

SHIRLEY LAKE LAKE MANAGEMENT PLAN



ADOPTED
APRIL 2006

Matanuska-Susitna Borough
Department of Planning and Land Use

CODE ORDINANCE

By: Borough Manager
Introduced: 03/21/06
Public Hearing: 04/04/06
Amended: 04/04/06
Adopted: 04/04/06

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 06-074 (AM)

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING THE SHIRLEY LAKE, LAKE MANAGEMENT PLAN, AND AMENDING MSB 15.24.030, COMPREHENSIVE PLAN AND PURPOSES, AND 17.59, LAKE MANAGEMENT PLAN IMPLEMENTATION

BE IT ENACTED:

Section 1. Classification. Section 1, 2, and 7 of this ordinance are non-code, Sections 3 through 6 are of a general and permanent nature and shall become a part of the Borough code.

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

Section 3. Adoption of subparagraph. MSB 15.24.030(C)(31) is hereby adopted to read as follows:

(31) Shirley Lake, Lake Management Plan, adopted 2006.

Section 4. Adoption of subparagraph. MSB 17.59.060(B)(2)(u) is hereby adopted to read as follows

(u) Shirley Lake.

Section 5. Adoption of subparagraph. MSB 17.59.060(C)(2)(e) is hereby adopted to read as follows:

(e) Shirley Lake.

Section 6. Adoption of subparagraph. MSB 17.59.060(D)(2)(r) is hereby adopted to read as follows:

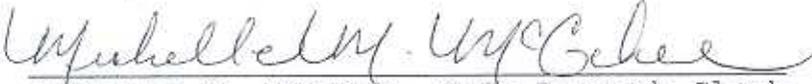
(r) Shirley Lake.

Section 7. Effective date. This ordinance shall take effect upon adoption by the Matanuska-Susitna Borough Assembly.

ADOPTED by the Matanuska-Susitna Borough Assembly this 4 day of April, 2006.


TIMOTHY L. ANDERSON, Borough Mayor

ATTEST:


MICHELLE M. MCGEHEE, CMC, Borough Clerk

(SEAL)

PASSED UNANIMOUSLY: Woods, Allen, Colberg, Kvalheim, Bettine, Colver, and Vehrs.

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	PURPOSE	1
1.2	SCOPE	1
1.3	PROCESS	2
1.4	ENFORCEABLE CODE RESTRICTION	3
2.	INVENTORY OF EXISTING CONDITIONS	3
2.1	LOCATION.....	3
2.2	PHYSICAL CHARACTERISTICS OF THE LAKE	5
2.3	LAND USE AND LAND OWNERSHIP	9
2.4	SOCIAL/DEMOGRAPHIC – USAGE	11
2.5	EXISTING PLANS AND LAKE MONITORING PROGRAMS	11
2.6	EXISTING REGULATIONS.....	12
3.	ISSUES AND CONCERNS	17
4.0	GOALS.....	17
4.1	WATER QUALITY AND WILDLIFE PROTECTION.....	17
4.2	PRESERVATION OF QUIET RECREATIONAL AND RESIDENTIAL CHARACTER	17
4.3	MAINTENANCE OF ACCESS	18
4.4	EDUCATE RESIDENTS AND VISITORS.....	18
5.0	RECOMMENDATIONS.....	18
5.1	MAINTAIN WATER QUALITY AND PROTECT WILDLIFE	18
5.2	PRESERVE QUIET RECREATIONAL AND RESIDENTIAL CHARACTER	19
5.3	MAINTAIN CURRENT ACCESS.....	19
5.4	EDUCATE RESIDENTS AND VISITORS.....	19
6.0	IMPLEMENTATION	20
FIGURE 1:	COMMUNITY COUNCIL MAP	5
FIGURE 2:	LOCATION MAP.....	6
FIGURE 3:	LAKE DEPTH PROFILE AND ACCESS	8
FIGURE 4:	LAND USE AND OWNERSHIP	10
FIGURE 5:	GENERAL SETBACK REQUIREMENTS AND LOT SIZE REQUIREMENTS	16
APPENDIX A:	VEHICLE MOVEMENT ON FROZEN WATER SURFACES WITHIN SOUTH-CENTRAL ALASKA	
APPENDIX B:	BIRD NESTING AREA BUOYS, LOON ALERT! AND STEER CLEAR! SIGNS	
APPENDIX C:	VOLUNTARY BEST MANAGEMENT PRACTICES FOR DEVELOPMENT AROUND WATERBODIES	

1 Introduction

1.1 Purpose

This lake management plan presents goals and objectives to balance the physical and social demands of those that live or recreate on Shirley Lake with the need to maintain a healthy and productive lake ecosystem. The lake management plan process was established by the Matanuska-Susitna Borough to provide a means to reduce user conflicts, balance various environmental and recreational demands placed upon a lake, and protect the health, safety and welfare of its residents and lake users.

1.2 Scope

Lake management plans provide guidance for how the surface of the lake is used and makes recommendations concerning public access and education of lake users to meet the goals of the plan. Certain aspects of the plan can be implemented as enforceable regulations through MSB Title 17.59. The borough assembly adopted guidelines for appropriate regulations for different sizes of lakes as follows:

LAKES 75 SURFACE ACRES OR LESS

May recommend the following guidelines:

- ✓ No wake zone - 100 feet from shoreline
- ✓ Quiet hours - 10 p.m. to 8 a.m.
- ✓ Personal watercraft restriction
- ✓ 10 horse power limit*
- ✓ No wake speed zone on lake*

* These options *may* be recommended on a daily time share basis.

LAKES MORE THAN 75 SURFACE ACRES TO 200 SURFACE ACRES

May recommend the following guidelines:

- ✓ No wake zone - 100 feet from shoreline
- ✓ Quiet hours - 10 p.m. to 8 a.m.
- ✓ Personal watercraft restriction
- ✓ 10 horse power limit**
- ✓ No wake speed zone on lake**

**These options *must* be on a daily time share basis.

LAKES MORE THAN 200 SURFACE ACRES

May recommend the following options:

- ✓ No wake zone - 150 feet from shoreline
- ✓ Quiet hours - 11 p.m. to 8 a.m.

FOR ALL LAKES

- ✓ Access recommendations will be consistent with traditional use and current level of access development.
- ✓ Quiet hours apply to repetitive recreational activities such as water skiing and racing or high speed activities NOT to moderate speed point to point transportation.
- ✓ No wake is defined as the slowest speed a boat or personal water craft can go and still maintain safe operation and maneuverability.
- ✓ Time share means restrictions do not apply on Thursday, Friday, Saturday, and all three day weekends mandated by federal holiday (Memorial Day, Fourth of July, and Labor Day).
- ✓ Ice house means a structure utilized for ice fishing and left on the frozen surface of a lake for more than 24 hours.
- ✓ Motor vehicles means automotive vehicles with rubber tires for use on highways.
- ✓ Motorized watercraft use means the operation of watercraft powered or propelled by a force other than human muscle power, gravity, or wind. This definition does not include airplanes as motorized watercraft when landing, taking off, or taxiing on a water body.
- ✓ Personal watercraft includes vehicles such as jet skis, wave runners, and similar acrobatic or stunt equipment.
- ✓ A wake is the track in the water left after the passage of watercraft or other vehicle.
- ✓ A special permit is a permit approved by the planning director for a special purpose and is limited to a specific time to conduct an event that would otherwise involve activities in violation of MSB 17.59.

These guidelines may be varied due to lake configuration, lake depth, or other considerations through the adoption of individual lake management plans.

Shirley Lake is 121 surface acres in size, and therefore, falls within the guidelines for lakes more than 75 surface acres to 200 surface acres.

1.3 Process

Lake management plans are initiated by local residents or property owners. The initiators circulate a petition to get the required number of signatures on the petition required by code.

Once a valid petition has been filed with the department, a ballot is mailed to all property owners within 600 upland feet of the affected lake. This ballot serves as notice of the receipt of a valid petition and requests a vote to begin the lake management process. The borough begins a lake management plan if the majority of property owners responding to the mailed ballot vote in favor of developing a lake management plan.

Borough Planning staff collect background information on the lake and encourage adjacent property owners and users to participate in the planning process. Borough staff, lake users, lake residents, and property owners identify issues and concerns and establish goals and objectives that are incorporated into the draft plan.

The draft plan is reviewed by the public and community council and by the borough Planning Commission. The Commission considers all oral and written comments received in a public hearing and either recommends to the Assembly adoption of the plan as is, or with modifications, or recommends Assembly disapproval of the plan. The Assembly either adopts the plan as is or with modifications, or votes down the plan.

1.4 Enforceable Code Restriction

Most of the lake property owners and residents in attendance at the meetings expressed a preference for enforceable restrictions on:

- Quiet hours
- No wake zone 100 feet from shore
- Personal watercraft restriction

These restrictions will protect the quiet enjoyment of the properties and allow continued use of the lake by residents and visitors in keeping with traditional practices. The plan will also help future lake users to fish, boat or recreate in a manner that protects neighborhood values.

2. **Inventory of Existing Conditions**

2.1 Location

Shirley Lake is located in the vicinity of Willow, Alaska, at about Milepost 67 of the Parks Highway. It is one of a number of lakes that form a lake system adjacent to the Nancy Lake State Recreation area. This complex is bordered by the Susitna River, Talkeetna Mountains and Little Susitna River. (Figures 1 & 2).

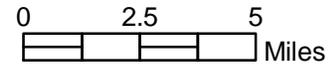
According to narrative on the ADF&G bathymetric map (Figure 3), Shirley Lake is generally accessed by a small foot path at the end of Canoe Way, by taking Shirley Lake road east from Crystal Lake Road, and traveling around

the south end of the lake. There is a vacant borough parcel at the north east end of the lake with a dedicated public easement for year-round recreational use which passes along the north end of the parcel, but there is no developed access through that parcel to the lake.

WILLOW Community Council

Legend

-  Community Council Boundary
-  City Boundary



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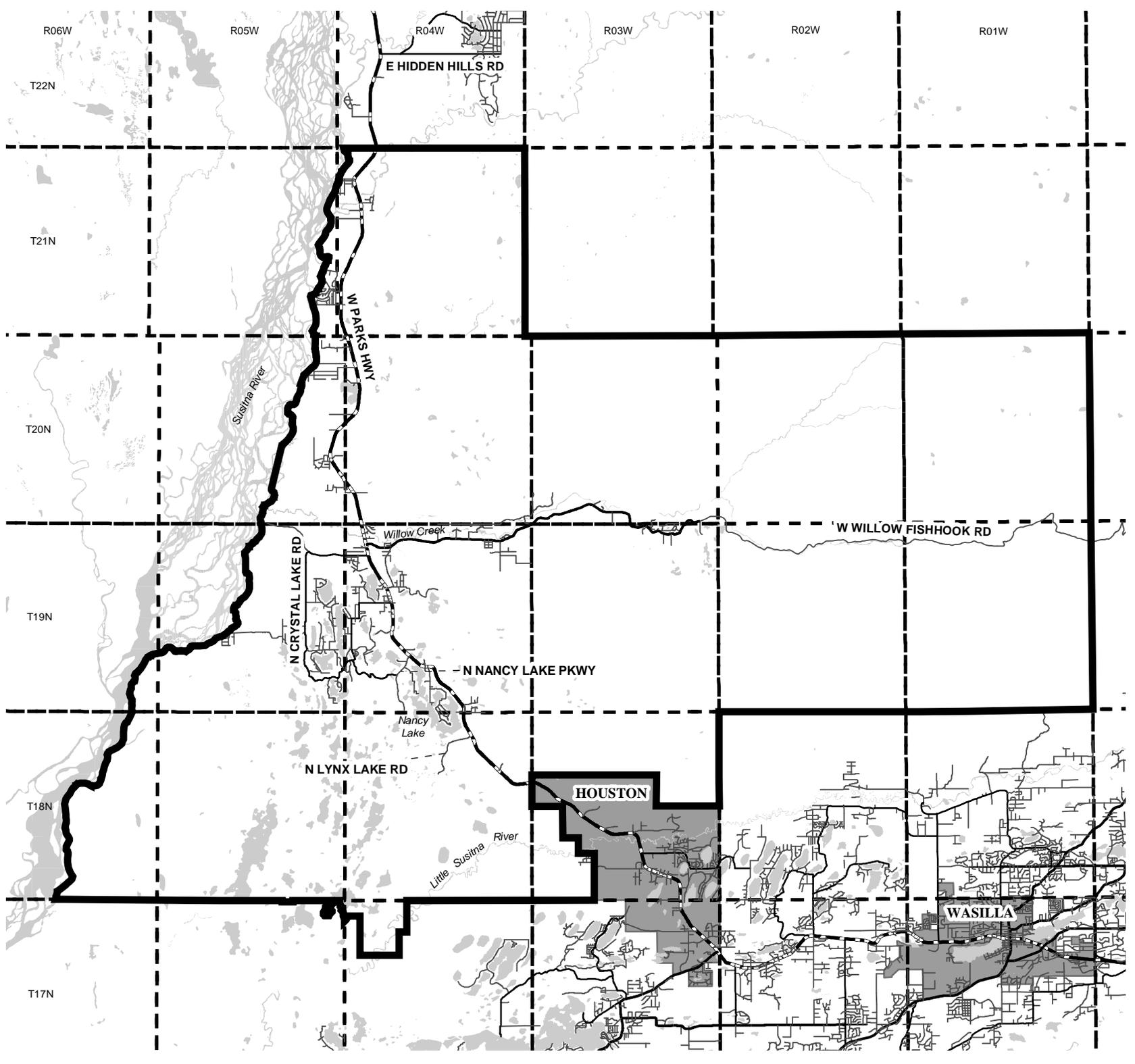
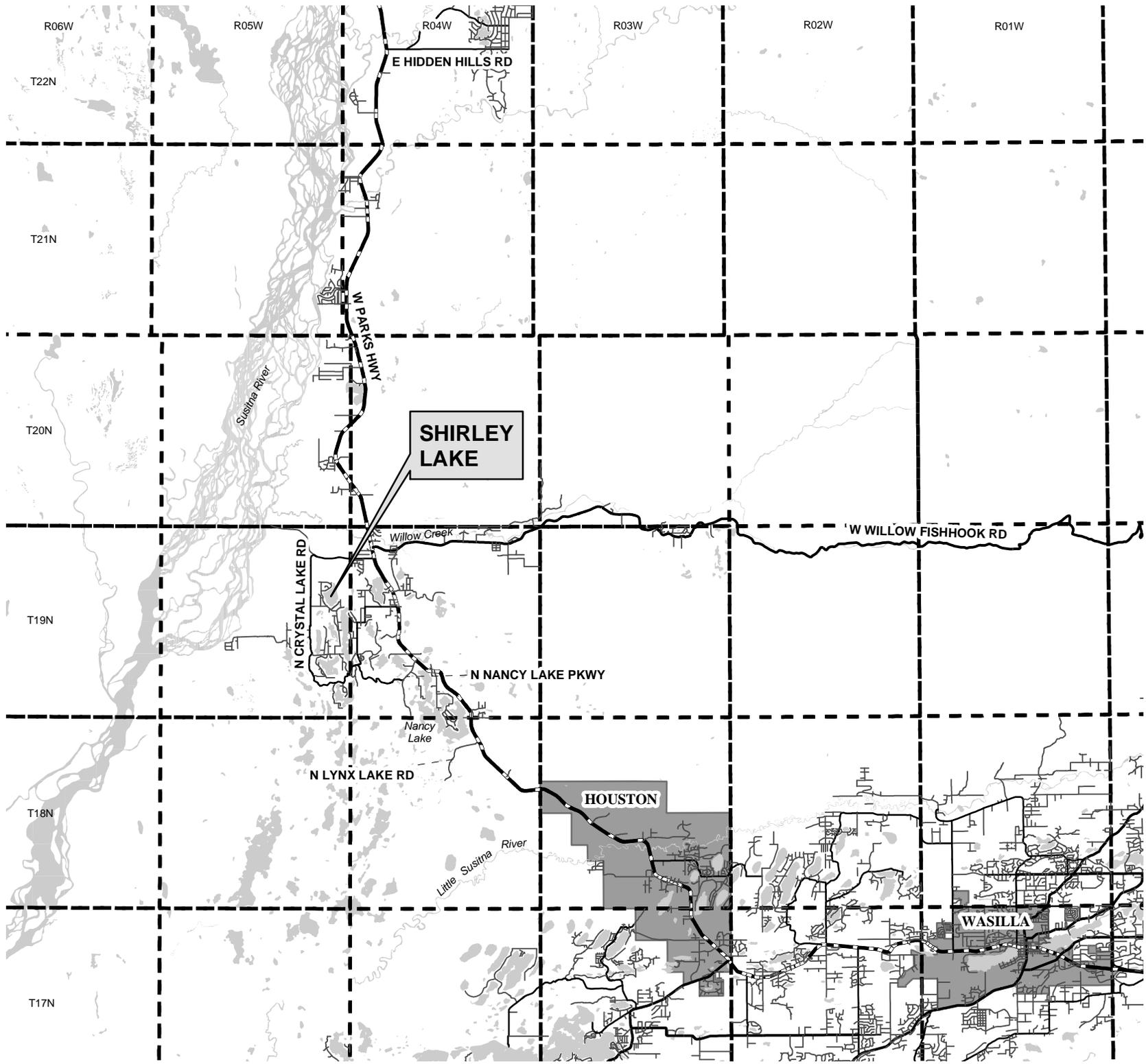


Figure 2 SHIRLEY LAKE MANAGEMENT PLAN



 City Boundary



0 2.5 5 Miles




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2.2 Physical Characteristics of the Lake

Shirley Lake is typical of glacial moraine formed lakes in the area. These lakes are situated in mixed gravels and sands with well defined shorelines in mixed spruce/birch forest habitats. The lake hydrology is dominated by subsurface flows of groundwater. Surface creek flows are a minor component in relation to the size of the lake. The surrounding topography is relatively flat, with most properties having about 4-6 feet elevation from the lake surface.

The lake is part of the Willow Creek Drainage. The depth of the lake is relatively shallow (10-20 feet) according to the Alaska Department of Fish and Game bathymetric information (Figure3). There is a small unnamed stream flowing into Shirley Lake from Long Lake, and Shirley Creek is the outlet creek at the north end of the lake, which drains into Willow Creek, approximately 1.2 miles away.

The lake substrate is mixed cobble and gravels with fine sands and silts. Shorelines are mixed with established vegetation stabilizing undeveloped waterfronts. Aquatic vegetation is localized adjacent to wetlands. Much of the privately owned shoreline is developed with residential homes, in a mixture of permanent residences and weekend recreational homes.

The lake ecology is fairly productive and supported rainbow trout as documented by the Alaska Department of Fish and Game in the 1980's and 1990's. Harvest data taken by the state in 1997 shows the presence of Northern Pike. According to ADF&G bathymetric information, the lake is a major rearing area for juvenile coho salmon. Shirley Lake appears typical of glacial moraine lakes that are in successional stages from low nutrient (oligotrophic) from their formation as glaciers receded to high nutrient (eutrophic) systems with established marshes, aquatic plants and organic lake bottoms. Shirley Lake can be placed toward the low nutrient end of the successional scale.

Water quality problems have not been reported and casual observations by borough staff report no problems.

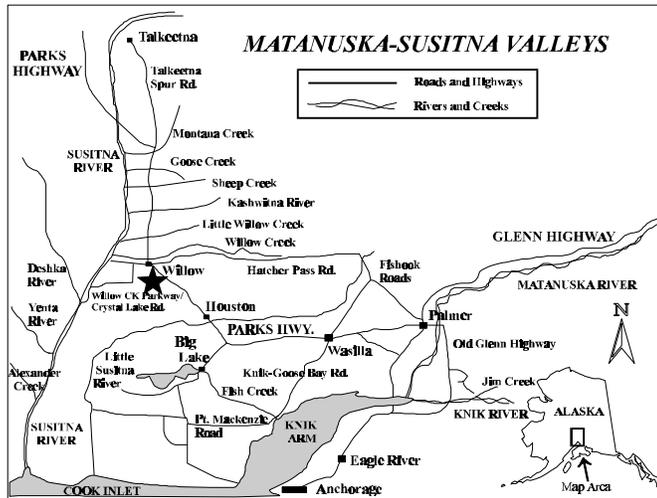
Table 1: Shirley Lake Physical Characteristics

Surface Acres	121
Volume	1707 acre feet
Mean Depth	14.1 feet
Maximum Depth	23 feet
Shoreline Length	1.8 miles

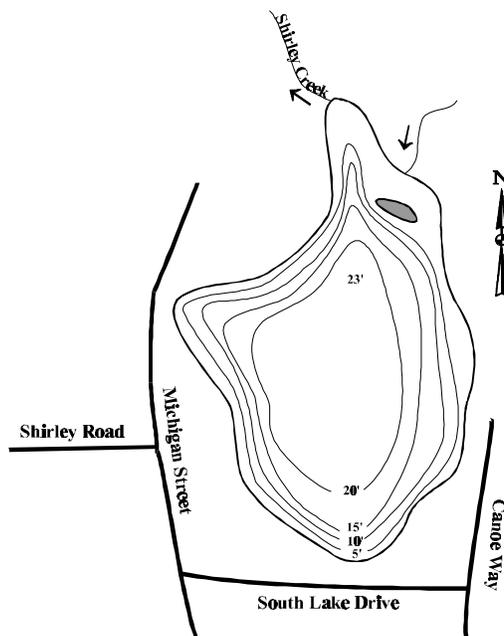
Source: Alaska Department of Fish and Game

SOUTHCENTRAL LAKES MAP SERIES

State of Alaska
 Department of Fish and Game
 Sport Fish Division
 1800 Glenn Hwy #4
 Palmer, AK 99645
 (907) 746 - 6300



SHIRLEY LAKE ★



U.S.G.S. Map Ref.	Tyonek C-1, T19N, R5W, S13	Geographic Location	61°44'N, 150°06'W
Elevation	190'	Surface Acres	121
Volume	1,707 Acre Ft.	Maximum Depth	23'
Mean Depth	14.1'	Shoreline Length	1.8 Miles
Game Fish Present	Rainbow Trout, Coho Salmon, Northern Pike		

SHIRLEY LAKE PUBLIC ACCESS: Mile 70.8 Parks Hwy. West 2.0 miles on Willow Creek Parkway to Crystal Lake Road. Left on Crystal Lake Rd. 1.8 miles to Shirley Lake Road. Left on Shirley Lake Rd. 0.4 mile to Michigan Street. Right on Michigan St. 0.2 mile to South Lake Drive. Left on South Lake Dr. 0.2 mile to Canoe Way. Left on Canoe Way 0.1 mile to end of road. Short trail leads to lake. **NOTE:** Limited public access. Majority of lake shoreline is privately owned. Please respect private property. Keep lake and access sites free of litter.

2.3 Land Use and Land Ownership

A majority of the lots with frontage on Shirley Lake (Figure 4) are privately owned. Most of those lots contain residences, some recreational, and some permanent full time residences. There is one large borough owned parcel at the northeast end of the lake, but there is no developed access to the lake through that parcel. The parcel is classified by the borough as FML – Forest Management Lands, which is defined as *those lands which, because of physical, climatic, and vegetative conditions, are presently or potentially valuable for the production of timber and other forest products. Forest management shall emphasize the multiple use concept.* There is still one vacant, privately owned 24-acre parcel on the east shore of the lake.

Plats and covenants for the Shirley Lake Subdivision located at the north end of the lake, show that there are two ten foot wide pedestrian walkways, between Lots 9 and 10, and Lots 20 and 21 of Block 4 from Lake Shore Circle to the lake. The plat also shows a lot which has been dedicated as a *park* between Lots 3 and 4, of Block 4. Assessment records indicate that this parcel is owned by the Shirley Lake Subdivision property owners. A note on the plat dedicates these two pedestrian walkways and park “...for the exclusive use of those individuals having a vested interest in the subdivision.” The plat for this subdivision also shows a small cul-de-sac at the north end of the lake, off W. Lakeshore Circle, which is called N. Amy Way, and has 40 feet of the cul-de-sac bulb as lake frontage.

In 1993, the section line through several of the lots in Shirley Lake Subdivision was vacated, via plat 93-144. That plat indicates one of the ten foot walkways noted above as “public access to the lake.” However, based on the note on that plat which states: “*Diagonally hatched area indicates portion of section line easement being vacated. It is not the intent of this plat to vacate any other dedicated public rights-of-way or easements*”, borough planning and assessment staff concludes that the plat vacating the section line easement does not affect the plat note on the original plat.

The South Shirley Lake subdivision plat and protective covenants and restrictions show that the access used at the end of Canoe Way is actually platted on lot 25 as a “*park easement*”, and identified in the covenants as a private park, to be “...used only by those persons who have recorded ownership in the South Shirley Lake subdivision, solely for picnicking on and pedestrian access to Shirley Lake...” Lot 25 is privately owned.

Figure 4 SHIRLEY LAKE MANAGEMENT PLAN

Legend

Land Use

j Residential Structure

q Aircraft Transportation

Ownership

 Borough

 Private

 No Data

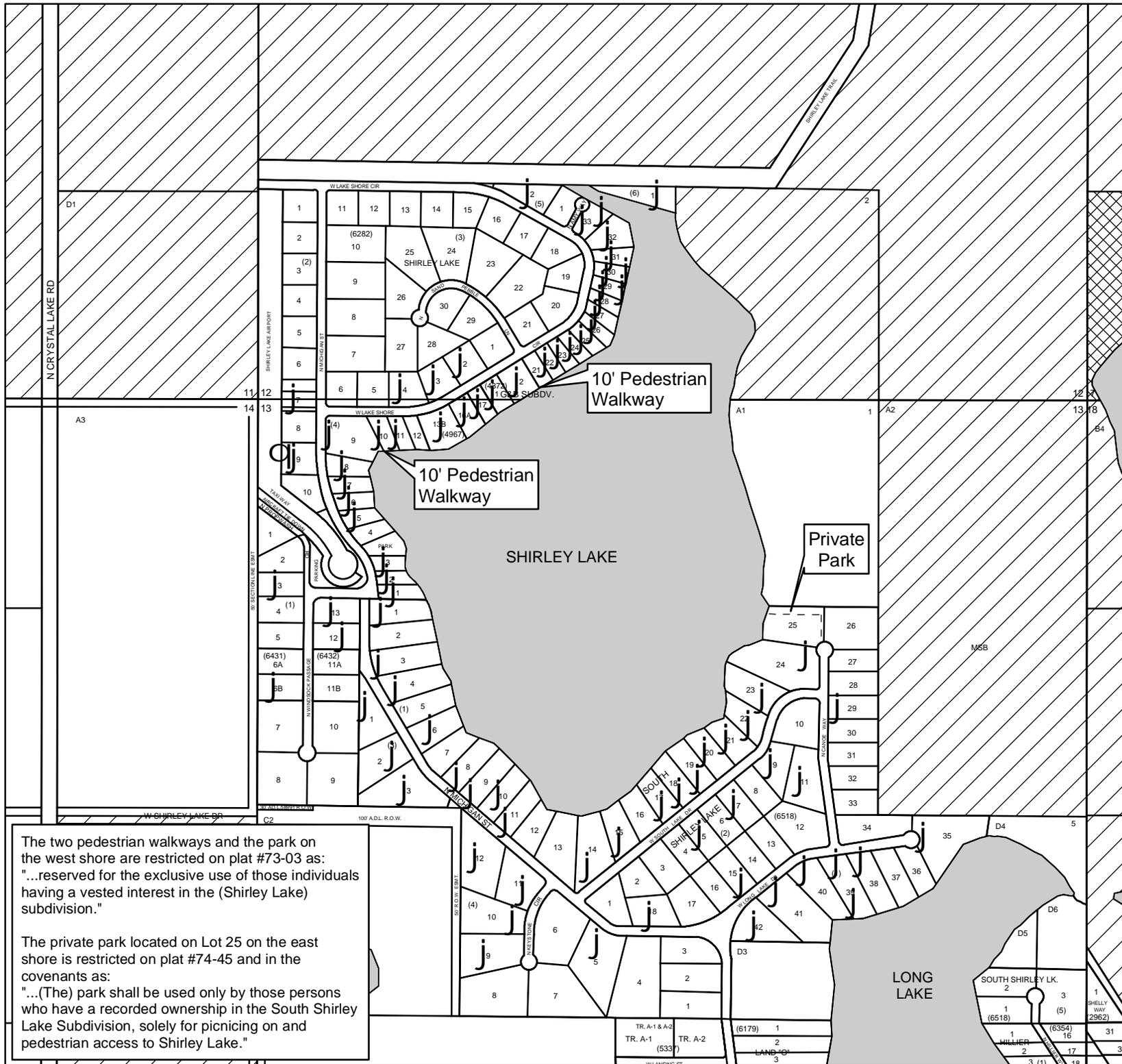


0 250 500 1,000
Feet



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MSB Office of Information Technology/GIS
March 21, 2005



The two pedestrian walkways and the park on the west shore are restricted on plat #73-03 as: "...reserved for the exclusive use of those individuals having a vested interest in the (Shirley Lake) subdivision."

The private park located on Lot 25 on the east shore is restricted on plat #74-45 and in the covenants as: "...(The) park shall be used only by those persons who have a recorded ownership in the South Shirley Lake Subdivision, solely for picnicing on and pedestrian access to Shirley Lake."

2.4 Social/Demographic – Usage

The present human use of Shirley Lake may be characterized as being primarily quiet, recreational and residential. The residential lots surrounding the lake range in size from approximately 20,000 square feet to 3 acres, and most have residences on them. The Shirley Lake subdivision plat was recorded in 1972, and the South Shirley Lake subdivision plat was recorded in 1973. The only other unsubdivided parcels on the lake are the borough parcel at the north east shore, and the privately owned parcel just to the south of that, also on the east shore.

Existing access to the lake is not well advertised and can be characterized as a rough trail. The existing access route goes through a privately owned parcel of land which is indicated on the plat as “...to be used only by those persons who have recorded ownership in the South Shirley Lake Subdivision, solely for picnicking on and pedestrian access to Shirley Lake...” Those in attendance at the meetings prefer to keep the access as rustic and not to provide improvements to the trail, consistent with the plat note.

Approximately three float planes use the lake regularly during the summer months, for non-commercial activity. This use has been generally accepted by residents and property owners, and no concerns or conflicts have been reported at this time.

2.5 Existing Plans and Lake Monitoring Programs

State

The State plan affecting the Shirley Lake area is the Susitna Area Plan (SAP). The SAP, adopted in June 1985, contains management intent for State and Borough lands within the SAP, an area of approximately 15.8 million acres.

ADFG does not stock Shirley Lake. ADFG records show that rainbow trout were present in the lake during the 1990's, and that northern pike appeared in 1997, at which time further data became unavailable.

Borough

Borough plans that address Shirley Lake in some manner include the Borough-wide Comprehensive Plan, adopted in 1971, the Borough-wide Long Range Transportation Plan, Public Facilities Plan, and the MSB Recreational Trails Plan.

The Borough-wide comprehensive plan does not make specific recommendations for Shirley Lake. Rather, the 1971 plan makes a series of

general recommendations for the Willow area do not reflect the current social, economic or development realities.

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 Shirley Lake area in some way, but the Parks, Recreation, and Open Space; and Trails elements have the most potential impact.

Lake Monitoring Program

The borough coordinates a lake monitoring program to monitor water quality, identify problems that degrade water quality, monitor the biological and hydraulic functions of the lake, and establish baseline trends to assist planning. The program depends on local volunteers to gather information and take samples for further testing. In addition, lake monitors identify fish and wildlife habitat and report environmental impacts of natural or man-made origin. Residents on Shirley Lake are not currently participating in the lake monitoring program.

2.6 Existing Regulations

This section describes the principle regulations affecting use and development in the Shirley Lake area.

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 “taking” of migratory birds. Destruction of nest sites, eggs, or the birds themselves are a violation of the Act.

Operation of aircraft, both private and commercial, is regulated by the Federal Aviation Administration.

State

The Alaska Department of Environmental Conservation (DEC) provides regulations for wastewater disposal. DEC wastewater/septic 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, 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 require a Title 41 permit from the Alaska Department of Natural Resources (DNR). Since 1994, the Habitat and Restoration Division of the Alaska Department of Fish & Game issued a one-year general permit, renewed annually, and currently DNR issues such permits allowing vehicle movement on frozen water surfaces in south-central Alaska without a special permit (Appendix A). Finally, the general ADF&G fishing regulations apply to Shirley Lake.

A navigable or public waterbody includes water suitable for commercial navigation, floating of logs, landing and take-off of aircraft, and public boating, trapping, hunting of waterfowl and aquatic animals, fishing, or other public recreational purposes. Shirley Lake meets the definition of public waterbody.

Land that has been or is currently owned by the State of Alaska, and is adjacent to a navigable or public waterbody has special access requirements. Alaska Statute (AS 38.05.127) requires access to the surface waters of navigable and public waterways, typically through a "to" easement. Additionally, land adjacent to navigable or public waters may be subject to an "along" easement, which provides a 50-foot public use easement along the waterway adjacent to the ordinary high-water mark. These easements are created when the State or Borough obtains patents to their lands and stay with the property when the land is disposed of. State and Borough lands transferred prior to the adoption of AS 38.05.127 are not usually subject to the "to" and "along" easements. Also, lands patented by the federal government are not usually subject to the "to" and "along" easements.

Neither of the Shirley Lake Subdivisions have the "to" and "along" easements. However, the deed for the large privately owned parcel on the east shore is subject to a 50-foot easement along the ordinary high water mark of Shirley Lake, and if the borough owned parcel is ever transferred into private ownership, a 50-foot "to" and "along" easement will be created upon transfer.

Borough

Several Borough-wide ordinances address the development and use of land adjacent to Shirley 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.

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 Shirley 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 the development at Shirley 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 (Figure 5). If community septic system is provided, then the minimum lot size is 20,000 square feet and minimum width may be eighty-five feet.

Zoning regulations (Title 17) that are of special note to development activities at Shirley 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 any public right-of-way and ten feet from side and rear 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 waterbody or water course (Figure 5). 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.

Many of the lots within both Shirley Lake, and South Shirley Lake subdivision are less than the current 40,000 square foot minimum. However, at the time they were platted and some of the homes constructed, in the early 1970's, the minimum lot size was 20,000 square feet and the 75 foot waterbody setback was not in affect. As a result, many of these lots are preexisting legal nonconforming lots, and many of the older structures may qualify as a legal nonconforming structure, if they go through the borough established process and meet the requirements in MSB 17.80 Nonconforming Structures.

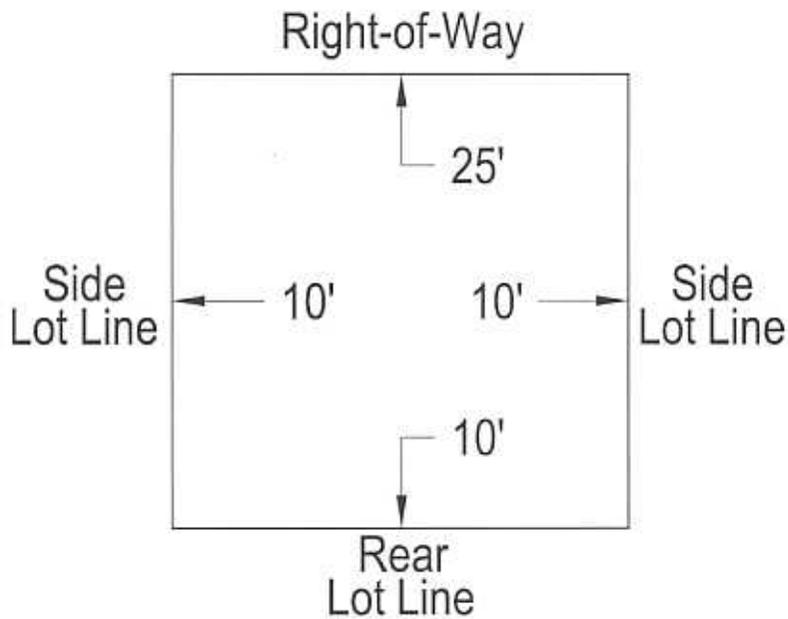
This lake management plan does not have an affect on the status of any of these preexisting legal lots or structures. All future subdivisions and construction must comply with current borough regulations.

Private

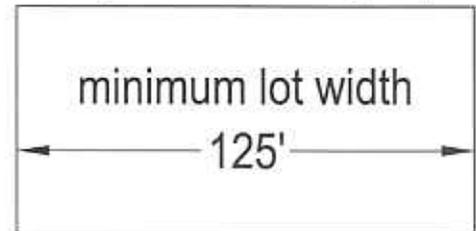
Private regulations which exist in the Shirley Lake area would be in the form of subdivision covenants. Both Shirley Lake and South Shirley Lake Subdivisions are located adjacent to the lake, and the borough has copies of their recorded subdivision covenants. For current information about covenants, the reader is referred to the State of Alaska Records Office.

Shirley Lake is within the Willow Community Council Area and will be included in any comprehensive planning started by the Willow Area Community Organizations (WACO). In addition, borough code requires that the Shirley Lake Draft Management Plan be submitted to WACO for review and comment prior to consideration by the Planning Commission.

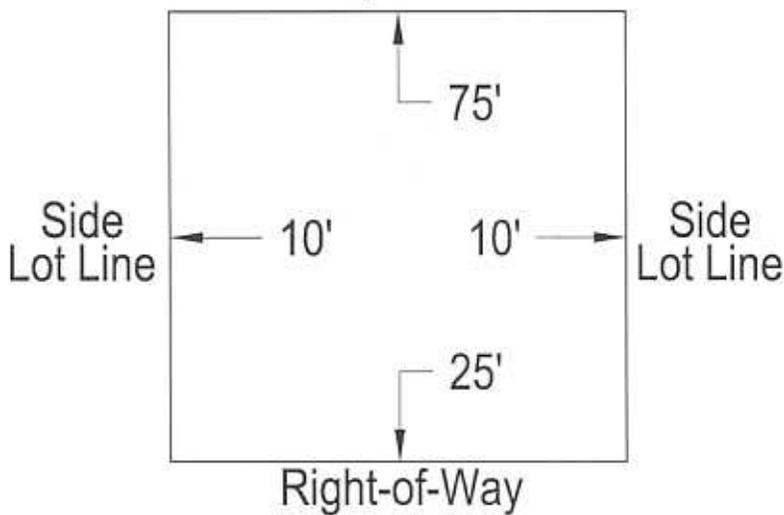
Figure 5
General Setback Requirements
and
Lot Size* Requirements



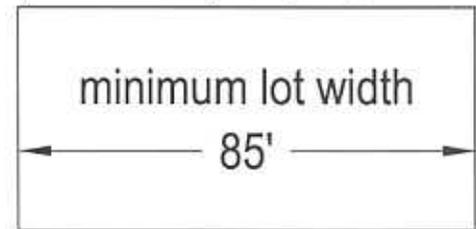
Ordinary High Water Line
of Lake (no community septage)



Ordinary High Water Line
of Water Body or Watercourse



Ordinary High Water Line of
Lake (community septage available)



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

3. Issues and Concerns

The issues and concerns identified by residents include:

- ✓ Protection of the quiet residential/recreational character of the lake
- ✓ Increasing noise and disturbance as a result of development and new residents
- ✓ The potential for erosion and harm to nesting waterfowl caused by wakes
- ✓ Maintaining current access

A majority of those attending the meetings said that the quiet, residential character of the lake should be protected. The present state of the lake may be characterized as a residential development having a quiet quality. The historical use of Shirley Lake has generally not included high powered motorized or personal watercraft. Some property owners are concerned that if public access to the lake is improved to the point of providing boat launch capabilities, the lake will be used increasingly by watercraft with large motors and jetskis/wave runners. Increased full time residency may also result in greater impacts of noise and wakes degrading the shoreline and impacting views.

4.0 Goals

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

4.1 Water Quality and Wildlife Protection

Shirley Lake is a significant natural resource. It is the desire of property owners, residents, and users of Shirley Lake to maintain or improve the lake's water quality and to ensure that recreational uses of the lake are compatible with wildlife and habitat.

4.2 Preservation of Quiet Recreational and Residential Character

It is the desire of property owners, residents, and users of Shirley Lake to preserve the quiet and peaceful residential character of the lake, while allowing some recreational uses for both residents and visitors.

4.3 Maintenance of Access

It is the desire of property owners, residents, and users of Shirley Lake to maintain any public access to the lake as walk-in only.

4.4 Educate Residents and Visitors

It is the desire of property owners, residents, and users of Shirley Lake to utilize public education as a means by which to accomplish many of the other goals of the lake management plan, and to encourage responsible development on properties surrounding the lake.

5.0 **Recommendations**

5.1 Maintain Water Quality and Protect Wildlife

Certain uses, such as high powered motorized watercraft and personal watercraft (a.k.a. jet skis), can create wakes that contribute to shoreline erosion and disturb nesting waterfowl. Wake action may cause loon and grebe mortality by swamping active nests or by separating parents from chicks. Noise caused by large motors may also disturb nesting waterfowl. It is recommended that personal watercraft be prohibited, to reduce wakes and manage noise generation. It is also recommended that a 100 foot no wake zone be established.

Most individuals will not disturb a nest site when or if they are informed of its location and the proper behavior when near it. A number of techniques can be employed to provide the public with information about loons and grebes, including identifying individual nests and providing signage at lake access points. Residents and property owners agreed they prefer not to identify individual nests; however, they agree that educational information should be provided to property owners and lake users to inform them about proper "loon or grebe etiquette". (Appendix B)

Maintaining a natural shoreline habitat is one of the best ways to protect water quality. Natural shoreline vegetation provides erosion control, filtering of surface runoff, and habitat for fish and wildlife. It is recommended that lakeshore property owners follow Matanuska-Susitna Borough Voluntary Best Management Practices for Development Around Waterbodies (Appendix C).

In order to determine baseline water quality conditions on Shirley Lake, volunteers are encouraged to participate in the Borough's Lake Monitoring Program.

5.2 Preserve Quiet Recreational and Residential Character

Residents and property owners of the area initiated the lake management planning process to protect the quiet recreational and residential use of the lake. The majority of those attending the meetings agree that the use of personal watercraft, a.k.a. jetskis, is not a traditional use of Shirley Lake. It is incompatible with the quiet recreational and residential uses of the lake. Furthermore, personal watercraft pose a safety hazard for swimmers and boaters. Most residents and property owners who have attended the public meetings support a ban of personal watercraft. It is recommended that personal watercraft be prohibited on Shirley Lake.

The establishment of quiet hours, between 10 p.m. and 8 a.m., Sunday through Saturday, is also recommended to maintain the existing quiet nature and residential quality of the lake during all seasons.

5.3 Maintain walk-in access

Existing access to the lake is not well advertised and can be characterized as a rough trail. The existing developed access route goes through a vacant private parcel of land and is shown on the plat as a “park easement” and listed in the covenants as such. Should the use of this access be restricted to the use as indicated on the plat, the other identified public access point to the lake could be designated through the small cul-de-sac bulb at the north end of the lake, via N. Amy Way. Whichever access is used, it is the desire of those attending the meetings to maintain a rustic, walk-in only access.

5.4 Educate Residents and Visitors

It is recommended that the following methods be used to educate residents and visitors to Shirley Lake about use restrictions and best management practices:

Post and maintain signs at any public access point that inform the lake users about code restrictions and non-code recommendations.

Mail or deliver notices to inform property owners and residents about code restrictions, and enclose information about non-code recommendations and the Voluntary Best Management Practices for Development Around Waterbodies.

Post lake restrictions along with any “Property for Sale” signs to inform potential buyers that lake restrictions are in place.

Inform residents about the process for reporting violations to the Borough Code Compliance Division.

6.0 Implementation

Lake management plans are implemented through a combination of regulations, public information, and best management practices. MSB 17.59 Lake Management Plan Implementation, implements adopted lake management plans, using the borough's citation authority. Specific recommendations of the lake management plans that are implemented through MSB 17.59 are: quiet hours, no wake zones, motorized water craft use, special permits, winter motor vehicles, and ice house registration. When the Shirley Lake, Lake Management Plan is adopted, MSB 17.59 will be amended to include the recommendations of the plan. Those recommendations of the plan that are not included in MSB 17.59 will be implemented through public information and best management practices.

Personal Watercraft Ban

To preserve the quiet residential and recreational uses of the lake, prevent shoreline disturbance, and protect nesting waterfowl, personal watercraft are prohibited from Shirley Lake. Personal watercraft includes vehicles such as jet skis, wave runners, and similar acrobatic or stunt equipment.

Quiet Hours

To maintain the existing quiet nature, residential quality and low impact use of the lake, quiet hours are established between the hours of 10 p.m. and 8 a.m. Sunday through Saturday. Quiet hours apply to repetitive recreational activities such as water skiing and racing or high speed activities and NOT to moderate speed point to point transportation.

No wake zone

To prevent shoreline erosion, reduce noise, and protect nesting waterfowl, a 100 foot no wake zone is established.

Public Information

Signs should be posted at the access point of Shirley Lake informing lake users of the regulations on the lake. Mail or deliver notices to inform property owners and residents about code restrictions, and enclose information about non-code recommendations. Inform residents about the process for reporting violations to the Borough Code Compliance Division.

Appendix A:

Vehicle Movement on Frozen Water Surfaces within South-central Alaska

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

Office of Habitat Management and Permitting

FRANK H. MURKOWSKI, GOVERNOR

1800 GLENN HIGHWAY, SUITE 12
PALMER, ALASKA 99645-6736

PHONE: (907) 745-7363

FAX: (907) 745-7369

FISH HABITAT PERMIT FH-04-IV-0007-GP Revised

ISSUED: February 6, 2004

EXPIRES: December 31, 2004

General Public:

Re: Vehicle Movement on Frozen Water Surfaces within the Matanuska-Susitna Borough

Pursuant to AS 41.14.870(b), the Department of Natural Resources, Office of Habitat Management and Permitting (OHMP) 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 any motorized vehicles on frozen waters of various specified rivers, lakes, and streams within the Matanuska-Susitna Borough.

Categories of motorized vehicles covered by the GP include: any wheeled, tracked, or other ground effect motorized vehicles less than 12,000 pounds gross vehicle weight (GVW).

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 41.14.870(a). The rivers, lakes, and streams are utilized by salmon and other anadromous fish for spawning, rearing, or migration, and by resident fish species.

In accordance with AS 41.14.870(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 vehicles(s).
2. There shall be no vehicles or equipment operated in the open water of any specified lake, river, or stream under this GP.
3. The use of snow or ice bridges, access ramps, or cribbing to cross any specified river or stream is prohibited unless specifically approved, in writing, by the Department of Natural Resources, Office of Habitat Management and Permitting (OHMP) .

"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."

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 lake, river, or stream shall not be altered or disturbed in any way to facilitate access to, use of, or egress from their frozen surfaces.
6. No fuel shall be stored, nor vehicles fueled or serviced while on the frozen surface of below the ordinary high water line (vegetation line) of any specified lake, river, or stream. No vehicles leaking fuels, oils, hydraulic or cooling fluids shall be operated on the frozen surface or below the ordinary high water line of any specified lake, river, or stream.

The vehicle owner and the operator, or the legal guardian of minor dependents is responsible for the actions of contractors, agents, or other persons who participate in the approved activity. For any activity that deviates from this approval, the responsible party shall notify OHMP and obtain written approval in the form of an individual permit before beginning the activity. Any action taken which increases the scope of the approved activity or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this permit will be deemed a significant deviation from the approved activity. The final determination as to the significance of any deviation and the need for an individual permit is the responsibility of OHMP. Therefore, it is recommended that OHMP be consulted immediately when a deviation from the approved activity is being considered.

This letter constitutes a permit issued under the authority of AS 41.14.870. 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 and the Matanuska-Susitna Borough.

The operation of wheeled or tracked equipment of frozen waters has been found consistent with the Alaska Coastal Management Program (ACMP) under the standard conditions contained in General Concurrence-5 (attached).

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

The recipient of this permit (the responsible party or permittee) shall indemnify, save harmless, and defend the OHMP, 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 permit. However, this provision has no effect if, and only if, the sole proximate cause of the injury is the OHMP's negligence.

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

Sincerely,

Dick LeFebvre, Deputy Commissioner

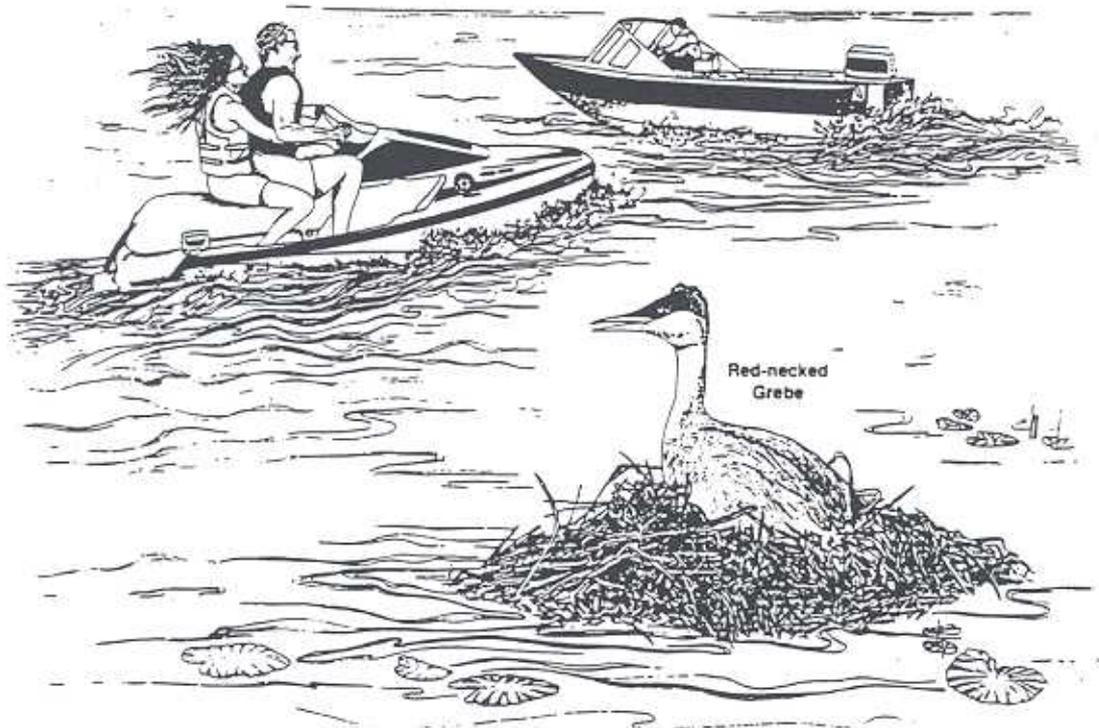
By: Jeffrey C. Davis, Habitat Biologist
Office of Habitat Management and Permitting

Enclosure: General Concurrence GC-5

cc: M. Agnew, ABWE
S. Duncan, EPA
K. Hudson, MSB
J. Jones, ATS
S. Joy, USCOE
K. Kruse, DNR/DML&W
B. Lance, NMFS
T. Oleck, ABWE
A. Rappoport, USFWS
T. Rumfelt, ADEC
D. Rutz, ADF&G
R. Thompson, DNR
C. Yoder, ABWE
C. Zuelow-Osborne, OPMP

Appendix B:
Bird nesting area buoys, Loon Alert! and Steer Clear! signs

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



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.

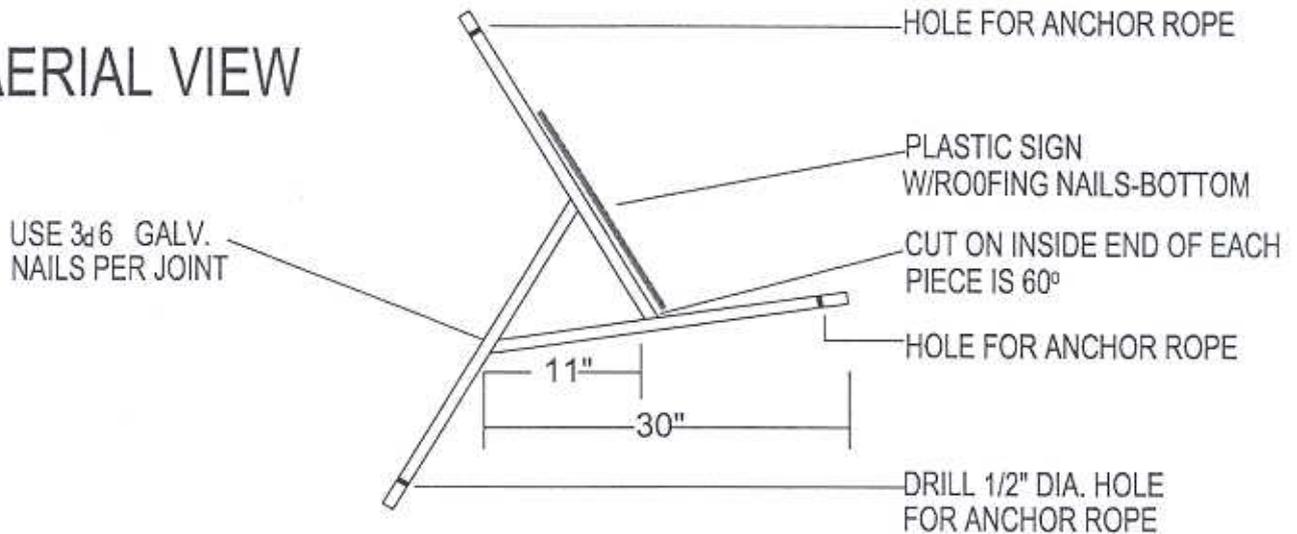
Breeding loons have declined or disappeared from other U.S. states due to human disturbance and habitat loss. Wildlife harassment is illegal. Please report violations to Fish and Wildlife Protection (State Troopers) or call (800) 478-3377. For loon information write: Alaska Department of Fish and Game,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



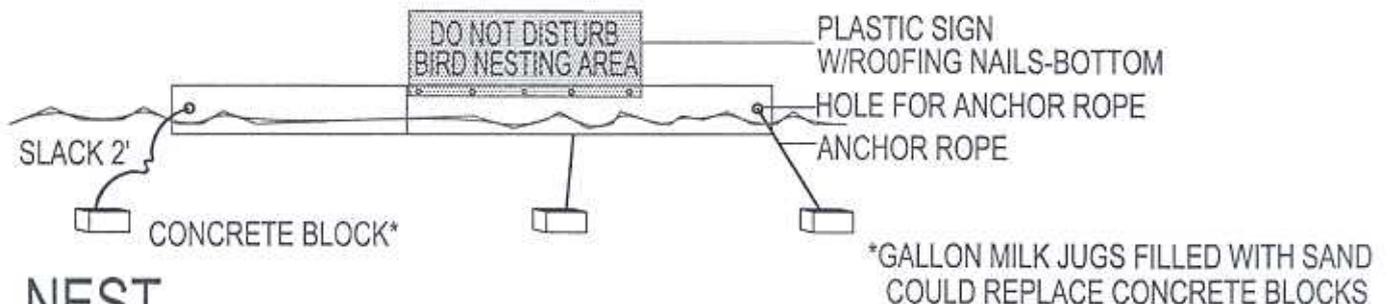
SIGN FLOAT FOR LOON NESTS

(NOT LIKELY TO TURN OVER
IN THE STRONGEST WIND)

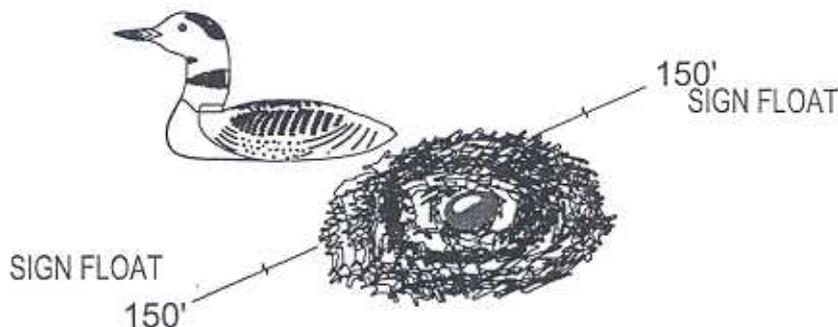
AERIAL VIEW



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 CALLEY, PO BOX 348 TUPELO POINT, BOWLAKE, NORTHWOOD, 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.

Appendix C:

Volunteer Best Management Practices for Development Around Waterbodies



HOW CAN YOU HELP PROTECT WATER QUALITY?

Voluntary Best Management Practices For Development around Waterbodies

Best Management Practice	Rationale
<p>Maintain the natural shoreline or riparian habitat.</p> <ul style="list-style-type: none"> • Preserve a minimum 75 foot wide buffer of continuous, undisturbed native vegetation along at least 50% of the parcel's shoreline or stream bank. • Along remaining 50% of shoreline, limit vegetation removal to what is necessary to accommodate paths, docks, or other limited development. 	<p>Protects water quality by reducing nutrient loading in lakes and minimizing temperature changes to stream environments.</p> <p>Provides flood control and reduces erosion and sedimentation.</p> <p>Protects fish and wildlife habitat by providing cover, nest sites and spawning areas.</p>
<p>Minimize impervious surfaces on shoreline lots.</p> <ul style="list-style-type: none"> • Limit to maximum of 25% of lot area. • Minimize as much as possible within 75 feet of the water's edge. 	<p>Impervious surfaces such as pavement, roof tops, and compacted soil allow runoff to enter waterbodies more readily.</p> <p>Runoff in residential or commercial areas may contain phosphorus and other nutrients that lead to oxygen deficits and algal blooms.</p>
<p>Avoid adding sand beaches or adding fill material to lakeshore, stream banks or wetland areas.</p>	<p>Sand or fill reduces water clarity, is harmful to aquatic life and may contain phosphorus that enriches waterbodies.</p>
<p>Adhere to the state of Alaska's 100 foot waterbody separation for septic systems and outhouses, and keep septic systems in good working order.</p>	<p>Bacterial contamination from poorly maintained or leaking septic systems or outhouses is a human health concern.</p> <p>Nutrients from poorly functioning septic systems or outhouses are waterbody pollutants.</p>
<p>Use landscaping practices that will reduce degradation of waterbodies, including:</p> <ul style="list-style-type: none"> • Test soils to see if fertilizers are needed and use sparingly. • Design a smaller lawn to reduce fertilizer use. • Use native species that grow well without fertilizer. • Avoid fertilizer use completely within 50 feet of the water's edge. 	<p>Lawns are often over-fertilized, which leads to harmful levels of nutrients in the water.</p> <p>Lawns are not as effective as natural vegetation for pollution filtration.</p> <p>Lawns do not provide protective cover for fish and wildlife populations that are part of the waterbody system.</p>
<p>Maintain at least a 75 foot distance from the water's edge for:</p> <ul style="list-style-type: none"> • Additional permanent or accessory buildings. • Driveways, roads and other impervious surfaces. • Livestock or dog quarters or yards. • Manure or compost piles. • Long-term vehicle or equipment storage. <p>Exceptions may include boathouses, floatplane hangers, marinas, piers and docks that need to be closer than 75 feet to serve their purposes.</p>	<p>Protects human health and water quality by reducing contamination from animal waste, compost, fuels, sediment and other substances that pollute waterbodies.</p>

Mat-Su Borough Ordinance 05-023 established voluntary measures that property owners can use to protect the quality of our lakes, streams and wetlands. For more information, contact the Matanuska-Susitna Borough, Department of Planning and Land Use at 745-9851.

