Today there are five public accesses on Burntside Lake. The largest and newest is on Van Vac Road on the south shore. Another centrally located public access is at Burntside Lodge located off of Highway 88, again on the south shore. These two ramps are the most heavily used on the lake. The third public access is on the West End off of Wolf Lake Road. The fourth public access is located on the East End, at the end of Passi Road off the Echo Trail. The fifth designated public access is located on the North Arm Road off of Echo Trail, and is used infrequently.

A map depicting the locations of the public boat accesses is included in Appendix 3.

D. TOURISM

Burntside is a beautiful place to sightsee, fish, and picnic, and it's been a favorite destination since the late 1800's. The lake attracts vacationers, boaters, swimmers, scuba divers, and even a beer company, which advertised "from the land of sky blue waters" and filmed commercials on Burntside.

The Duluth News Tribune rated Burntside as second best in the State for lunker lake trout. Minnesota Monthly said, "The excellent fishing has lured many guests, including Hubert Humphrey and Walter Mondale." Midwest Living voted Burntside Lodge as one of its "15 Best Wilderness Getaways". The Ely Summer Times 2000, a seasonal guide book published by Ely businesses, advertises Burntside as a "Back Country Getaway – All the comforts of Wilderness" and goes on to say "Judging by real estate prices, this is the most popular lake in the Ely area for building a home or seasonal cabin. And no wonder – it has incredibly clear water, pine covered islands loaded with blueberries, and a granite shoreline perfect for swimming."

On the west and north sides of the lake, concentrations of Federal, State and County-owned lands create the destination of choice for sightseeing. One-half of the lake is essentially a wilderness area accessible by motor boat without the need of a permit. The beauty of Burntside Lake is found here. This is the draw, along with clear waters and good fishing, that brings visitors from around the world to the lake's resorts.

E. BURNTSIDE LAKE BASIN DATA

1. Topography.

Burntside Lake is located three miles northwest of the City of Ely. Surface area of the lake is approximately 10,236 acres, which places it in the top 0.4 percent of lakes in the State in terms of size. It is a large, infertile lake with a rocky shoreline of about 74 miles. The lake has an irregular bottom, a mean depth of 49 feet and a maximum depth of 157 feet. The only outlet for the lake is Burntside River, located in Outlet Bay.

The small watershed of the lake (50 square miles) is a bedrock basin comprised of an early Precambrian igneous and metamorphic rock complex. In simpler terms, the bedrock is hard, and resists erosion and leaching by surface water. This bedrock accentuates and channels storm water and other surface water runoff. Steep slopes characterize the shoreland area and 125-150 islands and bluffs, with many areas showing exposed, glaciated bedrock.

When viewed from the lake, the shoreline rises steeply into a series of hills or watershed ridges, interspersed at very wide distances by small lowland marshes and creeks. In many areas, this steep rise climbs to the peak of the watershed within a few hundred feet of the lake. The highly visible Burntside Fault (a favorite of local geology professors) helped create one such ridge running along the length of the south shore.

2. Historical Lake Levels.

MDNR has historic water levels for Burntside Lake dating back to 1939, showing water level fluctuations of 4.63 feet. A loose rock dam in the single outlet channel controls outflow to Shagawa Lake and eventually to the Rainy River Watershed. Burntside Lake is downstream of Twin, Everett, Fenske, Slim, Rice, Crab, Clark and Tamarack Lakes.

3. Aquatic Vegetation.

The bedrock basin of Burntside Lake is characterized by a rocky shoreline that drops off quickly and includes very few shallow bays. The small amount of vegetation present is found in those few shallow bays, and is further limited by a lack of chemical nutrients in the water and the short growing season.

4. Wetlands.

Wetlands are natural filters of nutrients and they slow down and clean up vast quantities of storm water runoff that is high in phosphorus and other unwanted particles and chemicals. Due to its small watershed and steep slopes, the Burntside watershed has very few wetland areas (see the County's Wetland and Watershed map dated July 29, 1999 for Burntside Lake and Surrounding Area). It is critical that all the wetlands within the shoreland area remain viable and intact, and it is therefore the policy of this Plan that there be "no loss" of wetlands. This is different from "no net loss". No loss means there shall be no filling, dredging or damage to any Burntside wetland in the shoreland area.

5. Soil Conditions.

BPOA studied draft mapping of Burntside-area soil conditions prepared over the past 25 years by the U.S. Forest Service and the U.S. Natural Resource Conservation Service. Soil thickness varies around the lake from zero to over 40 inches. Camp Widjiwagen, for example, is built upon a Rainy Outwash Plains terrace, which is characterized by less than 20 inches sandy loam or loamy sand on top of over 40 inches of gravelly coarse sand. Another rather large terrace is located on the far East End where Pete's Burntside Park Plat, Echo Trail Lodge and Anderson's Resort are located. Slopes on these terraces vary - Camp Widjiwagen's slope is 0-6%, while the East End's terrace has a slope of 18-35%. Outwash terraces are well drained and make fine gravel pits, and in fact, there are two gravel pits located near the above resorts. Outwash terraces are rare on Burntside but can be found scattered around the lake. Since they make fine building spots, the outwash terraces on Burntside are heavily developed (outwash terraces can drain too fast for septic systems if not located properly, as they can be 75% sand).

Litner Point (heavily developed) and large stretches of the east side of the North Arm (undeveloped), for example, are Ground Moraines, defined as well-drained, sandy loam or loam 8 inches deep over bedrock, occurring on ridge tops and upper slope positions. Bedrock outcropping can range from 5-50%, making it difficult to build and even harder to find suitable locations for traditional mound septic systems. Ground moraines and the slightly thicker (8-20 inches) regular moraines are commonly found around the lake. Significantly, several of the platted subdivisions on the lake with one-acre lots are located on ground moraines or regular moraines with a slope of 18-35%. These small-lot subdivision areas are undesirable for mound systems due to the thinness of the soil over bedrock and the degree of slope.

Long stretches of the South Shore between developed areas and large portions of many of the islands have little or no soil and 18-60% slopes. These areas are mapped as Quetico rock outcroppings. Future development here would likely fall under the bluff ordinances. Septic requirements would require pumping to a remote location that has sufficient soil, or the installation of a performance standard system.

Burntside has a long history of development and the best lands are already developed. What's left is often marginal lands such as the Quetico outcroppings, and new development will likely take place on poorly suited lands. The pressure to develop new lands is a primary reason for rezoning to larger spacing. Larger lot size will help ensure that new housing will have options on where to build, where to drill a well and where to

place the septic system. For Tier Two development, there is an even greater need for these options because around Burntside the upper slopes and ridge tops have the most rock outcroppings and poorest soil conditions.

6. Loons and Other Nongame Habitat.

Burntside Lake supports one of the largest loon populations in the State. According to MDNR, eleven lakes studied in St. Louis County in 1998 had loon counts of 29 adults and 8 chicks combined. The twelfth lake, Burntside, had 57 adults and 13 chicks, more than the other eleven lakes combined. BPOA has coordinated the annual loon count on Burntside the past several years, using up to 18 volunteers at a time. We forward the information annually to MDNR's Nongame Wildlife Program and the LoonWatch Program at the Sigurd Olson Environmental Institute at Northland College in Ashland, Wisconsin. Recent results are as follows:

<u>Year</u>	<u># Adults</u>	<u># Chicks</u>
1996	43	11
1997	33	11
1998	57	13
1999	45	6
2000	37	10

Loons normally build their nests on or within three feet of the shoreline in undeveloped areas. The destruction of preferred nest sites by shoreline development has been shown to affect breeding success. Studies conducted in Michigan and Ontario found that shoreline development was directly linked to lower reproductive success. Burntside is blessed with an abundance of public, undeveloped shoreline, which will provide continuity in breeding success on the lake. Further, two MDNR Scientific and Natural Areas (Snellman and Pine Islands) were donated to the State by The Nature Conservancy, and two Burntside property owners have contributed conservation easements to the State, further ensuring that the visitors and users of Burntside will continue to thrill at the call of wild loons.

The importance of these undeveloped public and private lands cannot be understated. It has been shown that despite regulations and education on Best Management Practices, almost all large woody debris and fallen trees on-shore and near-shore are removed in developed areas. Woody debris and buffer strips provide breeding, feeding and protective areas for all sorts of game and non-game species, from fish and dragonfly larvae to mink and skinks. Buffer strips filter out nutrients before they reach the lake and help control storm water runoff and erosion. This is extremely important on Burntside with its steep slopes and shallow soils. Buffer strips also provide a measure of aesthetics to the lake. The screening of structures from view, whether Tier One or Tier Two, bluff or non-bluff, is a desirable goal on a semi-wilderness lake such as Burntside. Screening adds to the "amenities effect" or desirability of the lake.

BPOA will continue to educate property owners on the importance of preserving habitat

and buffer strips. But, it will require progressively stricter enforcement to convince some landowners. We call on the County to consider mandatory buffer strips on all variances and building permits on Burntside, and for strict enforcement of the vegetative cutting rules and all other zoning ordinances on Burntside Lake.

7. Fisheries and Fish Habitat.

Burntside Lake is a designated Trout Lake. It is one of only a few lakes in the County to support a coldwater fishery. The lake is renowned for its big lake trout and walleye and anglers come from across the nation to try and catch them. The MDNR notes in several published reports that lake trout and walleye in Burntside are above average in numbers and size for this class of lake. The lake's importance as a fishery is indicated by MDNR's stocking program. Over one million fry were stocked in Burntside in 1980, 1981, 1982, 1983 and 1986, with lesser amounts of yearlings, fingerlings and adults stocked in the lake every year since.

The MDNR's 1995 Fishery Status Report, attached as Appendix 4, classifies Burntside Lake as a Class 2 lake. As stated in the report: "By statewide standards Class 2 lakes are large, deep, have steep shorelines, have complex shoreline shapes, and have soft (unproductive) and clear water." The report goes on to say "These lakes are especially vulnerable to nutrient inputs like phosphorus because increased plant and animal biomass would ultimately result in the consumption of the oxygen in the lower layer and doom the cold water fish species. We support efforts on Burntside Lake to upgrade lakeside septic systems and strongly urge residents within the watershed not to use lawn fertilizers."

According to the MDNR (see letter attached as Appendix 5), it is also important on Burntside to protect the rocky reefs and shallow, marshy bays in order to preserve spawning beds. BPOA has identified three consecutive bays (Furaganger Bay, School Section Bay, and Crab Creek Bay) and the rocky reefs lying between these bays as most deserving of protection. This area is accordingly rezoned to Residential 1. Similarly, the mouth of Dead River, a freshwater estuary, is deemed critical habitat, and rezoned to Residential 1 to limit development pressure.

8. Water Quality.

In the MPCA's 1994 Lake Assessment Program on Burntside Lake, the scientist who conducted the water tests made subjective measures of the physical appearance and recreational suitability of the lake water. We quote from the 1995 write-up (attached hereto as Appendix 2): "From June through September, the observer characterized the physical condition of Burntside Lake as 'crystal clear' and recreational suitability as 'beautiful, could not be nicer' on all dates." The primary goal of this Plan is to keep it that way.

According to MPCA, Burntside Lake is an Oligotrophic lake, or a very clear, deep and pristine lake. The 'trophic' state represents levels of nutrients in a lake. The size of the watershed and amount of land-disturbing activities in that watershed are two fundamental

factors that affect trophic state. By definition, Oligotrophic lakes have low inputs of nutrients, organic matter and sediments, and are often cold water lakes (able to sustain trout). The following factors result in a lake being Oligotrophic:

- a) a small watershed;
- b) a majority of the lake deeper than thirty feet;
- c) minimal development on the lake;
- d) a watershed undisturbed by intensive human activities;
- e) predominantly mineral (nutrient-poor) soils in the watershed; and
- f) no discharges of pollution from industry or cities.

Members of BPOA have been conducting Secchi disk readings on the lake for over 25 years. In addition, there is a vast amount of water data on Burntside obtained by County, State and Federal agencies. An association member who is a hydrologist prepared the attached Appendix 6 entitled "Burntside Lake Water Quality Monitoring Recommendations." The report summarizes areas where the association can make a difference in detecting long-term trends in water quality.

In its 1994 Lake Assessment Program, the MDNR made 7 recommendations for Burntside Lake:

- a) Participation in the Citizens' Lake Monitoring Program should continue.
- b) The Lake Association should continue to provide educational materials to homeowners and businesses with respect to lawn maintenance, shoreline protection, and septic maintenance.
- c) Any development in the immediate watershed should be completed so that the impacts to lake water quality are minimized.
- d) The Burntside Lake Association should conduct a survey of the type and condition of septic systems for education purposes.
- e) Wetlands within the Burntside Lake watershed should be protected.
- f) Minimize the removal of aquatic vegetation.
- g) Maintain phosphorus level of less than 10 ug/l in order to maintain the cold water fishery habitat.

Phosphorus levels in the 1994 report were at 9.6 ug/l, and the MDNR went on to say that keeping the level below 10 ug/l "may require some reduction in phosphorus loading to the lake." Excess nutrients must be prevented from entering the lake in order to protect the coldwater fishery and the clear waters.

F. BURNTSIDE LAKE DEVELOPMENT DATA

1. Levels of Existing Development: Business.

There are presently five operating summer resorts located on Burntside Lake:

Anderson's Resort, 1988 Echo Trail, East End off of Echo Trail;
Burntside Lodge, 2755 Burntside Lodge Road, South Shore off CR 88;
Camp Van Vac, 2714 Van Vac Lane, South Shore off Van Vac Road;
Echo Trail Lodge, 1962 Echo Trail, East End off Echo Trail;

Tamarack Resort, 3499 Tamarack Lane, Southwest Shore off Wolf Lake Road.

A sixth summer resort is temporarily closed:

Moat's Resort, 2041 Somero Road, East End, Somero Road off Echo.

There are three year-round YMCA/YWCA camps, all located on the North Arm:

Camp Widjiwagan, 3788 North Arm Road, off Echo Trail

Camp Du Nord East, 3606 North Arm Road, off Echo Trail

Camp du Nord West, 3606 North Arm Road, off Echo Trail

There is one bed and breakfast:

Sandemar Lodge, 2769 Van Vac Road, South Shore, off Van Vac Road.

There is one nonprofit educational institution:

Listening Point Foundation, 3133 Van Vac Road, South Shore, off Van Vac Road

There is one home business:

Burntside Heritage Tours, 2310 Passi Road, East End, off the Echo Trail.

Pontoon boat tours originate and end at Burntside Lodge, South Shore, off CR 88.

There is one public restaurant, accessible by boat or car:

Located at Burntside Lodge, off CR 88.

There are two public watercraft-refueling sites:

Burntside Lodge and Echo Trail Lodge.

2. Levels of Existing Development: Homes & Cabins.

The numbers of both seasonal cabins and homesteads are increasing on the lake, resulting in added environmental pressures. Many of the homesteads were seasonal cabins later converted to year-round use. Residential development on the lake is increasing. Data for the years 1967 and 1989 were included in the 1994 Lake Assessment Program for Burntside (copy attached as Appendix 2), while the data for the current year was compiled by BPOA.

<u>Year</u>	<u>Seasonal homes</u>	<u>Homesteads</u>	<u>Total</u>
1967	191	18	209
1989	261	69	330
2000	303	85	388

Regarding backlots, the BPOA study found no Tier Two development around the lake. We know of only three homes that are set back a few hundred feet and overlooking the lake, but all three owners also own the property in front of them down to the shoreline. BPOA also studied the County tax rolls looking for owners and legal descriptions of Tier Two tracts less than 5 acres in size. We found that adjacent shoreline owners own the majority of the small backlots. The study revealed fewer than 10 tracts, under 5 acres in size, owned by landowners that are not shoreline owners also. The vast majority of Tier Two lands surrounding Burntside are in much larger tracts of 20, 40 and 80 acres.

3. Land Ownership.

The vast majority of Burntside Lake islands, and the shoreland property accessible by County roads, is privately owned. Most of the shoreland property without County road access is in public ownership.

4. Septic System Considerations.

a. Traditional Septic Systems

BPOA has no data to support estimates on the number of failing or inadequate individual sewage treatment systems (ISTS). The St. Louis County Health Department estimates that over 50% of the existing ISTS on Burntside are failing or inadequate. Statewide estimates are even higher. We quote from a 1997 MPCA Fact Sheet:

"Yet a large segment of the state's populace still is not served by adequate sewage treatment facilities. Most of this population is served by septic systems. Unfortunately, many of those systems, as many as two-thirds of those in current use, are inadequate. The result is a widespread potential problem for the environment and human health."

The 1997 Fact Sheet goes on to describe Burntside Lake's predicament to the 'T' - "Some of the most serious and prevalent wastewater treatment issues include:

- Individual residences or entire communities discharging untreated or inadequately treated sewage directly into rivers, lakes, ditches, tile lines, or the ground surface. Many of these problems are in older rural villages and subdivisions where small lots preclude replacing whatever currently exists with an improved ISTS.
- In areas where ground-water tables are high or bedrock is near the surface, drainfields have become saturated, causing backups and surfacing of sewage. Mounds and other 'elevated' drainfield systems, used to accommodate these conditions, can fail due to improper siting, design or construction.
- Small lots and shallow or sandy soils around lakes also present difficult situations for siting an ISTS that will perform adequately. In addition, many formerly seasonal lake cabins have been improved and now are used as year-round residences."

BPOA does have indirect evidence of problems. We know of a number of septic systems on the lake that are 40 years old, or more. Water testing by BPOA members around the lake show e-coli and total coli counts rendering the water unsuitable for drinking in some areas. And this is on a lake where perhaps 90% of the owners draw their water from the lake. BPOA knows of only one developed-island that has had its septic system pumped in the past 5 years. In fact, of the approximately 65 or so developed islands and 5 water-access only shoreline structures, only about 10 have mound systems according to the County Health Department. Undoubtedly, there are many illegal, outdated septic systems on Burntside: cesspools, buried barrels, and open-ended pipes were all at one time the norm. Under present rules, such systems are now imminent health hazards, and their effect on the water quality is certainly negative.

However, there are several positive aspects to the current Burntside ISTS situation:

- 1) In one area of the lake, 4 out of 6 systems have been replaced with new mound systems in the past 5 years, and a 5th shoreline owner with a 60-year-old system is negotiating with a neighbor for mound space. All around the lake, many more systems have been upgraded due to building permit requirements.
- 2) The lake's two largest commercial operations, Burntside Lodge and Camp du Nord, have installed 'state-of-the-art' systems within the past 3 years. Especially interesting and worth watching is Burntside Lodge's "spray system", an experimental performance system used widely in other areas of the country.
- 3) The County Water Plan's Draft Policies for the Year 2000 lists three sites on or near Burntside (Passi Road, Burntside Ridge Road and Grant McMahan Boulevard) on its Sewer System Problem Areas. These are areas targeted for financial assistance programs. BPOA recommends that Schaeffer Road be added to the list of Sewer System Problem Areas.
- 4) The County ISTS Ordinance includes point-of-sale check-off and inspection provisions. These provisions will mandate an upgrade of about 5 systems per year on Burntside, based on the current rate of developed lot sales.

b. Performance Septic Systems

Residents of the lake have mixed emotions in regard to performance systems, which are alternatives to mound treatment systems. Peat filter and other performance systems are more costly to construct. Such systems are high-maintenance compared to a mound ISTS, and they fail earlier than mound system if not properly maintained; and when they fail they cause more serious damage. On the other hand, performance systems are said to be equal to a mound system if constructed and maintained correctly, and they offer landowners an option on less suitable lots when a traditional mound system is not feasible. However, if the statewide average applies to Burntside Lake systems and 66% are failing, then ANY type of system that brings one or more landowner's effluent up to current sewage treatment standards is preferable over a failing system.

Under the ISTS Ordinance, performance systems will require 1) an operator's permit; 2) a contingency plan for treatment; and most importantly, 3) a monitoring plan. BPOA concludes that performance systems may be the best option in some circumstances, provided these safeguards are enforced. Several highly developed areas of Burntside have local road associations, and we encourage them to look into a centralized performance system (or a centralized traditional mound system if that fits their needs). BPOA will assist any such area or road association in researching the options and costs, and we ask the County to assist, too.

BPOA places its highest priority on a multi-level effort toward total septic system compliance. Next to unrestrained development, there is no greater threat to the lake's water quality than the estimated number of systems that are imminent health hazards.

The Association, through its newsletter, has offered articles on ISTS maintenance and water quality issues (such as phosphorus loading) for the past several years, but education is not enough. As part of our emphasis on correcting failing systems, we request immediate assistance from the County in a lake-wide septic system survey, in order to identify all of the failing systems to bring them up to code. We also encourage County, State, Federal and private landowners to make adjacent lands available for sewage treatment in areas where small lots, steep slopes and thin soils create no good alternative.

5. Tier Two Considerations.

Tier Two development is just beginning on Burntside. Tier Two development is a huge problem on other lakes within the County and State, and we have no doubt that it will become an issue here. Burntside is just too beautiful a lake for undeveloped private lands 'with a view' to remain undeveloped.

We appreciate the fact that the owner gains a wondrous view when there are no trees or vegetation to block the view, but the effect on the vistas of lake users is nothing short of disastrous. With Tier Two construction, a once unbroken horizon becomes irretrievably marred. It appears to be the nature of the hill dweller that if the structure is going to stand out, then he'll build one that really, really stands out and can be admired by all.

It is our hope that the County will engage public discussion and propose new ordinances to control and manage this issue. Adequate screening would be BPOA's first line of defense on Tier Two problems. We suggest the following considerations be opened for public discussion and enactment into County zoning ordinances for Tier Two development and bluff development as well:

- Adequate vegetative screening;
- Non-reflective windows and building materials;
- Natural colors;
- Exterior lighting pointed away from the lake; and
- Continuous or unbroken horizons.

While shoreline owners have multiple restrictive zoning ordinances, Tier Two developers have had few, if any. And, if bluff builders added a minimum of screening, the lake would benefit. Tourists and lake users do not come to Burntside to see homes; the attraction is the semi-wilderness of the waters, islands and shores.

Note: The remaining sections of this plan, along with the zoning maps, are being considered for adoption as part of the Official Plan. This means this section will be used to guide future decision making on land use issues.

SECTION 3: FUTURE DEVELOPMENT OF BURNTSIDE LAKE

The County is not aware of any planned development on the lake, other than the already approved permit granted to Camp du Nord. There has been no new construction activity by business developers on the lake for 30-50 years, with the exception of the Y-camps. During that same time, at least one resort has closed permanently and another has been closed for the past three years on a temporary basis.

As noted above, the most suitable and accessible lands on Burntside have already been developed. We expect more conversions from seasonal to year-round use of these properties, more expansion of existing structures, and generally increased use of the lake.

It is expected that more home-based, low-impact businesses will be established, such as the pontoon tours and the bed-and-breakfast, both established within the past 10 years.

It is likely that less suitable and accessible properties will be targeted for development, and therefore the following Land Use and Zoning District Amendments, Development Policies and Regulations shall be utilized to guide development in the future.

SECTION 4: BURNTSIDE LAKE DEVELOPMENT POLICIES AND REGULATIONS

A. GUIDING PRINCIPLE

All Burntside Lake land use proposals shall be considered in light of the following directive: The proposed land use or development may proceed only if the water quality of Burntside Lake is protected or enhanced.

B. NEW COMMERCIAL AND INDUSTRIAL

No new commercial or industrial uses shall be permitted except as authorized by Conditional Use permit and only if lakeshore mitigation measures as outlined in this plan are incorporated into the proposal. Additionally, the applicant shall have the burden of proof in demonstrating to the Planning Commission that the proposed development meets the standards set forth in this plan and the Planning Commission shall make such a finding prior to any approval.

C. COMMERCIAL USES IN RESIDENTIAL

The Residential Zone District allows Home Occupations, Home Businesses, Residential Planned Unit Developments and Neighborhood Commercial Uses. These uses shall be small, low impact businesses that do not adversely affect density development patterns or the quality of lake or lake water such as bed and breakfast or pontoon tour businesses. It is the responsibility of the applicant to demonstrate that the proposed development complies with the intent of the plan and the Planning Commission must be satisfied that the heightened burden of proof that this plan requires has been met by the applicant. Conditional use applications for these businesses shall require the lakeshore mitigation measures stated in the plan and the applicant shall demonstrate that the proposed use conforms with the policies of this plan and the criteria set forth in the

zoning ordinance for conditional use approval. The Rural Commercial Development Plan concept of the Morse Land Use Plan shall provide additional guidance to the Planning Commission in reviewing conditional use applications throughout the area covered in the Burntside Plan.

D. WETLANDS

Wetlands within 1,000 feet of the lake shore perform many functions that protect lake water quality and there shall be no net loss of wetland function and value within 1,000 feet of the lakeshore. Wetland draining or filling may only occur after it has been determined by the County that there is no alternative available to the land owner other than altering a wetland and that wetland impact is kept to the minimum level necessary. Generally, impact that provides access to a property is an example of acceptable impact. The County wetland plan shall serve as the standard for review on wetlands and in addition the following shall serve as a guide to the County:

1. Wetland impact within 100 feet of the lake is generally not appropriate for the area and the proposer of the impact shall have a substantial burden of proof to determine that such impact will not result in a loss of function or value to a wetland and that the impact fully meets the sequencing requirements of the County wetland plan. Impacts in this area must be mitigated to a 2:1 standard and the party doing the impact must first examine the feasibility of replacement in the Burntside watershed.
2. Wetlands within between 100 and 1,000 feet of the lake that have a surface connection with the lake shall adhere to the County wetland plan standard of not more than 400 square feet of wetlands being impacted without replacement. Any wetland impact beyond 400 square feet in this area shall be mitigated at a 2:1 ratio. The same burden of proof for the wetland impact and replacement standards stated in "1" above shall apply to this standard.
3. All other wetlands within 1,000 feet of the shore may have up to 1,000 square feet of impact upon demonstration that sequencing standards have been met. Wetland impact beyond 1,000 square feet shall be done in accordance with County wetland plan and policies.

Planning Department Note: The wetland standards listed are essentially the existing standards with additional guidance relating to the sequencing issues.

E. STORM WATER, EROSION AND VEGETATIVE BUFFERS

Future development shall minimize storm water runoff and erosion so that no more runoff is generated than that of the site in its natural condition. The first 50 feet from the shore is particularly important to maintain lake water quality and to support fish and wildlife habitat. For all existing and new development, the objective of this plan is to have a no net loss of vegetative cover in this area. The following principles shall serve as a guide for determining no net loss of vegetative cover:

1. Trees and shrubs may be trimmed for a view of the lake but such trimming must be done in a manner that does not damage the trees.
2. Diseased, fire and storm damaged trees may be removed but a plan for revegetation should be implemented within 12 months.
3. Water Oriented Accessory uses should be sited in a manner that has the least impact upon existing trees.
4. Land alterations within 300 feet of the lake shore shall be done in a manner that causes no direct run off into the lake or onto adjacent properties.

Planning Department Note: The issue of no net loss of vegetative cover was moved to a separate policy from the wetland policy since it is an important issue by itself. Note the use of the term guideline in the language. This means that the County's existing vegetation standard will be in effect but there will be efforts made by those on the lake to encourage the no net loss of vegetative cover.

F. TRAILS

Trails extending through the shore impact zone should be kept to the minimum width required to provide access to Burntside Lake.

G. RESIDENTIAL 1 ISSUES

Rocky reefs and shallow, marshy bays and estuaries are important in preserving fish spawning beds, and aquatic plant and waterfowl habitat. Those areas classified as RES 1 are identified as critical on Burntside Lake, and any future requests for rezoning, permits, conditional uses, variances and other types of development shall include lakeshore mitigation measures as outlined in this Plan.

H. SENSITIVE 5 ISSUES

Indian Island is recognized as a site of significant historic and cultural value, hence its SENS 5 classification. Any requests for rezoning, permits, conditional uses, variances and other types of development shall be accompanied by an archeological survey of Indian Island, and shall include lakeshore mitigation measures as outlined in this Plan.

I. PLANNED UNIT DEVELOPMENTS

Residential Planned Unit Development: Residential Planned Unit Developments are residential units where each unit is owned by a single party and if the units are rented out they are done so for a time period of not less than 30 days. Rental of units for less than 30 days shall constitute a commercial planned unit development. The developer of a residential planned unit development shall demonstrate in the conditional use application that the proposed use will not affect, or cause

any impact beyond what would occur if the property was developed under traditional means. Additionally the following standards shall apply:

1. No density bonuses as defined by the County Zoning Ordinance are permitted.
2. No buildings shall be higher than what is permitted in the Zoning Ordinance for individual residential units.
3. At least 75% of the project area shall be preserved as open space.
4. At least 90% of the shore impact zone shall be preserved as common open space.

Commercial Planned Unit Developments: Resorts, campgrounds and camps are considered commercial planned unit developments. The plan recognizes that commercial uses in these areas relating to lake related activities perform a valued function for the area and the plan strongly supports the continued use and improvement at the existing sites identified in the plan through Shoreland Mixed Use zoning. Commercial Planned Unit Developments shall fall under the standards outlined in the County Zoning Ordinance and in addition meet the following standards:

1. The shore impact zone should provide erosion and run off protection for the lake. Redevelopment of existing sites shall have as part of the application specific plans for the protection or revegetation of the shore impact zone.
2. Density bonuses in the first tier (267 feet) from the lake will not be permitted unless specific lakeshore mitigation measures are implemented and the applicant demonstrates the lake water quality will be protected. Existing resorts that may be over the allowed units without density bonus may continue to improve and modernize those cabins provided lakeshore mitigation measures are taken.
3. No buildings higher than 35 feet will be permitted.
4. The design of the structures, parking and plan uses shall protect existing wetlands, control runoff into the lake and adjacent properties, and materials shall be utilized in constructions consistent with the traditional designs found in the area such as using logs or rock, earth tone colors in construction.

Planning Department Note: The 90% open space standard for the shore impact zone is more restrictive than the 70% standard in the zoning ordinance. The 90% standard would be enforced during the conditional use review.

J. BURNTSIDE NONCONFORMING STRUCTURES AND PARCELS

While this Plan does not change the status of any existing nonconforming properties, it does create as many as 10 new such properties on Burntside. It is not the intention of this Plan to place an undue burden or hardship on the owners or future buyers of these properties.

It is the policy and intent of this Plan to encourage the owners of existing nonconformities to make reasonable improvements that would enhance, rather than degrade, the Burntside Lake environment.

The following policies should be implemented when considering applications for variances from owners of nonconforming properties:

1. Following catastrophic property damage when lot size and width is at least 65% of MDNR standard. When a property suffers catastrophic damages as the result of fire, wind damage, or other natural disaster, the owners of nonconforming properties and nonconforming principal structures shall be granted variances to rebuild principal residential structures, without substantial modification, on the original foundation or footprint, provided that Mandatory Lakeshore Mitigation measures are included in the application.
2. Following catastrophic property damage when lot size and width is less than 65% of MDNR standard. When a property suffers catastrophic damages as the result of fire, wind damage, or other natural disaster, the owners of nonconforming properties and nonconforming principal structures should be granted variances to rebuild principal residential structures, without substantial modification, on the original foundation or footprint, provided that Mandatory and Special Lakeshore Mitigation measures as outlined below are required.
3. When any variance is requested for enlarging or improving an existing nonconforming structure, due consideration will be given to the overall effect of such a project on the lake. Mandatory and Special Lakeshore Mitigation measures as outlined below shall be required in such applications.
4. Vacant parcels that become nonconforming in area and/or width as a result of the revised zoning and which do not meet standards for building on a nonconforming lot of record found in Article IV Section 3.05 of the County Zoning Ordinance may receive a favorable consideration by the County Board of Adjustment if: suitable site for on site sewage treatment is identified and protected; shore impact zone is protected and or improved; wetlands are not impacted except what is needed to provide access to the property; and all other setbacks can be followed. Lakeshore mitigation measures as indicated below shall also be required.
5. In the event of catastrophic damage, the land owner and county will determine the feasibility of reconstructing the cabin at the 100 foot lakeshore setback or as close to the setback as practical.

K. BURNTSIDE LAKESHORE MITIGATION MEASURES

As a condition of issuance of certain permits, conditional uses, and variances, measures shall be required to mitigate the impacts of developments, nonconforming structures, or uses on lake water quality.

1. Mandatory Mitigation Practices.
 - a. Evaluate and upgrade ISTS as necessary.
 - b. Implement erosion control and stormwater management according to approved plan.
2. Special Mitigation Practices – choose at least 4 points from the following:
 - a. Restore native vegetation buffer area within 25 feet of OHW. Buffer shall cover the entire width of the lot except for the minimum necessary area for lake access. (1 point)
 - b. Restore native vegetation buffer area within 50 feet of OHW. Buffer shall cover the entire width of the lot except for the minimum necessary area for lake access. (2 points)
 - c. Restore native vegetation buffer area within 75 feet of OHW. Buffer shall cover the entire width of the lot except for the minimum necessary area for lake access. (3 points)
 - d. Maintain existing native vegetation in the entire structure setback area. (2 points)
 - e. Restore native vegetation buffer area in both sideyards. (1 point)
 - f. Restore or plant aquatic vegetation within 50 feet lakeward of OHW. (1 point)
 - g. Remove nonconforming accessory building from structure setback area. (1 point)
 - h. Use exterior building materials that blend with natural vegetation. (1 point)
 - i. No sodding or lawn within 50 feet of lakeshore. (1 point)
 - j. Other measures as approved by County Planning Commission, Board of Adjustment and/or Board of Commissioners. (points to be determined on case by case basis)

**SECTION 5: BURNTSIDE LAND USE AND ZONING DISTRICT
AMENDMENTS**

Land Use and Zoning Districts must be examined from time to time to determine what issues and approaches are still valid and how to meet new challenges. The land use and zoning district for Burntside Lake needs to be revised to protect and maintain existing water quality and character of lakeshore development.

A. BURNTSIDE CHANGED FROM SHORELAND MIXED USE (SMU-7) TO RESIDENTIAL (RES-5)

Prior to the adoption of this Plan, the entire lake was designated Shoreland Mixed Use 7, calling for 150 foot widths and 1.00 acre lots. Under the new Land Use Plan for Burntside Lake, the majority of Burntside is changed to Residential 5, calling for 200-foot widths and 2.50 acre lots. Larger lot sizes and shoreland widths will promote resource protection, while the new land use district affirms the residential character of Burntside by restricting future development and permitted land uses. The revised St. Louis County Official Zoning Map for Burntside Lake is attached as Appendix 1.

B. EXCEPTIONS TO RESIDENTIAL 5 ZONING

1. Existing resorts and camps are to remain Shoreland Mixed Use 7. Anderson's Resort, Burntside Lodge, Camp Van Vac, Echo Trail Lodge, Moat's Resort, Tamarack Lodge, Camp Widjiwagan, Camp du Nord, and Camp du Nord West. These long-established commercial activities are located in areas of early and relatively heavy lakeshore development. These commercial uses are located along County roads or established feeder roads, pre-date most residential development, serve residents and visitors alike, and are of historic, cultural and economic significance to the area.
2. The existing platted subdivisions are changed to Residential 7. Blueberry Island Addition, Bevis Kinney Burntside Lots, Bevis Kinney Burntside Lots 1st Addition, Burntside Terrace, Burntside View, Davidson Park, Deer Park, Domich Plat, Kewanena Beach, Kewanena Condominiums, Lindskog's Resort, Lost Girl Island, Mackies Lots, Mills Carlson Plat, Mollywood, Moroni's Point, Passi Lots, Passi Plat No. 2, Passi Plat No. 3, Pete's Burntside Park, Robert R. Reed Plat, Stelter Plat, and Shawanok Beach. These subdivisions are located in areas of early and relatively heavy lakeshore development, and are generally located along County roads or established feeder roads. This Plan utilizes the Residential 7 zone and land use district to acknowledge the existing pattern of development and to avoid creating multiple nonconforming lots on Burntside.
3. Indian Island (Lot 8, Section 23, Twp. 63, Rge.13) is changed to Sensitive 5. Due to the presence of native Indian burial grounds, a Minnesota Archeological Site Form was completed for this otherwise undeveloped property on June 28, 2000. Indian Island is unsuitable for intensive development due to the likelihood of harm to the community if development is not properly managed on this rocky, 3-acre island, and is appropriate for classification as Sensitive 5. Performance standards, to include an archeological survey, are necessary to preserve this

significant historical and cultural site.

4. The roadless area on the northwest side of the lake is changed to Residential 1. This area is defined as those lands lying between the north line of Lots 3 and 4, Section 3, Twp. 63, Rge. 13 (the south shoreline of Furaganger Bay), and the north bank of Crab Creek (located in S 17, T 63, R 13). This land is entirely publicly owned and undeveloped, contains some of the oldest red and white pine forest in the region, and is critical to the character of Burntside as a semi-wilderness lake. Many of the scarce shallow bays and rocky reefs of Burntside are in this area, which provides critical habitat for aquatic vegetation and wildlife and spawning grounds for fish. If this area is ever transferred to private ownership, the Residential 1 designation requires development in large lot sizes and performance standards for uses other than single family dwellings and home occupations.
5. The Dead River (Government Lot 1, Section 11, Twp. 63, Rge. 13) is changed to Residential 1. This fresh water estuary provides the only barrier-free upstream lake access to people and fish populations from Burntside Lake. The Dead River is extremely shallow and almost without current. It is surrounded by critical wetland habitat on both sides, and provides a unique ecosystem for moose, beaver, great blue herons, ducks and other waterfowl, and a plethora of aquatic vegetation. The shoreland of the Dead River is almost entirely undeveloped federal land, and the Residential 1 designation requires development in large lot sizes and performance standards for uses other than single family dwellings and home occupations if the property is ever transferred to private ownership.

SECTION 6: CONCLUSION

This Land Use Plan implements an increase in the minimum lot size requirement for most of Burntside Lake. It changes the land use district for most of the lake from Shoreland Mixed-Use to Residential. The Plan calls for strict enforcement of regulations for shoreline development in order to maintain natural shoreline characteristics. It sets the direction of management of the lakeshore based on the values attributable to the lake. These values include quiet residences, compatible businesses, scenic vistas, serene areas to recreate, good boat and road access, good fishing, excellent water quality, and joy in seeing a diversity of wildlife.

This Plan should be considered a living document that will be reviewed and updated and revised as necessary. The Lake Association has made a long-term commitment to the protection of Burntside Lake in cooperation with local, county and state agencies, as well as private organizations and individuals.

Burntside Lake is a residential lake, a recreational lake, a tourist and resort lake, and a semi-wilderness lake. This Plan's vision for the lake encompasses all of the above and excludes new uses which are not compatible with the present character of the lake and this Land Use Plan. The protections offered in this Plan will ensure enjoyment of the lake by all users for generations to come.

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