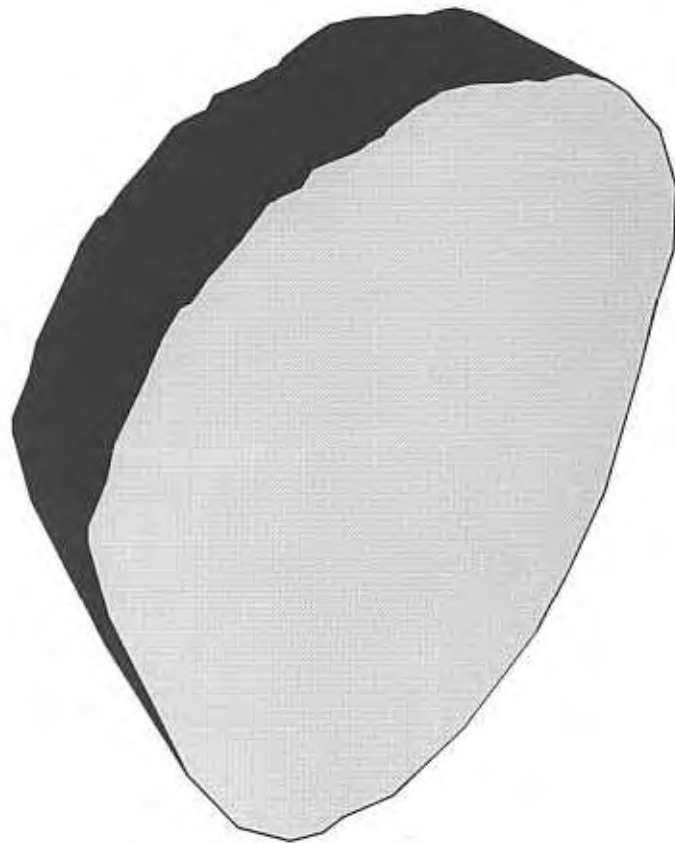


# TOAD LAKE LAKE MANAGEMENT PLAN

MATANUSKA-SUSITNA BOROUGH  
PLANNING DEPARTMENT

SEPTEMBER 1998



## ACKNOWLEDGMENTS

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### MATANUSKA-SUSITNA BOROUGH

Michael J. Scott, Manager

and

Planning Department Staff

Code Ordinance

By: M. Scott  
Introduced: 8/18/98  
Public Hearing: 9/1/98  
Adopted: 9/1/98

**MATANUSKA-SUSITNA BOROUGH  
ORDINANCE SERIAL NO. 98-117**

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING MSB 15.24.030(C)(16), THE TOAD LAKE, LAKE MANAGEMENT PLAN.

WHEREAS, the Toad Lake, Lake Management Plan provides guidelines for the continued enjoyment and management of Toad Lake; and

WHEREAS, the management guidelines for Toad Lake were developed with input from the residents and property owners of Toad Lake; and

WHEREAS, the residents and property owners of Toad Lake seek management guidelines to protect water quality and fish and wildlife habitat, improve safety, and enhance the recreational and residential character of the lake; and

WHEREAS, the Toad Lake, Lake Management Plan will promote the public health, safety and welfare.

BE IT ENACTED:

Section 1. Classification. Section 1, 2, and 4 are non-code ordinance; section 3 is of a general and permanent nature and shall become part of the borough code.


Section 2. Approval of plan. The Matanuska-Susitna Borough Assembly does hereby adopt the Toad Lake, Lake Management Plan.

Section 3. Amendment of subsection. MSB 15.24.030(C) is hereby amended to add a subsection (16) to read as follows:

(16) Toad Lake, Lake Management Plan, adopted September 1998.

Section 4. Effective date. Ordinance Serial No. 98-117 shall take effect upon adoption by the Matanuska-Susitna Borough Assembly.

ADOPTED by the Matanuska-Susitna Borough Assembly this 1<sup>st</sup> day of September, 1998.

  
DARCIE K. SALMON, Borough Mayor

ATTEST:

  
SANDRA A. DILLON, Borough Clerk

(SEAL)

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# 1 Introduction

## 1.1 Purpose

Lake management plans are developed for a variety of purposes. Most often lake front property owners request management plans because increased development or the provision of new public access brings about increased lake usage and a corresponding increase in user conflicts. As more people use a lake, conflicts among users may occur, bird-nesting sites (especially loons and grebes) may be disturbed, environmental degradation may occur, and the overall quality of the experience may decline. The most often cited complaints are noise generated from watercraft during the evening and night hours and inappropriate use of public access points. A lake management plan seeks to present policies and strategies, which attempt to balance the various demands placed upon a lake, solve lake related problems, and protect the public health, safety, and welfare.

The Toad Lake, Lake Management Plan provides management guidelines for:

- ◆ The protection of the recreational and residential quality of Toad Lake; and
- ◆ The protection of Toad Lake's water quality; and
- ◆ The continued quiet character and use of Toad Lake; and
- ◆ The protection and enhancement of fish and wildlife; and
- ◆ The protection of the public health, safety, and welfare.

## 1.2 Approaches to Lake Management

**Motorized Use of Waterbodies** There are two approaches that residents and property owners of the Matanuska-Susitna Borough may use to address lake related issues. One approach is to initiate a petition as authorized by 17.58 of the Borough Code. This ordinance, which was adopted by voter initiation in 1994, allows members of the public to seek either a prohibition of all motorized use on a water body or to establish quiet hours (11 p.m. to 8 a.m.), to establish a 100 foot no wake zone from the shoreline, to require mufflers on all piston driven engines used by watercraft, and to allow special events by permit. Once a petition is filed, a report is drafted by the Department of Planning regarding the suitability of the ordinance for the lake in question and public hearings are then held on the matter by the Planning Commission and Assembly. As of April 1995 this ordinance is in effect for Wasilla, Cottonwood, Mud, and Finger lakes while all motorized use is prohibited on Cottonwood Creek.

**Lake Management Plan** The other approach that may be utilized for managing a lake is the lake management planning process. A lake management plan is developed

with the input of local property owners and residents. The Borough's Department of Planning assists the planning effort by collecting background information, developing maps, etc., but it is the property owners and residents who decide policy issues and develop goals and recommendations. The management planning process also allows a more comprehensive approach to addressing lake related concerns such as how a lake's public access is managed. The lake management planning process also allows property owners and residents to tailor management guidelines to their particular needs and desires.

### 1.3 Process

Lake management plans are typically initiated by individuals having concerns about a particular lake or who have experienced conflicts between user groups. These individuals request that the Department of Planning (Department) of the Matanuska-Susitna Borough complete a lake management plan. Upon receiving a request to complete a lake management plan, the Department holds an informational meeting where all approaches to managing lake related issues are discussed. At the informational meeting a decision is made by property owners/residents on the preferred approach. The Department then collects the necessary background information on the lake and contacts adjacent property owners and users to participate in the planning process.

Meetings are held with lakefront property owners and users to: 1) identify any problems that may exist, 2) develop a set of recommended alternatives, and 3) consider methods of implementing the recommendations. A draft plan is then developed and a public comment period is held to solicit comments on the draft plan. After the public comment period is closed, comments are reviewed and appropriate modifications made. A meeting may be held with adjacent property owners and users to discuss the comments and proposed modifications. Whether or not this meeting is held depends on the comments received; if the comments call for minor changes or none at all, a meeting is not likely to occur. On the other hand, if the comments seek major changes to the draft plan, a meeting is arranged to discuss the comments and proposed modifications.

After the draft plan has been reviewed by the public and community council, a public hearing on the plan is scheduled with the Borough Planning Commission. At the public hearing anyone may comment on the plan. The Commission considers all oral and written comments received and either recommends to the Assembly adoption of the plan as is, or with modifications, or recommends Assembly disapproval of the plan. After Planning Commission action, the plan is scheduled for a public hearing by the Assembly. The Assembly considers all oral and written comments received and either adopts the plan as is, or with modifications, or disapproves the plan.



#### 1.4 Ponds, Lakes, and Reservoirs<sup>1</sup>

There seem to be no universally accepted scientific definitions of the term's **lake**, **pond**, and **reservoir**. In general, waterbodies which have a noticeable flow are termed either rivers or streams. "Ponded waters" have little or no current compared with rivers and streams.

A pond is usually described as a small, shallow body of water, with uniform water temperature from top to bottom. There is little wave action and often, an abundance of aquatic plants. Although local definitions may vary, a pond is generally less than ten acres in area and ten feet in maximum depth.

A lake is usually larger than a pond. It may be quite large and deep, with an abundance of cold water at the bottom. It also may exhibit areas of rocky, wave-impacted shoreline as a result of exposure to prevailing winds. The area of land around the lake which contributes water to the lake is the **watershed**. The watershed may be large or small when compared to the area of the lake. The water may enter the lake from the watershed as streams and rivers, or through the ground as groundwater. The term watershed is used interchangeably with **catchment** or **drainage basin**, although the latter term can imply a larger area containing several watersheds or **sub-basins**. The boundaries of a watershed are defined by ridges and hills that divide or separate water movement into one drainage basin or another. The **lake basin** includes the lake bottom as well as the surrounding slopes.

#### 1.5 Lake Lifespan<sup>2</sup>

Lakes fill in, drain themselves, or just evaporate and disappear. They do not last forever. Although lakes seem permanent in our human time perspective, they are sediment traps, and it is natural for them to fill in gradually with sand, silt, and organic matter. Natural lake aging or **eutrophication** moves from a nutrient-poor (**oligotrophic**) condition to an intermediate (**mesotrophic**) stage of nutrient availability and biological productivity, and finally to a nutrient-rich or highly productive (**eutrophic**) state (See Figure 1). Eutrophication - the process of nutrient enrichment and basin filling - may take thousands of years, but it can be accelerated greatly by disruptions to the watershed. Human activities that increase nutrient and sediment loadings to a lake are termed **cultural eutrophication** and include forest clearing, road building, construction, and wastewater discharges.

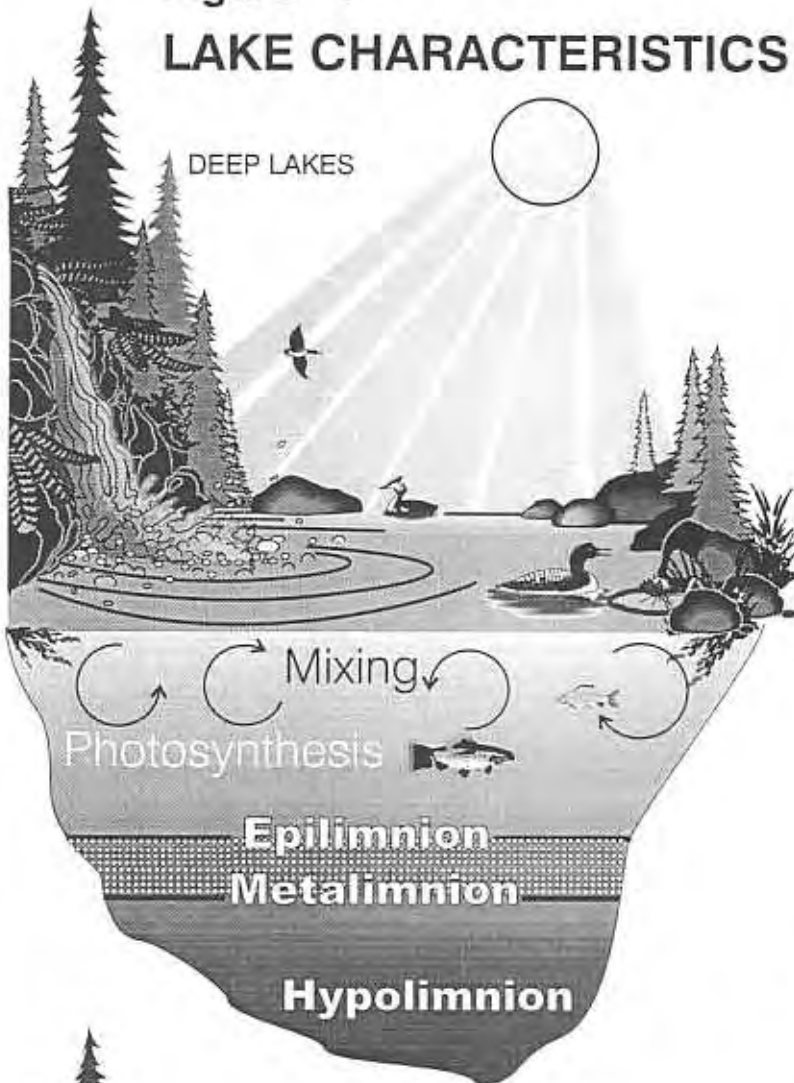
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<sup>1</sup> This section is taken from Diet For A Small Lake, Prepared by the New York State Department of Environmental Conservation and the Federation of Lake Associations, Inc., 1990.

<sup>2</sup> This section is taken from Diet For A Small Lake, Prepared by the New York State Department of Environmental Conservation and the Federation of Lake Associations, Inc., 1990.



# Figure 1 LAKE CHARACTERISTICS



## Epilimnion

The upper layer of water in a lake that is comprised of uniformly warm water that may be well mixed.

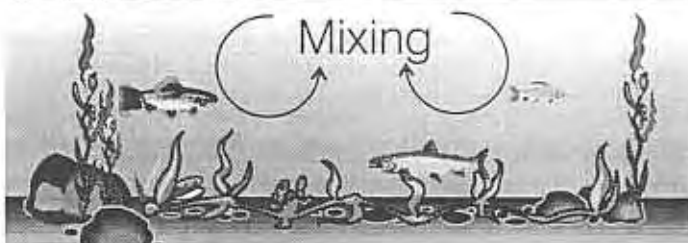
## Metalimnion

The middle layer of water in a lake that marks the transition between top and bottom layers, where temperature changes rapidly with depth.

## Hypolimnion

The bottom layer of water in a lake that is comprised of uniformly cold and relatively undisturbed water.

Source: A Citizen's Guide  
To Understanding and Monitoring Lakes and Streams  
By Jay P. Micha



## Oligotrophic

Clear water, low productivity  
very desirable fishery of large game fish



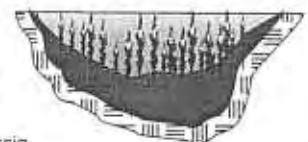
## Mesotrophic

Increased production  
Accumulated organic matter  
Occasional algal bloom  
Good fishery



## Eutrophic

Very productive  
May experience oxygen depletion  
Rough fish common



Source: A Lake Leaders  
Handbook: 1995  
UWEX-LAKES PROGRAM  
Understanding Lake Data  
By Bryon Shaw, Christine  
Machenich and Lowell Klessig

Illustrations.....Planning Department - Support Services  
Matanuska-Susitna Borough Palmer, Alaska

Trophic conditions in lakes are relative, not absolute - that is, there is no definitive line between oligotrophic and mesotrophic, or between mesotrophic and eutrophic. However, each trophic state has characteristic conditions. Oligotrophic lakes have a low level of organic productivity, clear water, and low nutrient levels. These lakes often are characterized by deep water and steep basin walls. Water in mesotrophic lakes contains a moderate supply of nutrients and organic production. Eutrophic lakes are characterized by a very high level of nutrients which causes a significant increase in the rate of plant growth. As a result, water clarity is greatly reduced, and oxygen depletion is common during the summer months. Eutrophic lakes tend to be shallow and typically, have elevated water temperatures.

Identification of a lake's trophic status is a useful way to determine its general "health," or biological status, from one year to the next and in comparison with other lakes. If a potential problem is identified in a lake, the trophic status can also be used to evaluate management alternatives.

A few lakes are naturally eutrophic. Many lakes and reservoirs are located in naturally fertile watersheds where the soil is highly erodible. Unless the soil remains undisturbed, these lakes have little chance of being anything but eutrophic. Users of these lakes need to recognize and accept the fact that manmade systems (such as laws, property, or zoning) may not "correct" the conditions. Residents and visitors should adjust their expectations for the appearance and use of such eutrophic lakes.

#### 1.6 General Lake Issues and Concerns

This section describes some of the most common concerns and issues that have been raised by residents and property owners of the Borough. There are three main categories of lake related concerns and issues. One category is water quality related. Activities within the shore land area can have a direct impact on lake water quality. A shore land is the land within 500 to 1,000 feet of the normal mean water mark of a lake or pond. The placement of septic systems in unsuitable soils or too close to the lake or the lack of sanitary facilities at public access points can introduce nutrients and pathogens into the lake. Inadequate soil erosion control during upland construction can increase the sediment loading of the lake and thereby create turbid conditions. Removal of vegetation along the shoreline or at unsupervised public access points may also increase erosion of the bank and loss of its ability to filter runoff.

Another category of concerns is related to the surface use of the lake. Some uses may conflict with one another such as fishing and water-skiing because it is difficult for both activities to occur at the same time and in the same location. Other uses may cause conflicts by the nature of how the use occurs such as becoming a nuisance by creating noise during normal sleeping hours. Some uses of the surface water may create shoreline erosion, and hence, increase sediment loading of the lake, and cause the loss of upland property.

The last category of lake issues regards the impact of recreational use on wildlife and wildlife habitat. Unsuccessful nesting or above average mortality may occur during the nesting season of loons and grebes if the nests are harassed, frequented by watercraft, or swamped by wave action.

### 1.7 Toad Lake Issues and Concerns

The Toad Lake, Lake Management Plan was initiated by a request from the Toad Lake property owner. One meeting was held with the single property owner who owns all of the land surrounding Toad Lake. At this meeting concerns and issues were discussed as well as the proposed lake management plan's guidelines.

The issues identified included:

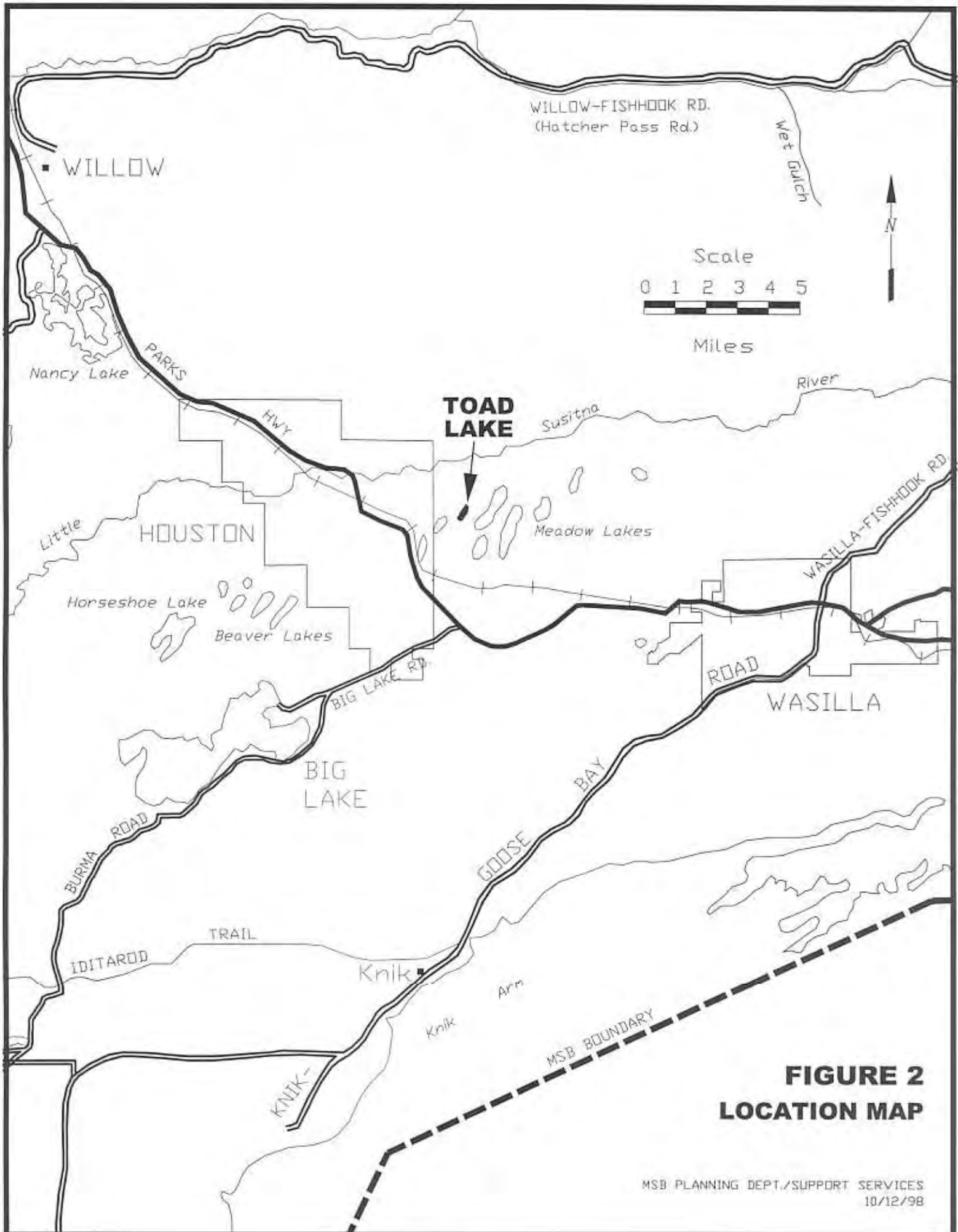
- 1) The creation of noise, especially in the evening and early morning hours; and
- 2) Protection of the wildlife and wildlife habitat; and
- 3) The potential for erosion caused by wakes; and
- 4) Protection of the quiet character of the lake; and
- 5) Surface uses that create noise and disturb wildlife are primary concerns of property owners; and
- 6) Increased noise and erosion from additional use of the lake by motorized watercraft; and
- 7) The desire to maintain the quiet, residential quality of the lake.

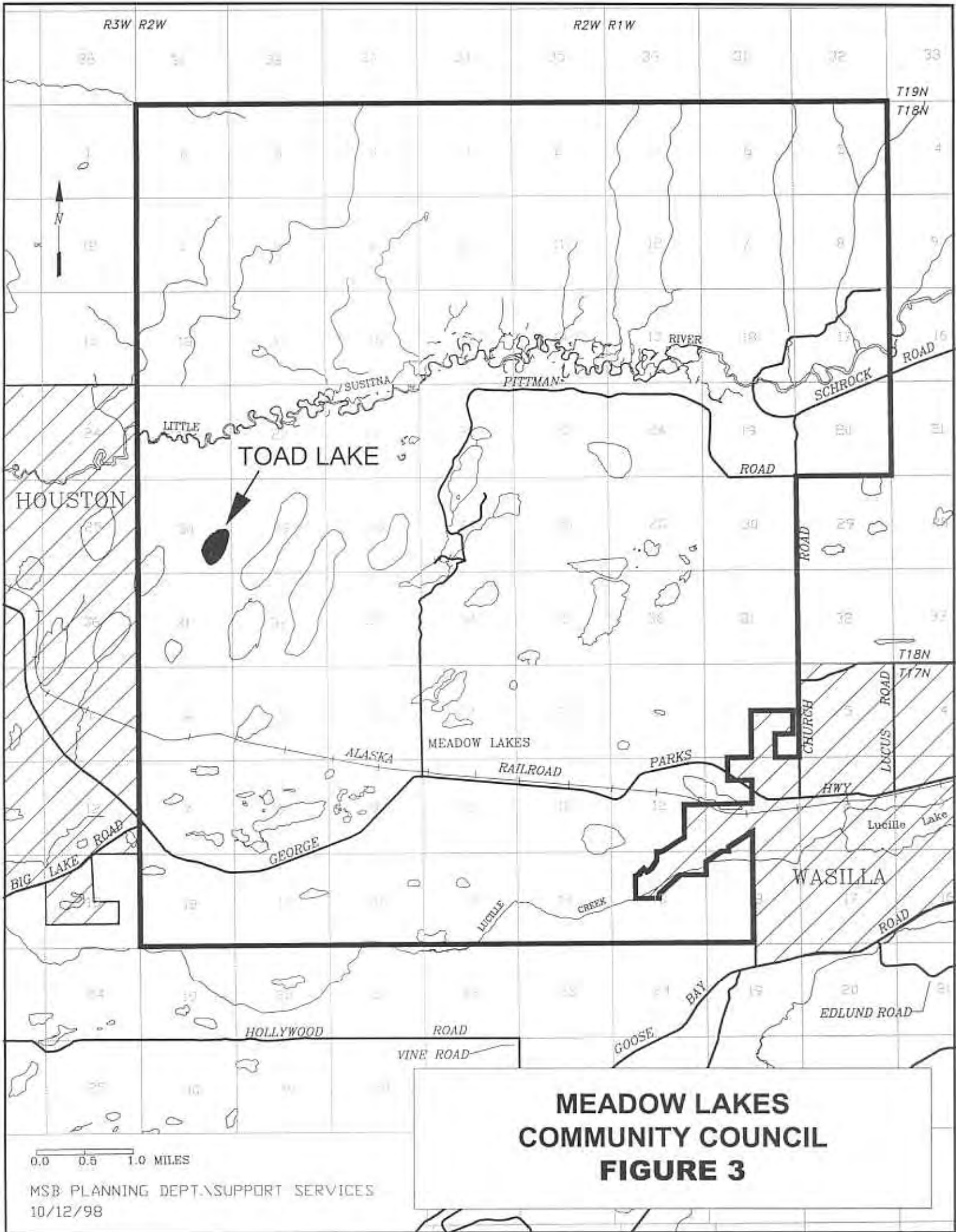
It is the desire of the Toad Lake property owner of Toad Lake to protect the quiet character of the lake. The present state of the lake may be characterized as having full-time residential upland use, being quiet, and having active loon nests. The property owner at Toad Lake is concerned that the lake will be used by watercraft with large motors and jet skis/wave runners, which may create several negative impacts. The property owner at Toad Lake believes these uses are incompatible because they harass wildlife, create turbid water conditions, cause shoreline erosion, create noise, and detract from the quality of life and recreational experience at the lake.

## 2 **Inventory of Existing Conditions**

### 2.1 Location

Toad Lake is located approximately 3 miles north of the George Parks Highway at milepost 51. Presently there is no developed road access to Toad Lake (see Figure 2). The Toad Lake area is located completely within the boundaries of the Meadow Lakes Community Council (see Figure 3).





**MEADOW LAKES  
COMMUNITY COUNCIL  
FIGURE 3**

0.0 0.5 1.0 MILES

MSB PLANNING DEPT.\SUPPORT SERVICES  
10/12/98



## 2.2 Land Ownership

There are four lots with shoreline on Toad Lake (see Table 1). There is no developed public access to the lake. All parcels of the land adjacent to Toad Lake are privately owned and they are owned by one individual. It appears that the land underlying Toad Lake is also owned by the property owner (see Figure 4).

Table 1  
Toad Lake  
Landownership and Parcel Size  
(lake front only)

	Private
Number of Parcels	4
Total Acreage	160
Average Parcel Size	40
Smallest Parcel Size	N/A
Largest Parcel Size	N/A

## 2.3 Present Lake Usage

Toad Lake contains approximately 50 surface acres and has just over 1 mile of shoreline (see Table 2). Rainbow trout may be found at the lake and the lake contains active loon nests.

Table 2  
Toad Lake Characteristics

Surface Acres	50
Volume	Unknown
Mean Depth	10 feet
Maximum Depth	Unknown
Shoreline Length	1.2 miles

Source: Matanuska-Susitna Borough, Department of Planning

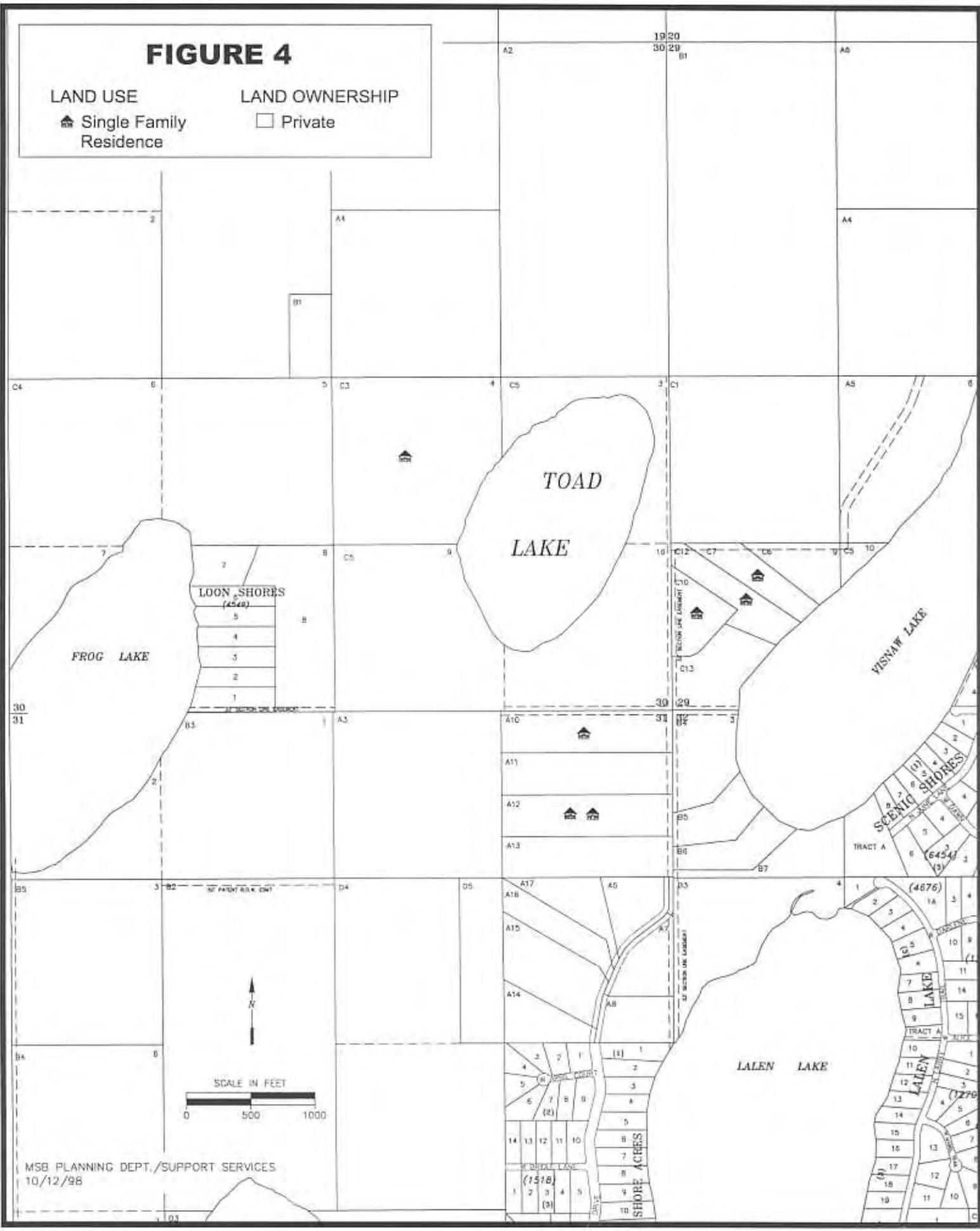
# FIGURE 4

**LAND USE**

- 🏠 Single Family Residence

**LAND OWNERSHIP**

- ☐ Private





The present use of Toad Lake may be characterized as being quiet, with no public recreational use. The property immediately adjacent to the lake consists mostly of undeveloped lots with some residential development. The lake front property owner is the predominant user of Toad Lake. Present use of the lake is by non motorized watercraft. There has been no observed use of personal watercraft (a.k.a., jet skis/wave runners) at Toad Lake. The property owner is concerned that the use of personal watercraft and boats with large motors will create erosion of the shoreline, turbidity, loss of wildlife, and noise and detract from the existing, tranquil use of the lake. The property owner has indicated that the lake is not frequently used by visitors for boating and fishing.

## 2.4 Existing Plans

### State

The State plan affecting the Toad Lake area is the Willow Sub-Basin Area Plan. The Willow Sub-Basin Area Plan, adopted in February 1982 contains management intent for State and Borough lands within the Willow Sub-Basin Planning Area, which has as its borders the Kashwitna River to the north, Matanuska River to the east, Cook Inlet to the south and the Susitna River to the west. Toad Lake is located within the Wasilla management unit. Generally speaking, the plan's intent for public lands within the management unit is to provide lands for the settlement needs of the general Wasilla area.

### Borough

Borough plans that address Toad Lake in some manner include the Borough-wide Comprehensive Plan, adopted in 1971; the Matanuska-Susitna Borough Coastal Zone Management Plan, as amended; and the Borough-wide Long Range Transportation Plan, Public Facilities Plan and the Big Lake Community Comprehensive Plan, adopted February 1996.

The Borough-wide Comprehensive Plan does not makes specific recommendations for the Toad Lake area. Rather the 1971 plan recognizes that the Meadow Lakes area has important recreational characteristics and that these characteristics will attract visitors and new residents in the future.

Toad Lake lies within the Matanuska-Susitna Borough Coastal District (District), as defined within the Matanuska-Susitna Borough Coastal Management Plan, as amended. The Coastal Management Plan seeks to direct the course of local, state, or federal development within the District in a manner that protects the important land and water resources of the District. The adopted policies of the Coastal Management Plan are used to evaluate development proposals vis-a-vis resource values in an effort to ensure that the proposals are consistent with the plan's goals and objectives. Local

development includes actions that trigger a Borough subdivision, planning or zoning action. For example, a variance application to build a habitable structure or garage closer than 75 feet from the ordinary high water mark of Toad Lake would be reviewed to determine whether or not it is consistent with the Coastal Zone Management Plan. Construction within waterbodies are also reviewed for consistency with the plan. Uncovered floating or pile supported docks which do not extend more than 40 feet beyond the ordinary high water line and do not exceed 400 square feet in size may obtain a general concurrence. Metal drums, however, may not be used as floatation devices.

The Borough Long Range Transportation Plan was adopted in 1987 and is presently being updated via the Long Range Transportation Plan (2015). The plans both identify a new road connecting Point MacKenzie Road to South Big Lake Road along the section line just east of Carpenter Lake.

The Borough Public Facilities Plan makes recommendations on a regional basis for the provisions of public services including the development of public facilities necessary to the provision of those services. Services included in the plan are: public safety (fire protection, emergency medical services, and emergency preparedness); library; historical preservation; governmental administration; education; parks, recreation and open space; trails; and utilities. All of these elements affect the Toad Lake area in some way; but the Parks, Recreation, Open Space, and Trails elements would have the most impacts relative to the concerns of this management plan.

## 2.5 Existing Regulations - Public

This section describes the principle regulations affecting use and development in the Toad Lake area. This section is **NOT** meant to provide an all-encompassing description of all activities and uses that require permits or approvals from local, state, or federal agencies. Prior to undertaking any development activity, individuals should contact the appropriate local, state, and federal agencies to obtain the required permits and approvals.

### Federal

Any work which results in the dredging or placing of structures or fills in tidal (ocean) waters, streams, lakes, or wetlands requires a 404 permit from the U.S. Army Corps of Engineers.

Migratory birds, which include loons and grebes, are protected by the Migratory Bird Treaty Act. The Act, among other things, prohibits the "take" of migratory birds where "take" is defined to mean pursuing, killing, etc., migratory birds. Destruction of nest sites, eggs, or the birds themselves is a violation of the Act.

## State

The Alaska Department of Environmental Conservation (DEC) provides regulations for wastewater disposal. DEC wastewater/septage regulations [18 AAC 72,015(f)] state that no holding tank, septic tank, soil absorption system, seepage pit, privy, or other waste water collection, treatment, or disposal system may be within 100 feet, measured horizontally, of the mean annual high water level of a lake, river, stream, spring, slough, or the mean higher high water level of coastal waters.

In addition to the U.S. Army Corps of Engineers 404 permit requirements, any activity within streams and certain work within lakes requires a Title 16 permit from the Department of Fish and Game. Activities which result in the construction of a dam which impounds water or places a weir, culvert, or temporarily blocks a stream requires a Title 16 permit. In February 1994 the Habitat and Restoration Division of Fish and Game issued a one year, general permit allowing the vehicle movement on frozen water surfaces in southcentral Alaska. The permit allows certain motorized vehicles less than 2,000 pounds gross vehicle weight and wheeled vehicles less than 10,000 pounds gross vehicle weight to travel upon frozen water surfaces in southcentral Alaska without a special permit (Appendix #1). Finally, the general Alaska Department of Fish and Game fishing regulations apply to Toad Lake.

Navigable and public waters in Alaska have special public access requirements. A navigable or public water body includes water suitable for commercial navigation, floating of logs, land and takeoff of aircraft, and public boating, trapping, hunting waterfowl and aquatic animals, fishing, or other public recreational purposes. Toad Lake meets the definition of a public water body. Alaska statute (AS 38.05.128) requires that the public have access to the surface waters of any navigable or public water body of the State. This requirement is typically called a "to" easement. In addition, all navigable and public waterbodies have a 50-foot easement along the water body; this easement is typically called an "along" easement. In regards to the actual ownership of the lands, the boundary between private and public ownership is the ordinary high watermark of a water body or watercourse. Therefore, an "along" easement may be used for transportation or emergency landing purposes but not for overnight camping. These easements are created when the State or Borough obtains patents to their lands and continue with the property when either entity disposes of lands.

## Borough

Several Borough-wide ordinances address the development and use of land adjacent to Toad Lake. The regulations are contained within the Borough's planning (Title 15), subdivision (Title 16), zoning (Title 17), and real property management (Title 23) ordinances. The adopted Coastal Management Plan described earlier, because of its enforceable criteria, also regulates development activities within and near Toad Lake.

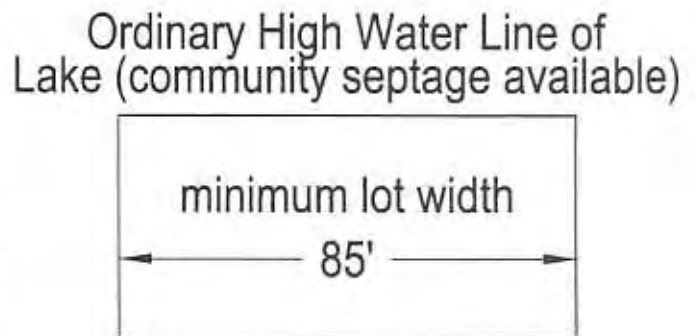
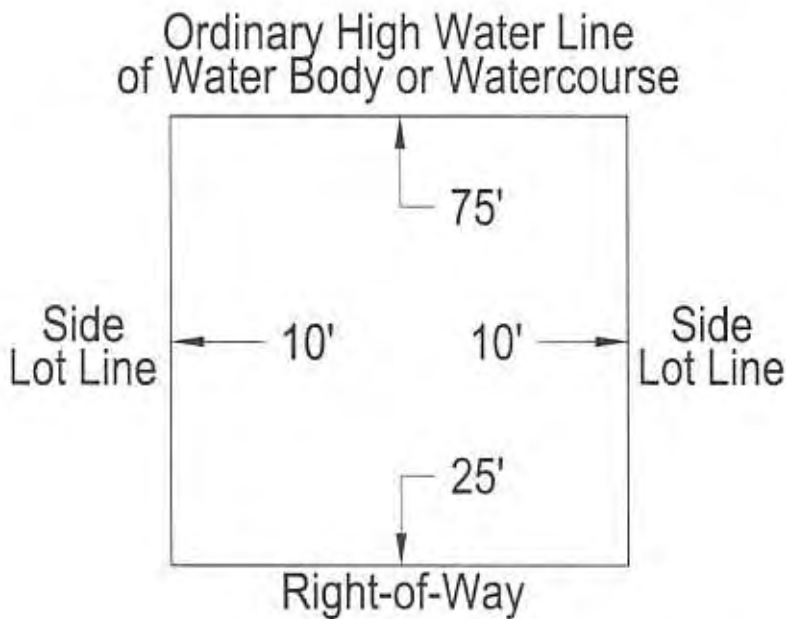
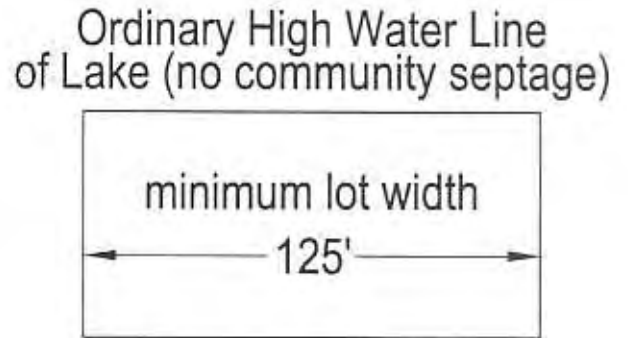
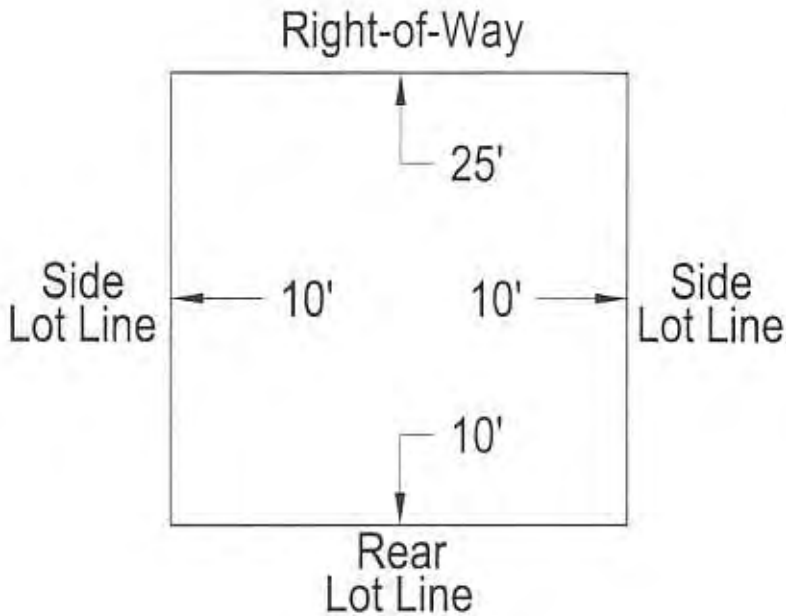
Title 15 establishes and describes the general functions of the Planning Commission (both planning and zoning functions) and the Board of Adjustment and Appeals. Title 15 also describes the comprehensive plan and purposes. Once adopted, the Toad Lake, Lake Management Plan will become an instrument of Borough policy similar to the other plans adopted by the Borough Assembly.

Title 16 provides the subdivision development standards within the Borough and establishes the Platting Board. Two of Title 16's requirements that are of special note to development at Toad Lake include a minimum lot size of 40,000 square feet, and a minimum lot width when measured at the lake's water line of one hundred twenty-five feet unless community septage is provided, then the minimum width may be eighty-five feet (see Figure 5).

The Borough has a Borough-wide comprehensive plan which is implemented, in part, through the Borough-wide zoning ordinance. Presently, the Borough undertakes its comprehensive planning on a community by community basis. As most comprehensive plans are implemented through a zoning ordinance, a number of different zoning ordinances exist within the Borough and are identified as Special Use Districts. For example, the cities of Houston, Palmer, and Wasilla all have their own comprehensive plans and all have zoning ordinances unique to their cities. Title 17 contains these various zoning ordinances of the Borough. A list of Title 17's chapters follows.

- 17.01 Acknowledgment of Existing Land Use Regulations.
- 17.03 Public Notification.
- 17.04 Nancy Lake State Recreation Area Special Land Use District.
- 17.08 Hay Flats Recreation Area Special Land Use District.
- 17.15 Palmer Special Land Use District.
- 17.17 Denali State Park Special Land Use District.
- 17.18 Chickaloon Special Land Use District.
- 17.19 Glacier View Special Land Use District.
- 17.29 Flood Damage Prevention.
- 17.36 Residential Planned Unit Development.
- 17.40 Houston Land Use Ordinance.
- 17.45 Wasilla Special Use Land District.
- 17.48 Mobile Home Park Ordinance.
- 17.52 Residential Land Use District.
- 17.55 Setbacks and Screening Easements.
- 17.56 Violations and Enforcement.
- 17.58 Motorized Uses on Lakes and Waterways.
- 17.60 Conditional Uses.
- 17.65 Variances.
- 17.70 Regulation of Alcoholic Beverage Uses.
- 17.80 Nonconforming Structures.
- 17.90 Regulation of Adult Businesses.
- 17.99 Fees.

Figure 5  
 General Setback Requirements  
 and  
 Lot Size\* Requirements



\*All lots must be a minimum of 40,000 sq. ft.



Zoning regulations that are of special note to development activities at Toad Lake include setback requirements and a petition process to limit or eliminate motorized use of lakes and conditional use permits. Presently all structures must be a minimum of twenty-five feet from a right-of-way and ten feet from all lot lines. In addition, the voters of the Borough approved by initiative, a requirement that all habitable structures and garages must be located at least seventy-five feet from the ordinary high water mark of any water body or watercourse (see Figure 5). In 1994, the voters of the Borough also adopted by initiative, an ordinance that allows by petition and subsequent adoption by the Assembly the following restrictions to be placed on lakes and waterbodies: 1) limiting or elimination of motorized use of lakes, 2) establishment of quiet hours, and 3) establishment of a one hundred foot no wake zone from the ordinary high water mark. The Borough also requires that any development which seeks to establish or operate a mobile home park, junkyard, refuse area or landfill, or dispense alcohol must first obtain a conditional use permit.

The Borough received approximately 350,000 acres of land through the Municipal Entitlement Program. The Planning Department of the Borough manages and disposes of these lands through the policies and procedures described within Title 23. There are two parcels of Borough land at Toad Lake. These parcels are presently being considered for disposal.

#### Existing Regulations - Private

Private regulations, in the Toad Lake area would be in the form of subdivision covenants. The Borough files do not contain a copy of any recorded covenants for land adjacent to Toad Lake, although this does not mean that they do not exist. For current information about covenants in the area, the reader is referred to the State of Alaska Recorders Office.

### **3 Goals**

Goals describe the future expectations of residents, property owners, and users for a lake. The following goals reflect the aspirations of Toad Lake residents and property owner and addresses their principal concerns: water quality, access, wildlife, quality of experience, and the recreational character of the area. The goals are not shown in priority order as they are interdependent.

#### **3.1 Water Quality**

Toad Lake is a significant natural resource and it is the desire of property owners, residents, and users of Toad Lake to maintain or improve the lake's water quality.

### 3.2 Recreation and Residential Character

The recreational opportunities offered at Toad Lake should be maintained and enhanced but suited to the lake's particular characteristics and should not detract from the quiet quality of experience at the lake.

Toad Lake offers a unique setting for part and full time residential use and this quality should be protected and preserved.

Upland development should occur in an appropriate manner to ensure that pollution, noise, or other environmental degradation of the lake and uplands does not take place.

Uses of the lake should be compatible, or of the kind that enhance the present quality of the lake which is of a low-impact, quiet, recreational character.

### 3.3 Wildlife

The ability of Toad Lake to remain a migratory bird (loon) nesting site should be preserved. Recreational use of the lake should be compatible with wildlife nesting.

## 4 **Management Issues, Alternatives, and Recommendations**

The management issues at Toad Lake was identified by the lake's property owner. This section describes several methods for alleviating problems and provides preferred recommendations. The alternatives were developed through discussions with the property owner, and a review of how other lakes in the Borough and lakes in other states have been managed.

### 4.1 Access

*Management Issue* Presently there is no developed public access to the lake. Developed points of access that are unsupervised and unmanaged more often than not, create numerous problems at lakes throughout the Borough. Examples of the problems caused by the lack of a suitable and managed access to a lake include trespass onto private property, creation of unsanitary conditions where no sanitary facilities exist, litter, blockage of the public's access by visitor parking or overnight activities, damage to nearby trees, and unsupervised campfires.

*Alternatives* Two alternatives are available to address the access management issue: 1) develop and actively manage access to the lake and 2) do not develop the lake's access. Presently funds are unavailable to operate and maintain a new public access to Toad Lake. Without active and ongoing management of the access, new



development is likely to increase litter and cause environmental degradation; and hence, create more problems than exists today. Not developing the access at this time, preserves the ability to develop it in the future when funds become available for operations and maintenance without causing additional problems today.

**Recommendation** Until funds are made available to provide facilities and adequate supervision, no developed public access should be constructed to Toad Lake.

#### 4.2 Wildlife

**Management Issue** The principle wildlife concerns of the Toad Lake residents is the retention and protection of loon nesting sites. Presently, the lake has active nests and there is a concern that increased motorized activity on the lake will harm the existing nesting sites. The remainder of this section will discuss alternatives for preserving and protecting the loon nests.

Loon nesting sites and successful breeding may occur on lakes having development and recreational use if sufficient habitat is available and the nesting sites are not repeatedly disturbed. Loons will nest on shore although islands offer the optimal nest sites. Nesting periods generally begin in late May through late June, however, if a nest is abandoned, a loon pair may attempt a new nest and this second nesting period runs through late July. In order to retain and protect the existing nest site, lake users need to become informed of how recreation and development affects loons, as well as to avoid the nest sites during the critical nesting/mating/rearing periods. While grebes commonly have the same breeding period as loons, grebe nest sites are much different. Grebes prefer to nest on floating objects, typically vegetation.

Nest sites and breeding may be disturbed in a number of ways. Steady activity that comes near a nest site, whether motorized or non motorized, may cause the nest to be abandoned. High motorized activity near a nest site may cause chick mortality by separating the chick from the adult or by the wakes caused by motorized craft may destroy the nest or wash away the eggs. In addition to damaging a nest, activities occurring too close to a nest will cause loons to leave an active nest thereby allowing predators such as gulls and ravens to eat the unprotected eggs or chicks. Discarded monofilament line presents another threat to loons and other birds as it may entangle birds and chicks and ultimately kill them through starvation, predation, or by drowning.

**Alternatives** If nothing is done to inform lake users of the sensitivity of loons and grebes to water borne activities and development, active nests will not be found on Toad Lake in the future. In order to maintain the presence of loons and grebes, it is necessary that some proactive steps be implemented. The proactive steps include providing the public with information about waterfowl and bird (loon/grebe) nesting

habits and by taking some actions that will reduce the probability of harming nests and nest sites.

**Recommendations** Most individuals will not disturb a nest site if they are informed of its location and the proper behavior when near it. It is recommended that a number of techniques be employed to provide the public with information about loons and grebes. First, existing nests where regular loon or grebe nests have occurred could be encircled by a number of buoys marked with "Loon (or Grebe) Nesting Site - Do Not Approach" placed at least 150 feet (200 feet preferred) from the nest's boundary. Appendix #2 provides an illustration of a low cost, effective buoy. Loon and grebe alert notices and general information about loons should be posted at a weather-protected signboard at the lake's access point to inform the public about proper "loon or grebe etiquette" (see Appendix #2).

Since Toad Lake is a small and shallow lake it is very easy to create wakes and turbid conditions. Wake action may cause loon mortality by swamping active nests or by separating parents from chicks. Turbid waters also reduce fish stocks. Therefore, it is further recommended that no watercraft using piston driven motors be allowed at the lake in order to reduce wakes, turbidity, and shoreline erosion and manage noise generation.

#### 4.3 Noise

**Management Issue** Toad Lake has a history of low-impact, quiet, recreational use. Residents of the area wish to maintain these characteristics of the lake. Additionally, Toad Lake is a relatively small and shallow lake and therefore not of sufficient size to adequately support watercraft with large motors, recreational use that generates a large number of wakes nor a large amount of surface water activities.

**Alternatives** Four alternatives may be considered for this management issue; namely: 1) do nothing, 2) prohibit all motorized use, 3) limit the size/power of boat motors that may be used on the lake, and 4) establish quiet hours to allow motorized use which does not detract from the current use and character of the lake.

The first alternative, "Do Nothing," ignores problems that may be associated with noise. The "Do Nothing" alternative also ignores one of the primary reasons the lake's property owner requested that a lake management plan be developed; that being, to control noise. This alternative is therefore rejected.

The second alternative would prohibit all motorized use of the lake. It is the desire of the lake's property owner to limit the lake to watercraft utilizing either electric motors or human power. With the selection of the electric motor or human power guideline, the property owner/resident did not believe the third or fourth alternatives, were needed.

**Recommendation** The property owner of the area initiated the lake management planning process for, among other reasons, to protect the existing quiet, low-impact, recreational use of Toad Lake and to eliminate shoreline erosion caused by motorized watercraft. A preference for an electric motor or human powered watercraft guideline is the recommendation of this lake management plan.

## 5.0 Implementation

Plans may be implemented in a number of ways but are typically implemented through capital improvement programs and subdivision and zoning ordinances. Within the Borough, residents may also petition for motorized use restrictions on lakes and this ordinance may be used to implement a lake management plan. This ordinance was discussed by Toad Lake's property owner and found not to be needed at this time. Plans may also provide for private implementation through public information campaigns and a list of best management practices that may be used by the public. The problems facing Toad Lake at this time do not warrant a special zoning or subdivision ordinance nor do they warrant implementation of the Borough's motorized use of lakes ordinance. Therefore, this plan will utilize a combination of public information and best management practices, and regulations to implement the plan. The plan recommends the use of the Borough's citation authority (MSB 17.58) for infractions of the plan's recommended management guidelines.

In addition, a lake management ordinance<sup>3</sup> may be adopted containing a general provisions section that provides limited guidelines, e.g., wildlife protection, quiet hours, no-wake zones, and bans on overnight camping. The Toad Lake area residents and property owner should be contacted to determine whether or not Toad Lake should be included in such an ordinance. A description of the implementation proposals follow.

**Electric Motors Only** As stated above, Toad Lake is a relatively small lake and not suitable for large watercraft or watercraft with large motors. The property owner who owns all of the land adjacent to the lake seeks to have the shorelines protected from erosion caused by large wakes. Loons nesting on a small lake are placed at an increased risk of disturbance from wakes caused by watercraft with large horsepower engines or by use creating repetitive wake action. The historical use of Toad Lake has been low impact recreational; residents in the area and the property owner wish to continue this character and the quiet nature of the lake. Therefore, an electric motor watercraft motor limitation is recommended for Toad Lake.

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<sup>3</sup> Note: Due to the diversity of lakes in the Borough and the many requests for lake management plans and guidelines that have been received, a Borough-wide ordinance consisting of a general provisions section containing rules for all lakes, e.g., don't litter and a more specific provisions section containing several lake categories with different guidelines ranging from none to several may be considered.

*Access* Until funds are available to provide adequate facilities, maintenance and supervision, no developed public access should be developed into Toad Lake.

*Loons and Grebes* To protect loons and grebes it is recommended that buoys should be placed a minimum of 150 feet (200 feet preferred) near the nest(s). Appendix #2 provides information on buoy construction and placement. Finally, a weather-protected informational signboard should be constructed at the preferred access point and information about lake usage and proper behavior near active loon nests, e.g., "Loon (or Grebe) Alert!" The Toad Lake area residents, property owner, and Borough should cooperate in implementing the loon and grebe protection program. Additionally, the harassment of loons and grebes and other lake related wildlife such as grebes may become subject to fines under the proposed lake management ordinance described above.

*Trash and Fireworks* Firework displays are illegal without a special permit issued by the Borough Planning Department; never-the-less, individuals generally display fireworks throughout the Borough. Firework displays create two problems, noise from explosions and trash from the fireworks. Firework displays may also start forest fires. The Borough does not have the resources to actively police the illegal use of fireworks and such use is a low priority for the Alaska State Troopers. However, the Borough should advise property owners of the law and inform them to be considerate of their neighbors, avoid polluting the lake with debris, and avoid forest fires and disturbance of waterfowl.

*Enforcement* Violation(s) of this lake management plan's guidelines, upon adoption of the plan by the Borough Assembly are subject to the citation and remaining remedies that exist for violation of the Borough's lake management plans (15.24.030(c)).

## APPENDIX #1



# STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

## DEPARTMENT OF FISH AND GAME

HABITAT AND RESTORATION DIVISION

333 RASPBERRY ROAD  
ANCHORAGE, ALASKA 99518-1599  
PHONE (907) 344-0541  
FAX (907) 349-1723

### FISH HABITAT PERMIT FG 93-II-0803

ISSUED: February 23, 1994  
EXPIRES: December 31, 1994

General Public

Re: Vehicle movement on frozen water surfaces within southcentral Alaska

Pursuant to AS 16.05.870(b), the Alaska Department of Fish and Game (ADF&G) has determined that both the public interest and the proper protection of fish and game would be served through the issuance of a general permit (GP) authorizing the use of certain categories of motorized wheeled and tracked vehicles on the frozen waters of various specified rivers, lakes, and streams within the southcentral region (see attached map).

Categories of motorized vehicles covered by this GP include: any wheeled, tracked, or other ground effect motorized vehicles less than 2,000 pounds gross vehicle weight (GVW) such as snow machines, 3 and 4 wheelers, coots, etc.; and wheeled vehicles less than 10,000 pounds GVW. The use of any ground effect motorized vehicle on specified frozen waters: (1) with GVWs other than indicated above; (2) within State of Alaska Refuges, Critical Habitat Areas, or Sanctuaries (see attached maps); (3) by Alyeska Pipeline Service Company (APSC) for activities along the pipeline corridor, or (4) outside of the described area is not allowed, except by individual Fish Habitat Permit, other general permit, or Special Area Permit issued by the ADF&G, Habitat and Restoration Division, or by the State Pipeline Coordinator's Office for the APSC.

This GP does not authorize cross-country movement of equipment on state land or other activities not generally authorized by the Alaska Department of Natural Resources.

Various rivers, lakes, or streams within the described area have been specified as being important for the spawning, rearing, or migration of anadromous fish pursuant to AS 16.05.870(a). They are utilized by salmon and other anadromous fish for spawning, rearing, or migration, and by resident fish species.

In accordance with AS 16.05.870(d), access to, use and crossings of, or egress from any specified waters, as described above, is hereby authorized provided the stipulations contained herein are adhered to.

1. The ice cover shall be of sufficient thickness to support the weight bearing load of the authorized vehicle(s).
2. There shall be no vehicles or equipment operated in the open water of any specified river, lake, or stream under this GP.
3. The use of snow or ice bridges, access ramps, cribbing to cross any specified river or stream is prohibited unless specifically approved, in writing, by the ADF&G, Habitat and Restoration Division.
4. Access to or egress from frozen waters shall occur only at locations with gently or gradually sloping banks. There shall be no access to or egress from frozen waters at locations with sheer or cut banks.
5. The bed or banks of any specified river, lake, or stream shall not be altered or disturbed in any way to facilitate use of, access to, or egress from their frozen surfaces.
6. Vehicles or equipment shall not be left unattended while on the frozen surface of any specified river, lake, or stream.
7. No vehicles shall be fueled or serviced while on the frozen surface or below the ordinary high water line of any specified river, lake, or stream.

The permittee is responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved stream crossings. For any activity that significantly deviates from the approved plan, the permittee shall notify the ADF&G, Habitat and Restoration Division, and obtain written approval in the form of an individual permit before beginning the activity. Any action taken by the permittee or an agent of the permittee that increases the scope of the activity or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this general permit will be deemed a significant deviation. The final determination as to the significance of any deviation and the need for an individual permit is the responsibility of the ADF&G, Habitat and Restoration Division. Therefore, it is recommended that the ADF&G, Habitat and Restoration Division, be consulted immediately when a deviation from the approved activity is being considered.

This letter constitutes a general permit issued under the authority of AS 16.05.870. Please be advised that this approval does not relieve you of the responsibility for securing other permits: state, federal, or local.



Pursuant to 6 AAC 80.010 (b), the conditions of this general permit are consistent with the Alaska Coastal Management Program.

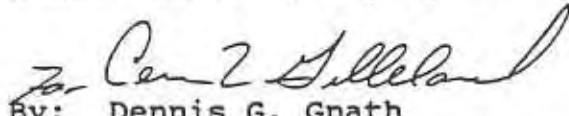
In addition to the penalties provided by law, this general permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. The department reserves the right to require mitigation measures to correct disruption to fish and game created by the authorized activity which were a direct result of the failure to comply with this general permit or any applicable law.

The recipient of this general permit (the permittee) shall indemnify, save harmless, and defend the department, its agents, and its employees from any and all claims, actions, or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or the permittee's performance under this general permit. However, this provision has no effect if, and only if, the sole proximate cause of the injury is the department's negligence.

This general permit decision may be appealed in accordance with the provisions of AS 44.62.330--44.62.630.

Sincerely,

McKie Campbell, Deputy Commissioner



By: Dennis G. Gnath  
Habitat Biologist  
Habitat and Restoration Division  
(907) 267-2284

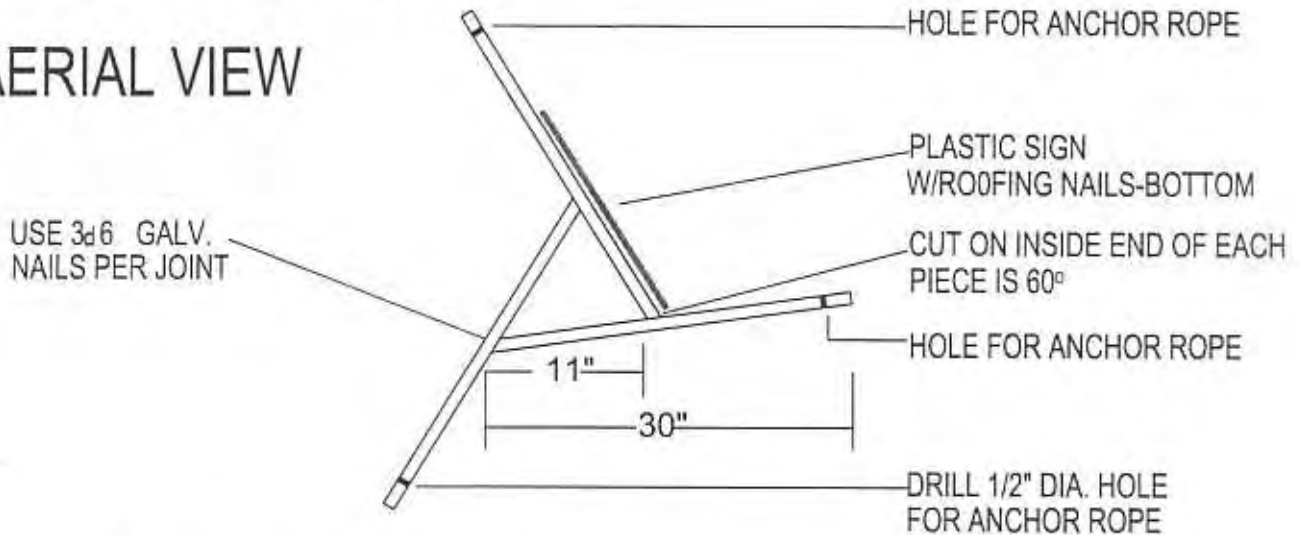
cc: R. Thompson, DNR/DL  
A. Samet, DNR/DL  
D. Kelley, DNR/DL  
S. Dunaway, DNR/DM  
P. Pinard, DEC  
P. Brna, SPCO  
D. Webster, MSB  
W. Wrede, City of Cordova  
M. Pearsall, KPB  
D. Dengel, City of Valdez

## APPENDIX #2

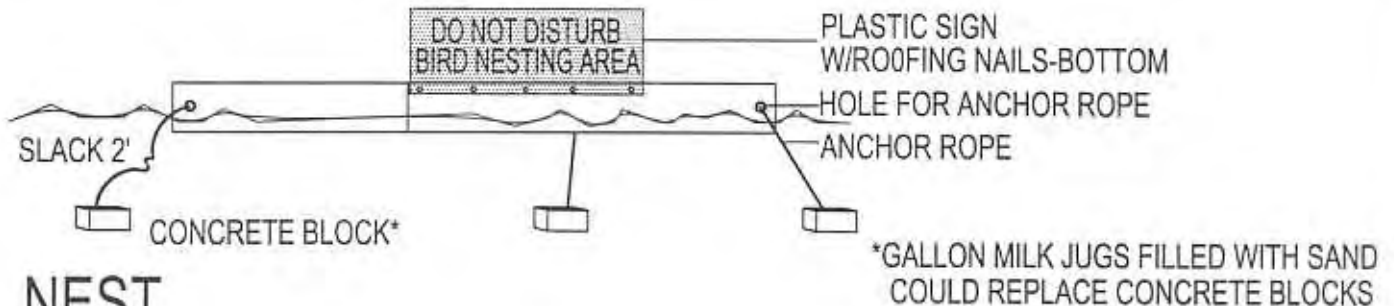
# SIGN FLOAT FOR LOON NESTS

(NOT LIKELY TO TURN OVER  
IN THE STRONGEST WIND)

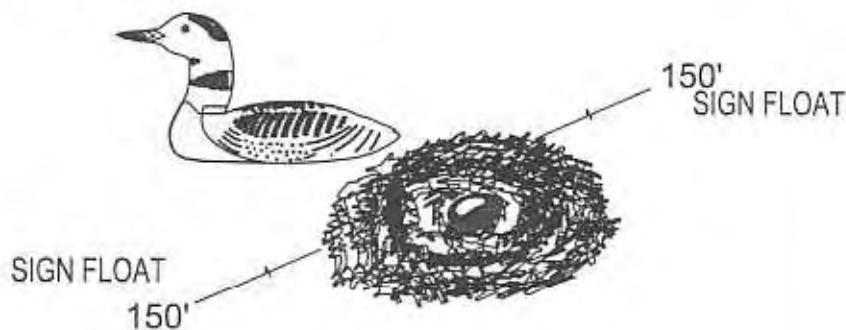
## AERIAL VIEW



## VIEW FROM WATER



## NEST



## MATERIALS LIST

3 - 1"x 4"x 30"  
WHITE PINE OR  
NO.WHITE CEDAR

9 - 6d.GALV BOX NAILS

5 - 1" ROOFING GALV. NAILS

1 - LOON SIGN

2 - 3 CONCRETE BLOCK \*  
FOR ANCHORS

ENOUGH 1/4" NYLON ROPE  
TO REACH BOTTOM OF LAKE  
FOR ANCHOR

DESIGNED BY:  
HERB CILLEY, PO BOX 348 TUPELO POINT, BOWLAKE, MORTWOOD, N.H. 03261

ENHANCED BY:  
MATANUSKA-SUSITNA BOROUGH SUPPORT SERVICE 1995

The platforms should be attached with two anchors a minimum of 150 feet from the nest (more, if needed to avoid disturbing the loons) and be clearly visible, yet not be a boating hazard. Signs should be removed after nesting is completed (usually by mid-July) each year to preserve their use. Signs should be stored over the winter in a dry area.

# LOON ALERT



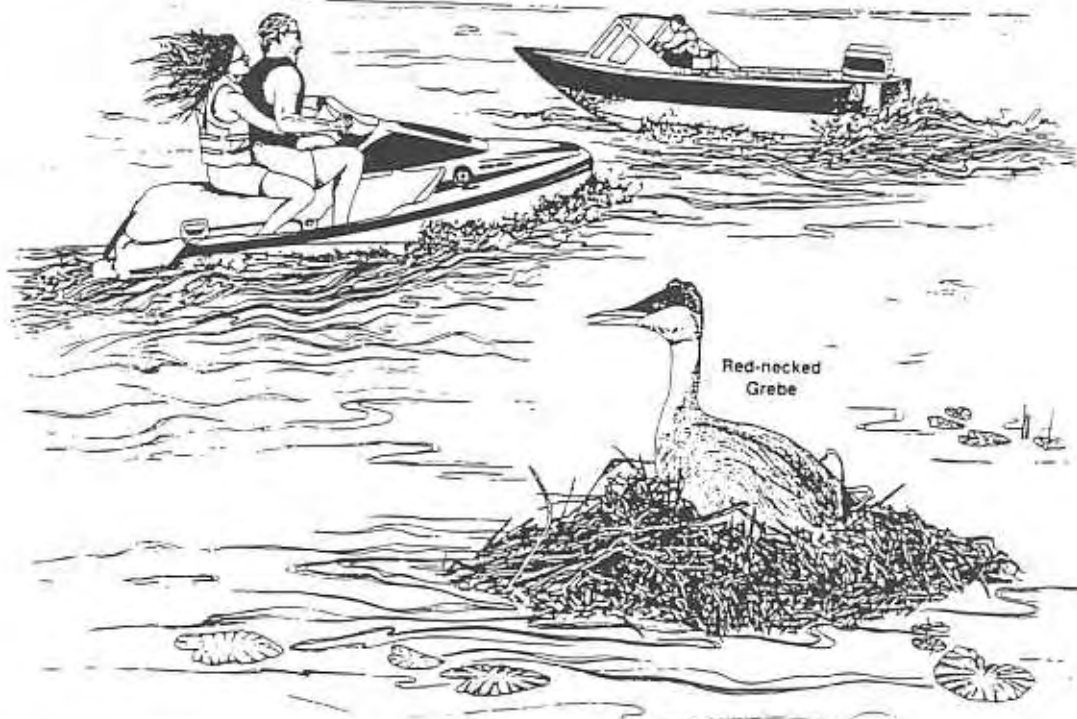
**Help keep this lake safe  
for loons and other wildlife:**

1. Watch loons from a distance.
2. Pick up fishing line and other litter that may entangle loons.
3. Keep your dog on a leash.

Breeding loons have declined or disappeared from other U.S. states due to human disturbance and habitat loss. Wildlife harassment is illegal. Please report violations to Fish and Wildlife Protection (State Troopers) or call (800) 478-3377. For loon information write: Alaska Department of Fish and Game, Division of Wildlife Conservation, 333 Raspberry Road, Anchorage, AK 99518.



# STEER CLEAR!



**BOATERS – Stay at least 100 feet away  
from nesting Red-necked Grebes.**

Grebes are duck-sized birds that nest on floating vegetation and debris in shallow water.

Wakes from watercraft will destroy their nests and kill their eggs and chicks.

Go slowly along shorelines and avoid nesting areas.

**– HELP PROTECT ALASKA'S WILDLIFE –**

Wildlife harassment is illegal. Report violations to Fish and Wildlife Protection (State Troopers) or call (800) 478-3377.

This sign was produced by a grant to the Alaska Watchable Wildlife Trust Fund, c/o Alaska Conservation Foundation, 430 W. 7th Avenue #215, Anchorage AK 99501 (907) 276-1917.

POSTED BY ALASKA DEPT. FISH AND GAME

